Second Half 2017 Groundwater Monitoring Report – Zanesville Well Field Site

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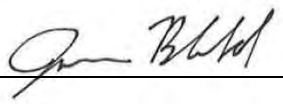
Prepared by 

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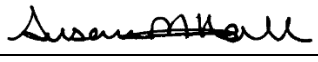
Reviewed by 

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1.0 INTRODUCTION

On behalf of United Technologies Corporation (UTC), Stantec Consulting Services, Inc. (Stantec) is submitting this Second Half 2017 Groundwater Monitoring Report (Report) for the Zanesville Well Field Site located in Zanesville, Ohio (Site). The Site Location Map is presented as Figure 1. This Report presents the results of the Fourth quarter groundwater monitoring event and the system operation and maintenance (O&M) for the Second Half 2017. The Fourth Quarter groundwater monitoring activities were conducted in accordance with the Zanesville Well Field Site – *Revised Groundwater Monitoring Plan* (RGWMP, SECOR, 2007) and *Revised Groundwater Monitoring Schedule* (RGMS, STANTEC, 2016) approved by the USEPA (electronic mail approval September 15, 2016). The RGMS is presented in Table 1. In addition, the activities and this Report reflect the comments received from the EPA in their review of the subsequent semi-annual groundwater monitoring reports to fulfill the requirements presented in the Statement of Work (SOW) Section IV, Task IV, C – Semi-Annual Reports during O&M.

The Third Quarter groundwater elevation monitoring was conducted on September 20, 2017 and the Fourth Quarter groundwater elevation monitoring was conducted on December 4, 2017.The Fourth Quarter groundwater sampling was conducted December 4 through December 7, 2017 and January 9, 2018. The O&M activities performed at the Site during the Second Half 2017 are presented in Appendix A.

The Fourth Quarter groundwater chemistry monitoring network consisted of 40 sampling locations and consisted of:

- 33 groundwater monitoring wells;
- Containment System wells used for groundwater capture and remediation:
  - Four groundwater interceptor wells I-1, I-2, I-3, and I-4;
  - Containment wells W-6 and W-12; and,
- City of Zanesville well W-7.

The monitoring well locations are illustrated in Figure 2. The groundwater sampling was performed in accordance with the project Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP). The laboratory analyses and data validation were performed in accordance with Data Quality Objective III (DQO Level III).

2.0 SUMMARY OF MONITORING ACTIVITIES

The following section provides a description of the groundwater monitoring activities completed as part of the Fourth Quarter 2017 monitoring event. Groundwater elevation data is discussed in Section 3.0 and collection procedures are presented in Appendix B. Tables 2 and 3 present the Third and Fourth Quarter 2017 groundwater elevations, respectively.

2.1 CONTAINMENT SYSTEM FLOW RATE DATA COLLECTION

In accordance with the RGWMP, Stantec gathered the containment system flow rate data from both on-site interceptor wells (I-1, I-2, I-3, and I-4) and off-site containment wells (W-6 and W-12). Table 4 presents a summary of groundwater extraction volumes, rates, operational time, and system notes. Between July 1, 2017 and December 31, 2017, a total of approximately 95.50 million gallons of groundwater (an average pumping rate over that period of 360 gallons per minute (gpm) were recovered by the interceptor wells. An average extraction rate of 120 gpm, 94 gpm, 97 gpm, and 49 gpm was measured for wells I-1, I-2, I-3 and I-4, respectively. Interceptor wells operated continuously during the Second Half of 2017 with the exception of maintenance operations completed during July 2017. Operations and Maintenance of the containment system wells are presented in Appendix A.

An additional 181.69 million gallons (average extraction rate of approximately 678 gpm) was pumped from the containment wells (W-6 and W-12). During the Second Half of 2017, W-6 and W-12 operated continuously with the exception of a short period in July 2017 when a severe weather event shut down the wells.

In addition, the City of Zanesville Well Field personnel provided data regarding the total daily flow rate and individual well operational data for the public water supply wells in the Zanesville Well Field. These data are summarized in Table 5. The complete data set from which the table was compiled is presented in Appendix C.

2.2 GROUNDWATER SAMPLING

The Fourth Quarter 2017 Groundwater Sampling Field Data Sheets are presented in Appendix D. The groundwater sampling methodology is presented in Appendix B. Groundwater samples were shipped by overnight service to SGS Laboratories, Inc. (SGS) located in Dayton, New Jersey, for laboratory analysis. Sample custody was documented using the chain-of-custody procedures presented in the O&M Plan.

2.2.1 Deviations from the Groundwater Monitoring Plan

The following deviations from the RGWMP are noted:

- Third Quarter groundwater elevation measurements were initially measured on September 20, 2017. After data analysis the groundwater elevations were re-measured on October 4, 2017. The October 4, 2017 data are presented in this report.
- B-2D and B-2S were not sampled due to insufficient water in the wells.

- During Fourth Quarter 2017, eleven monitoring wells (B-2I, B-4S, B-4I, B-4D, B-5I, B-5D, B-6S, B-6I, B-8S, B-8I, and B-9S) were purged dry before three (3) well volumes could be purged. Groundwater samples were collected after sufficient recharge was gauged in the monitoring well.
- A passive diffusion bag (PDB) was used to collect a groundwater sample from monitoring well S-2DB during the Fourth Quarter 2017 Sampling Event. A PDB was set for Fourth Quarter 2017 on December 6, 2017, five weeks prior to being sampled on January 9, 2018.

2.3 GROUNDWATER ANALYTICAL DATA

Groundwater samples were analyzed for Purgeable Halocarbons by USEPA Method 624, herein called volatile organic compounds (VOCs). The laboratory data was reviewed and validated by Stantec. Table 6 presents the Historical Groundwater Analytical Results from 1995 through January 2018. Second Half 2017 groundwater analytical results for trichloroethylene (TCE) are displayed on isoconcentration maps for the shallow, intermediate and deep aquifer zones and are included as Figures 3, 4 and 5, respectively. Second Half 2017 groundwater analytical results for cis-1,2-dichloroethylene (1,2-DCE) are displayed on isoconcentration maps for the shallow, intermediate and deep aquifer zones and are included as Figures 6, 7 and 8, respectively. Validated laboratory analytical results for the Fourth Quarter 2017 sampling event is summarized and presented in Table 7. Second Half 2017 validation checklist report and associated laboratory result table is presented in Appendix E. The laboratory analytical reports are included in Appendix F.

Target Zone maps for the shallow, intermediate, and deep aquifer zones depict the interpolated maximum extent of VOC contamination over the Fourth Quarter 2017. The Target Zone Maps provide a simplified version of the extent of groundwater contamination that can be used to quickly evaluate the distribution of the targeted VOCs in groundwater and assist in interpolation techniques such as capture zone analysis and particle tracking.

Visual inspection of the Target Zone maps indicates that the areal distribution of Targeted VOCs based on Second Half 2017 data is smaller than was observed during First Half 2007 when comparable target zone maps were first developed.

3.0 GROUNDWATER ELEVATION DATA ANALYSIS

In accordance with the RGWMP, groundwater elevation data was subjected to the following analyses to evaluate the effectiveness of groundwater containment system:

1. Groundwater potentiometric surface interpolation for each zone (shallow, intermediate, and deep) using kriging with log-linear interpolation;
2. Particle tracking;
3. Gradient vector analysis; and
4. Capture zone analysis.

The approach to the groundwater containment evaluation uses multiple interpretation techniques (or lines of evidence) to increase the value of the inference that can be made from the collected data sets. All groundwater investigations require some level of spatial and temporal interpretation to allow inference between data measurements and conclusions, by using the methodology described below; meaningful inference can be made regarding the nature of containment and the adequacy of the monitoring network.

The following sections summarize results for each analysis performed. The analysis procedures are presented in Appendix B.

3.1 POTENTIOMETRIC SURFACE INTERPOLATION

The potentiometric surface data for each of the three identified groundwater zones (shallow, intermediate, and deep) were contoured using the September 2017 and December 2017 groundwater elevation data presented in Tables 2 and 3.

Groundwater potentiometric surface maps for the groundwater elevations collected in the shallow, intermediate and deep zones of the alluvial aquifer during the Second Half of 2017 are presented as Figures 12 through 17. In general, the groundwater potentiometric surface maps for the Second Half of 2017 indicate flow is primarily towards localized groundwater depressions resulting from operation of the containment system: on-site groundwater interceptor wells (I-1, I-2, I-3, I-4), off-site containment wells (W 6 and W-12), and off-site municipal water supply wells. Based upon the groundwater potentiometric surface maps, groundwater depressions caused by the operation of the groundwater containment system are generally evident east (W-6 and W-12) and/or west (I-1, I-2, I-3, and I-4) of the Muskingum River depending on the aquifer zone.

Regional groundwater flow converges on the localized low areas created by the groundwater containment system with groundwater divides separating the pumping centers. The local groundwater divide underlying the Muskingum River between the interceptor wells (I-1 through I-4) and the containment wells (W-6 and W-12) is referred to as the “river divide”. The local groundwater divide separating the containment wells (W-6 and W-12) from the City of Zanesville municipal supply wells is referred to as the “well field divide”. Figures 18 through 23 use the inferred potentiometric surface in combination with a particle tracking algorithm to further delineate localized groundwater

divides and pumping center capture zones utilizing Third and Fourth Quarter 2017 data. As illustrated by groundwater contours in Figures 18 through 23, it is evident that there continues to be hydraulic control of groundwater at the Site.

Particle tracking maps created using groundwater elevation data collected during the Third and Fourth Quarters of 2017 in conjunction with groundwater extraction data for shallow, intermediate, and deep aquifer zones are presented in Figures 18 through 23. Particle tracking maps for the Second Half 2017 indicate regional and target zone groundwater flow converges on localized low areas created by the groundwater containment system located on the western (interceptor wells I-1, I-2, I-3 and I-4) and eastern (containment wells W-6 and W-12) sides of the Muskingum River. Hypothetical particles are released from a defined evenly spaced gridded pattern to simulated particle movement across the Site. Particle tracking analysis presents a visual assessment of the extent of the containment system capture zones beyond the identified contaminant Target Zones. Key groundwater flow features such as the well field and river divides are obtained through particle tracking analysis.

In general, interpolated sinks are evident on both the western and eastern sides of the river, associated with the groundwater containment system to the west (I-1 through I-4) and the east (W-6 and W-12). The area of influence of the containment system varies between aquifer zones depending on the groundwater elevations that were collected during the groundwater gauging event.

During the Third Quarter 2017:

- The river divide was generally observed beneath the river in all three aquifer zones.
- The well field divide was generally observed east of City Well W-3 and south of W-1 in the shallow and deep zones and was observed just west of City Well W-3 and south of W-1 in the intermediate aquifer zone. The well field divide is positioned northeast of W-8 in all three aquifer zones.

During Fourth Quarter 2017:

- The river divide was generally observed beneath the river in the shallow, intermediate, and deep aquifer zones with the river divide in the deep aquifer zone positioned slightly to the east of the river divides in the shallow and intermediate zones.
- The well field divide was generally observed east of City Well W-3 and south of W-1 in the shallow and deep zones and was observed west of City Well W-3 and south of W-1 in the intermediate aquifer zone. The well field divide is positioned northeast of W-8 in all three aquifer zones.

A review of the potentiometric surface and particle tracking maps (Figures 12 through 23) show general regional and target zone groundwater flow continues to converge on localized low areas created by the groundwater containment systems indicating capture is maintained.

3.2 GRADIENT VECTOR ANALYSIS

The gradient vector analysis is presented in Figures 24 through 26. Based upon the data available in the triangular elements, groundwater flow direction at the identified triplets is either towards the interceptor and containment wells or tangentially in the direction of extraction. The groundwater flow of the identified triplets towards the interceptor and

containment wells together with evidence presented in particle tracking (Section 3.3) reinforce that, capture is maintained. The observed hydraulic gradient ranged from 0.0008 feet per foot (ft/ft) to 0.0181 ft/ft (Appendix G). This is consistent with our understanding of the hydrogeologic conditions of the Site displaying a relatively flat but steady capture being maintained by the on-site and off-site containment wells. A complete historical comparison of the observed variability of magnitude and direction of the groundwater gradients as calculated through the gradient vector analysis is presented in Appendix G.

3.3 PARTICLE TRACKING

The constructed potentiometric surfaces (refer to Section 3.1) were used in combination with a GIS particle tracking algorithm and the Target Zone maps (refer to Figures 9, 10 and 11) to evaluate the areal distribution of the capture zone associated with the containment system. For each of the potentiometric surface maps developed quarterly for the shallow, intermediate and deep aquifer zones, a particle tracking analysis was completed using particles originating from the extent of the Target Zone.

Target Zone particle tracking traces hypothetical particles released along the furthest extent of observed contamination defined by the Target Zone. During the Fourth Quarter of 2017, particle tracks originating from the defined target zones for the shallow, intermediate, and deep aquifer zones are captured by the containment system and presented in Figures 27 through 32.

Based upon target zone particle tracking analysis for the Second Half of 2017, the inferred extent of VOCs above maximum contaminant levels (MCLs) in groundwater is anticipated to be captured by the containment wells in each of the three aquifer zones.

3.4 GROUNDWATER CONTAINMENT DISCUSSION

The multiple lines of evidence analysis of the Second Half 2017 potentiometric surface data continues to demonstrate effective containment of the Target Areas in each of the three aquifer zones. The following observations are presented based upon review of the groundwater potentiometric surface maps, particle tracking maps, and gradient vector analysis.

- Third Quarter 2017 – Figures 12 through 14 and Figures 18 through 20. Observed regional groundwater flow and flow within the aquifer zones converge on the groundwater containment system locations within the Site and municipal well field indicating capture of VOC impacted groundwater for the Third Quarter of 2017. On the West side of the Muskingum River, groundwater contours converge around interceptor wells. On the East side of the Muskingum River, groundwater contours converge on W-12 and W-6. There is confidence that these regional sinks are providing sufficient capture to contain the identified target zones east and west of the Muskingum River within all aquifer zones. The inferred position of the River Divide is beneath the Muskingum River. In general, the Well Field Divide is positioned between City Wells W-8 and W-1.

- Fourth Quarter 2017 – Figures 15 through 17 and Figures 21 through 23. Observed regional groundwater flow and flow within the aquifer zones converge on the groundwater containment system locations within the Site and municipal well field indicating capture of VOC impacted groundwater during the Fourth Quarter of 2017. On the West side of the Muskingum River, groundwater contours converge

around interceptor wells. On the East side of the Muskingum River, groundwater contours converge on W-12 and W-6. There is confidence that these regional sinks are providing sufficient capture to contain the identified contaminants.

  - The inferred position of the River divide for all the aquifer zones is beneath the river between the interceptor wells and the W-6/W-12 containment wells.
  - The inferred position of the Well Field Divide for the aquifer zones in the shallow and deep aquifers is positioned east of City Well W-3 and W-8 and the intermediate is positioned south of City Well W-1 and W-3 and north of City Well W-8.

- Second Half 2017 – Figures 24 through 26. The Triangular Maps are based upon the evaluation of hydraulic gradient magnitude and direction in key triangular elements. Groundwater flow direction at the identified triplets proximal to pumping centers is towards the containment system. Groundwater flow direction at the margins of the Site is either towards the containment system wells or tangentially in the direction of extraction. The data results from the gradient analysis are consistent with data from the inferred potentiometric surface and the particle tracking analyses that indicates capture of VOC impacted groundwater.
- Third and Fourth Quarter 2017 – Figures 27 through 32. Target Zone particle tracking maps for both quarters display particles originating from the furthest extent of the observed contamination (groundwater analytical data collected during December 2017) and the hypothetical path they will travel in relation to their respective potentiometric surfaces and the containment system extraction rates. This analysis has shown that capture of VOC impacted groundwater was maintained by the interceptor and containment wells in each aquifer zone for both Third and Fourth Quarters of 2017.

Both Third and Fourth Quarter 2017 figures indicate consistent and confident capture of VOC impacted groundwater at the Site.

4.0 STATISTICAL ANALYSIS OF TCE AND 1,2-DCE

The following section provides a summary of a statistical analysis conducted on the TCE and 1,2-DCE groundwater data obtained during the Fourth Quarter monitoring event of 2017. The purpose, data processing, analyses performed, and the result summaries of these statistical analyses are presented below.

A limited statistical analysis using Sanitas™ for Groundwater is performed on the Site's existing database to limit the degree of interpretation and to filter out anomalous or spurious data points with an unbiased degree of confidence.

For each well at the subject Site where sufficient data was available (minimum of eight data points), the concentrations of TCE and 1,2-DCE were evaluated using at least three separate statistical techniques. An additional technique (Seasonality) was used for those wells having sufficient data (three data points for each of the four seasons). The statistical techniques used to analyze the Fourth Quarter 2017 TCE and 1,2-DCE results included:

- Outlier analysis;
- Box and Whisker Analysis;
- Sen's Slope Estimator; and
- Seasonality (where sufficient data are available).

Procedural information on the statistical analysis of VOC data and database preparation is presented in Appendix B.

4.1 OUTLIER ANALYSIS

Outlier analysis of TCE data concluded:

- 4 wells did not have a statistical outlier and had a normal or log-normal distribution,
- 30 wells did not have a statistical outlier and were determined to be not normalizable,
- 7 wells had a statistical outlier and a normal or log-normal distribution, and
- 2 wells had a statistical outlier and were determined to be not normalizable.

Outlier analysis of 1,2-DCE data concluded:

- 0 wells did not have a statistical outlier and a normal or log-normal distribution,
- 34 wells did not have a statistical outlier and were determined to be not normalizable,
- 4 wells had a statistical outlier and normal or log-normal distribution, and
- 5 wells had a statistical outlier and were determined to be not normalizable.

Although outliers were identified in the TCE and 1,2-DCE data sets, the outliers were not removed as the suspect points were not unequivocally proven to be erroneous. The resultant outliers (flags) indicate that before these individual data points can be removed, a reasonable explanation for their occurrence must be identified (i.e., new source, leakage, lab contamination, instrument failure, field contamination, etc.). The outlying values for each well

analyzed are identified in blue and are shown on the individual well plots for the outlier analysis presented in Appendix H. The outlier analysis of TCE and 1,2-DCE data conclusions are represented in Table 8. Further details and explanation of outlier analysis is presented in Appendix B.

4.2 BOX & WHISKERS ANALYSIS

Box & Whiskers plots were generated for each well at the Site where sufficient TCE and 1,2 DCE data points were available (Appendix I). Additionally, the plots contain wells grouped according to stratigraphic occurrence (i.e., depth of completed well screens with respect to similar water-producing horizons), spatial separation relative to the suspect release point, and detected data.

The Box & Whiskers results are consistent with past analysis and appear to reveal a spatial imparity among the data as it relates to hydrostratigraphic position. The historical variations among the average concentrations of TCE in the Shallow, on-site wells are generally high, with concentrations in several wells ranging greater than one order of magnitude. This type of variability is not uncommon in near-source wells. It is important to note that these Shallow zone wells, as a group, have far greater concentrations than the corresponding Deep and Intermediate zone on-site wells.

Within the Shallow on-site well group, the Box & Whiskers plots show that the identified wells are exhibiting atypical behavior in comparison to the shallow well data set.

- Well B-4S and well B-6S are near the perimeter of the identified shallow plume. Hence, the concentrations of TCE and 1,2-DCE are considerably less than in the rest of the wells in the group.
- Co-located shallow wells (B-15, B-16, B-17, SM-1, SM-2, and SM-3) near the source area show high ranges of concentration for 1,2-DCE and TCE. As evident from large “whiskers” at ends of boxplots, large variations of concentrations are seen in some wells (B-17), these are atypical natural variation and these wells do not exhibit spatial distribution.

Within the Intermediate and Deep on-site well group, the Box & Whiskers plots indicate the following:

- In general, concentrations of TCE and 1,2-DCE in the Intermediate wells are generally lower compared to the shallow wells in the same area. Wells (B-1I, B-3I, B-4I) located west of river show variable but comparable concentrations within the wells.
- These wells, B-1I, B-3I, B-4I and B-6I, especially B-1I have greater variability for both 1,2-DCE and TCE than the other wells as evidenced by the long “tail” on the high end. This is likely because they are more directly down gradient of the source zone than the other wells. In addition, each of these wells has exhibited a significant reduction in concentrations over the past five years.
- 1,2-DCE and TCE was detected infrequently in deeper well (B-4D). B-4D analysis indicates substantially lower concentrations of both TCE and 1,2-DCE indicating the majority of the residual mass historically was and remains in the upper portion of the aquifer at this location.
- With the exception of B-1I and B-4I, the observed range of 1,2-DCE concentrations have historically been relatively low in the Intermediate and Deep wells on the west side of the Muskingum River.

- One interceptor well (I-4) have indicated the presence of 1,2-DCE above the MCL in recent (Second Half 2017) monitoring events.

Within the Interceptor well group, the Box & Whiskers plots indicate the following:

- Well I-4, has a greater historic variability in concentrations as evidenced by the long "whiskers" on the high end for both TCE and 1,2-DCE. The sustained elevated concentrations exhibited at this well (typically higher than the surrounding monitoring wells and the other Interceptor wells) indicates that this well is situated proximal to a source area. While this well continues to exhibit relatively greater concentrations than the remaining monitoring network, cumulative trends indicate a decrease in the range of one order of magnitude over the historic monitoring period.

Wells located at the east of the river exhibit no detects or lower concentrations of 1,2-DCE and TCE compared to wells located on west side of wells.

- Shallow wells (C-1S, C-2S, &C-3S) on the eastern side of river are non-detect or near non-detect for TCE and 1,2-DCE in all three wells. These wells do not show spatial variability. Although TCE is detected in more than 50% of the samples from well C-1S, the detections are near or below the laboratory reporting limit. In general, the concentration for both TCE and 1,2-DCE are much lower compared to shallow wells located at the west side of river.

- Intermediate wells (C-1I, C-2I, C-6, C-7, &C-11I) located on the east side of river are non-detect or near non-detect for of 1, 2-DCE. TCE is detected more frequently in these wells compared to 1,2 DCE.

- Deep well C-2D, has detectable concentrations of 1,2-DCE and TCE. Although high concentrations were observed historically in this well, the concentrations have been decreasing over time.

- Both 1,2-DCE and TCE is not detected in C-10D.

Further details and explanation of Box & Whisker analysis is presented in Appendix B.

4.3 SEN'S SLOPE ESTIMATOR ANALYSIS

Sen's Slope Estimator Analysis was performed during the Second Half 2017 reporting period in which two sets of data were analyzed: data collected over the past five years and all historical data. The five-year charts are reviewed below because they are most representative of current analytical trends. Charts for each of the well groups discussed have been prepared and are presented in Appendix J. The complete Sen's Slope Estimator analysis data set is compiled in Table 9. Further details and explanation of Sen's Slope Estimator analysis is presented in Appendix B.

Review of the five-year slope analysis indicates the following:

- One well (B-6I) has a decreasing trend significant at 98% confidence level for TCE and a zero-slope trend in 1,2-DCE.

- One well (W-12) has a decreasing trend significant at 98% confidence level for TCE and decreasing trend for 1,2-DCE.

- Eighteen monitoring wells (B-2I, B-4D, B-5D, B-8D, B-8I, B-8S, B-9S, B-13D, C-1D, C-1S, C-2S, C-3S, C-3D, C-8, C-9, C-10D, C-11I, and W-7) have a zero-slope trend for both TCE and 1,2-DCE with reported concentrations at or near the method detection limit.
- The three monitoring wells (B-16, I-4, and SM-2) with the highest reported concentrations of TCE and 1,2-DCE:
    - Both B-16 and I-4 have decreasing overall trends significant at the 98% confidence level for TCE and 1,2-DCE as evident from the full historical data set. However, data from the most recent 5 years continues to exhibit a visibly declining trend, but this trend is not significant at 98% confidence level.
    - SM-2: Has an overall decreasing trend for TCE at 98% as evident from full data analysis. However, this trend is not significant at the 98% confidence level for both TCE and 1,2 DCE in the last five years.

The number and magnitude of the statistically confirmed decreases of TCE and 1,2-DCE, demonstrate the effective removal of VOCs by the Air Sparge/Soil Vapor Extraction (AS/SVE) system, and hydraulic containment/capture as a result of the continuous operation of the remediation systems operating at the Site. Where increasing trends have been noted in the Sens Slope Analysis (all below the 98% confidence level) for the last 5 years in either TCE and/or 1,2-DCE (B-17, B-23 I/D, C-1I, C-3I, I-1, SM-2, and W-6), these wells are within the capture zone of the interceptor or containment wells.

4.4 SEASONALITY

Statistical analysis on the wells exhibiting detectable concentrations of TCE and 1,2-DCE showed no variation in the concentrations with regards to changing seasons within a 95% confidence interval.

Statistical analysis for monitoring wells B-1I, B-4I, B-15, I-1, I-2, and SM-1 indicate seasonality above the 95% confidence interval for TCE. Statistical analysis for monitoring wells B-1I, B-4I, B-16, and SM-3 indicate seasonality above the 95% confidence interval for 1,2 DCE. Monitoring well B-1I has consistently indicated low level concentrations of TCE and 1,2-DCE (less than 6 µg/L) over the monitoring period. It is possible that concentrations at this well are effected by the seasonal recharge of the Muskingum River (the well is directly adjacent to the river). The remaining wells indicated seasonality in only one of the two parameters, lending uncertainty to any conclusion of seasonal dependence. The seasonal dependence of these wells will continue to be evaluated in future monitoring events.

Charts for the wells with sufficient data to evaluate seasonality have been prepared and are presented in Appendix K. The statistical procedure for seasonality analysis is presented in Appendix B.

5.0 CONCLUSIONS FOR THIRD AND FOURTH QUARTER 2017

A multiple lines of evidence approach was taken to determine the effectiveness of the remediation systems at the Zanesville Well Field Site. The analyses presented herein demonstrate effective and sustained capture of the target zone (i.e., area of observed groundwater impact) and continued decline in COC concentrations in groundwater at the site. Conclusions derived from the analysis of hydrogeologic and analytical data collected during the Third and Fourth Quarters of 2017 are detailed in the following sections.

5.1 HYDRAULIC CONTAINMENT EVALUATION

The groundwater containment system consists of four interceptor wells (I-1, I-2, I-3, and I-4) on the west side of the Muskingum River and two containment wells (W-6 and W-12) on the east side of the Muskingum River. A rigorous multiple lines of evidence evaluation of groundwater capture was performed including: target zone analysis, groundwater contour analysis, hydraulic gradient analysis, and particle tracking. The multiple lines of evidence approach demonstrates that the groundwater containment system effectively provides hydraulic containment of the identified target zone within all three levels of the aquifer. This conclusion is supported by the following:

- Potentiometric surface maps created using groundwater elevation data in conjunction with groundwater extraction data demonstrate that regional groundwater converges on localized hydraulic sinks created by the groundwater containment systems. There is an interpreted sink evident on the west side of the river in the vicinity of the interceptor wells and a sink located on the east side of the river near containment wells W-6 and W-12 (Figures 12 through 17).

- Based upon the evaluation of hydraulic gradient magnitude and direction in key triangular elements, groundwater flow direction at the identified triplets proximal to pumping centers is towards the containment system wells (Figures 24 through 26). Groundwater flow direction at the margins of the Site is either towards the containment system wells or tangentially in the direction of extraction. The data available from the gradient analysis is consistent with the data from the inferred potentiometric surface and the particle tracking analyses that indicate capture of VOC impacted groundwater.

- Particle tracking provides an efficient means to quickly evaluate the capture of the Target Zones by visual evaluation of particle endpoints. Based upon the particle tracking, the inferred extent of VOCs above MCLs in groundwater is captured by the localized sinks created by the containment wells (Figures 27 through 29). The particle tracking analysis confirms that hydraulic containment is occurring at the Site.

Based upon the multiple lines of evidence (potentiometric surface, contaminant distribution, gradient analysis, and particle tracking), it is evident that hydraulic capture of the identified Target Zones has been sustained during the monitoring period. The groundwater containment system continues to be operated to meet this objective.

5.2 GROUNDWATER ANALYTICAL DATA EVALUATION

The groundwater analytical data for the Second Half 2017 monitoring period were evaluated to track the progress of remediation and to ensure that the remedial objectives of the Site are achieved. The remedial objectives for the Site include:

- Containment of the area of targeted VOCs above the groundwater standards and prevent migration to the Zanesville well field; and
- Reduction of VOC mass within the Target Zone.

As presented herein, the data collected during the period (July through December 2017) supports the conclusion that these objectives are being met by the current remediation program based upon the following:

- The extent of impact is defined by the 26 monitoring wells that exhibit TCE and 1,2-DCE concentrations below the Generic Unrestricted Potable Use Standards (UPUS). As shown in Figures 3 through 11 the extent of impact is well defined by these wells.
- Groundwater monitoring has demonstrated long term stability in areal extent of targeted VOCs as evidenced by the following:
    - 50 percent (20 out of 40) of the groundwater samples reported both TCE and 1,2-DCE below laboratory detection limits.
    - Two unique well locations (B-16 and I-4) exhibited concentrations greater than the groundwater protection standard for 1,2-DCE and thirteen unique well locations (B-16, C-1I, C-2D, C-2I, C-3I, SM-1, SM-2, I-1, I-2, I-3, I-4, W-6, and W-12) exhibited concentrations above the standard for TCE. Of the wells with detections at or above the groundwater protection standards, all are within the capture zones of the on-site interceptor wells or the containment wells. In fact, 6 of the 13 detections above groundwater protection standards are reported for samples collected at the containment systems wells themselves and the remaining detections above groundwater protection standards are within close proximity of the containment system wells.
    - The extent of 1,2-DCE is limited to a very small area proximal to interceptor well I-4 in the shallow and intermediate aquifer zones.
    - Similarly, TCE greater than the MCL in the shallow monitoring wells is limited to a small, well-defined area proximal to Interceptor Well I-4. TCE greater than the MCL in the intermediate and deep zones is more widely distributed; however, it is reported at concentrations substantially lower than the maximum concentrations observed in the shallow zone. The larger relative distribution of TCE in the deeper portion of the aquifer is inferred to be attributable to greater pumping from the deeper zones and is anticipated to diminish over time as evidenced in the stable or decreasing trends observed in Site monitoring wells.

- Groundwater monitoring has demonstrated decreasing VOC concentration trends confirming the successful operation of the remedial systems. Of the 40 wells with sufficient data to perform statistical slope analysis using data from the past five years (all concentration data with more than 8 data points), 34 wells indicated a decreasing or stable trend for TCE and 1,2-DCE. The number, magnitude and location of wells exhibiting a decreasing VOC concentration compared with wells exhibiting an increasing concentration (historically and within the last 5 years) suggests that the AS/SVE and groundwater containment systems continue to effectively remove VOCs and reduce VOC concentrations.

Based upon the data presented herein, it is evident that the operation of the remedial systems has effectively reduced mass, provided containment of the targeted VOCs above the groundwater standards, and prevented migration of VOCs to the Zanesville well field.

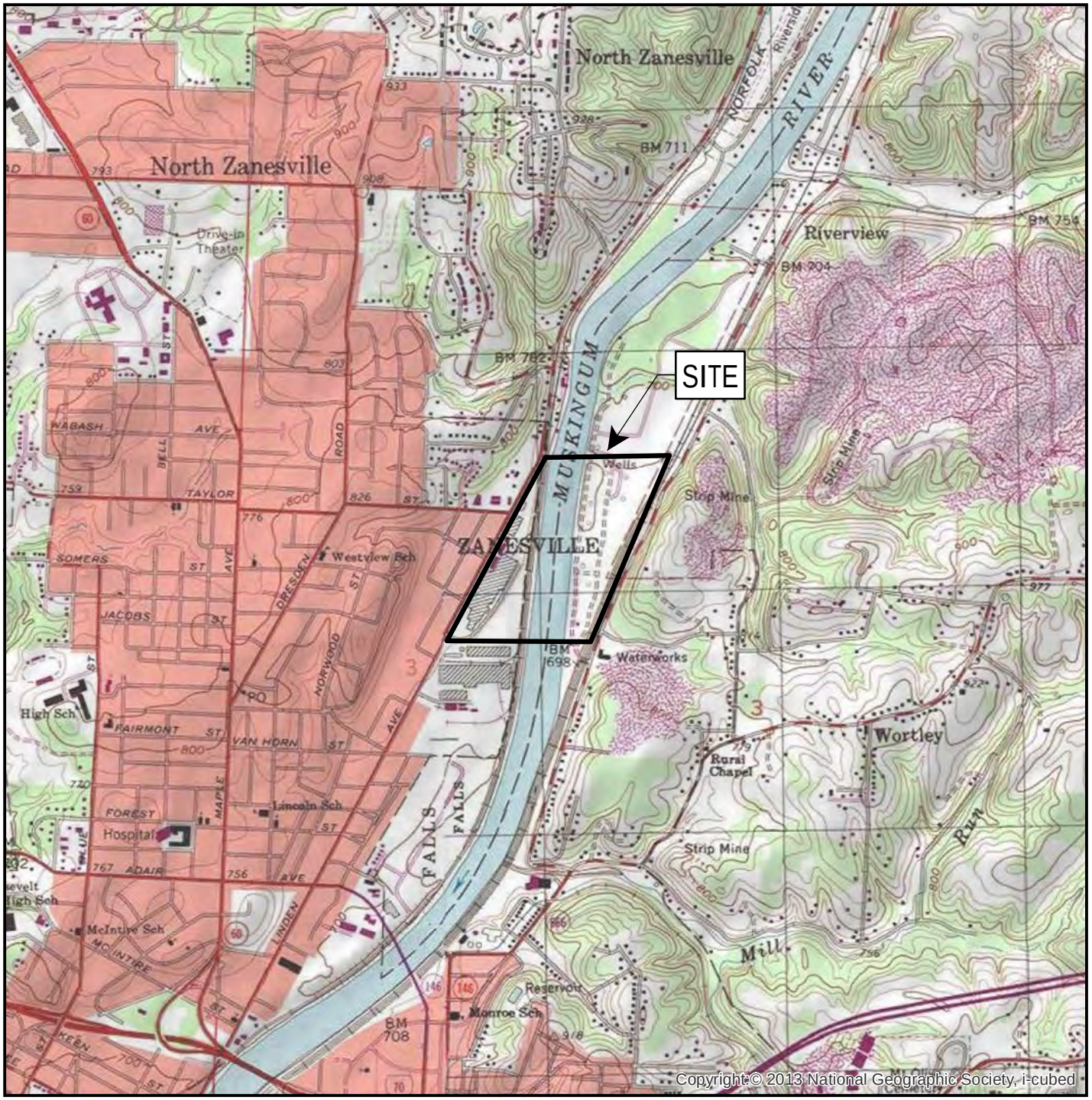
5.3 OPERATIONS AND MAINTENANCE

Operation and maintenance of the remediation systems during the Second Half of 2017 were performed in accordance with the *Operation and Maintenance Plan for Aquifer Sparging/Soil Vapor Extraction System*, August 12, 1996.

The O&M activities presented in Appendix A of this Groundwater Monitoring report provide documentation of compliance with the requirements presented in the SOW for Semi-Annual reporting.

FIGURES

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_1_site_location_map_zanesville_oh_20180423_8x11.mxd



OHIO

Source: PORTION OF U.S.G.S QUADRANGLE MAP
7.5 MINUTE SERIES (TOPOGRAPHIC)
ZANESVILLE EAST/WEST, OHIO

N 0 1,000 2,000 4,000 Feet

1 in = 1,466,500 feet (At original document size of 8x11)

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ZANESVILLE, OHIO

SITE LOCATION MAP

FIGURE: 1

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	JT	JM	05/04/18

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_2_site_map_zanesville_oh_20180423_11x17.mxd

LEGEND:

- MONITORING WELL
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- PROPERTY BOUNDARY

0 125 250 500

Feet

1 in = 250 feet
(At original document size of 11x17)

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SITE MAP

FIGURE: 2

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	ZE	JT	JM	05/04/18

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_3_tce_shlw_zanesville_oh_20180423_11x17.mxd

LEGEND:

- MONITORING WELL
- MONITORING WELL NOT SAMPLED IN SHALLOW ZONE
- UTC INTERCEPTOR WELL
- UTC INTERCEPTOR WELL NOT SAMPLED IN SHALLOW ZONE
- MUNICIPAL PRODUCTION WELL NOT SAMPLED IN SHALLOW ZONE
- TCE ISOCONCENTRATION CONTOUR MEASURED IN µg/L, DASHED WHERE INFERRED
- PROPERTY BOUNDARY
- 5.0 — DECEMBER 2017 TCE CONCENTRATION MEASURED IN µg/L
- <1.0 — NOT DETECTED
- (5.0) — NOT USED FOR CONTOURING

NOTE:

1) MAXIMUM CONCENTRATION USED FOR CONTOURING
2) J - INDICATES AN ESTIMATED VALUE
3) N - INDICATES PRESUMPTIVE EVIDENCE OF A COMPOUND

N

0 125 250 500

Feet

1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
TCE ISOCONCENTRATION MAP
(SHALLOW MONITORING WELLS)

FIGURE: 3

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_4_tce_inter_zanesville_oh_20180423_11x17.mxd

Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL NOT SAMPLED IN INTERMEDIATE ZONE
- UTC INTERCEPTOR WELL
- UTC INTERCEPTOR WELL NOT SAMPLED IN INTERMEDIATE ZONE
- MUNICIPAL PRODUCTION WELL NOT SAMPLED IN INTERMEDIATE ZONE
- TCE ISOCONCENTRATION CONTOUR MEASURED IN µg/L, DASHED WHERE INFERRED
- PROPERTY BOUNDARY
- 5.0 — DECEMBER 2017 TCE CONCENTRATION MEASURED IN µg/L
- <1.0 — NOT DETECTED
- (5.0) — NOT USED FOR CONTOURING

NOTE:

1) MAXIMUM CONCENTRATION USED FOR CONTOURING
2) J - INDICATES AN ESTIMATED VALUE
3) N - INDICATES PRESUMPTIVE EVIDENCE OF A COMPOUND

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
TCE ISOCONCENTRATION MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_5_tce_deep_zanesville_oh_20180423_11x17.mxd

LEGEND:

- MONITORING WELL
- MONITORING WELL NOT SAMPLED IN DEEP ZONE
- UTC INTERCEPTOR WELL
- UTC INTERCEPTOR WELL NOT SAMPLED IN DEEP ZONE
- MUNICIPAL PRODUCTION WELL NOT SAMPLED IN DEEP ZONE
- TCE ISOCONCENTRATION CONTOUR MEASURED IN µg/L, DASHED WHERE INFERRED
- PROPERTY BOUNDARY
- 5.0 DECEMBER 2017 TCE CONCENTRATION MEASURED IN µg/L
- <1.0 NOT DETECTED
- (5.0) NOT USED FOR CONTOURING

NOTE:

1) MAXIMUM CONCENTRATION USED FOR CONTOURING
2) J - INDICATES AN ESTIMATED VALUE
3) N - INDICATES PRESUMPTIVE EVIDENCE OF A COMPOUND

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
TCE ISOCONCENTRATION MAP
(DEEP MONITORING WELLS)

FIGURE: 5

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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LEGEND:

- MONITORING WELL
- MONITORING WELL NOT SAMPLED IN SHALLOW ZONE
- UTC INTERCEPTOR WELL
- UTC INTERCEPTOR WELL NOT SAMPLED IN SHALLOW ZONE
- MUNICIPAL PRODUCTION WELL NOT SAMPLED IN SHALLOW ZONE
- DCE ISOCONCENTRATION CONTOUR MEASURED IN µg/L, DASHED WHERE INFERRED
- PROPERTY BOUNDARY
- 5.0 DECEMBER 2017 DCE CONCENTRATION MEASURED IN µg/L
- <1.0 NOT DETECTED
- (5.0) NOT USED FOR CONTOURING

NOTE:

1) MAXIMUM CONCENTRATION USED FOR CONTOURING
2) J - INDICATES AN ESTIMATED VALUE
3) N - INDICATES PRESUMPTIVE EVIDENCE OF A COMPOUND

0 125 250 500
Feet

1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
DCE ISOCONCENTRATION MAP
(SHALLOW MONITORING WELLS)

FIGURE: 6

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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LEGEND:

- MONITORING WELL
- MONITORING WELL NOT SAMPLED IN INTERMEDIATE ZONE
- UTC INTERCEPTOR WELL
- UTC INTERCEPTOR WELL NOT SAMPLED IN INTERMEDIATE ZONE
- MUNICIPAL PRODUCTION WELL NOT SAMPLED IN INTERMEDIATE ZONE
- DCE ISOCONCENTRATION CONTOUR MEASURED IN µg/L, DASHED WHERE INFERRED
- PROPERTY BOUNDARY
- 5.0 DECEMBER 2017 DCE CONCENTRATION MEASURED IN µg/L
- <1.0 NOT DETECTED
- (5.0) NOT USED FOR CONTOURING

NOTE:

1) MAXIMUM CONCENTRATION USED FOR CONTOURING
2) J - INDICATES AN ESTIMATED VALUE
3) N - INDICATES PRESUMPTIVE EVIDENCE OF A COMPOUND

0 125 250 500
Feet

1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
DCE ISOCONCENTRATION MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 7

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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LEGEND:

- MONITORING WELL
- MONITORING WELL NOT SAMPLED IN DEEP ZONE
- UTC INTERCEPTOR WELL
- UTC INTERCEPTOR WELL NOT SAMPLED IN DEEP ZONE
- MUNICIPAL PRODUCTION WELL NOT SAMPLED IN DEEP ZONE
- DCE ISOCONCENTRATION CONTOUR MEASURED IN µg/L, DASHED WHERE INFERRED
- PROPERTY BOUNDARY
- 5.0 DECEMBER 2017 DCE CONCENTRATION MEASURED IN µg/L
- <1.0 NOT DETECTED
- (5.0) NOT USED FOR CONTOURING

NOTE:

1) MAXIMUM CONCENTRATION USED FOR CONTOURING
2) J - INDICATES AN ESTIMATED VALUE
3) N - INDICATES PRESUMPTIVE EVIDENCE OF A COMPOUND

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
DCE ISOCONCENTRATION MAP
(DEEP MONITORING WELLS)

FIGURE: 8

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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LEGEND:

- MONITORING WELL
- MONITORING WELL NOT SAMPLED IN SHALLOW ZONE
- UTC INTERCEPTOR WELL
- UTC INTERCEPTOR WELL NOT SAMPLED IN SHALLOW ZONE
- MUNICIPAL PRODUCTION WELL NOT SAMPLED IN SHALLOW ZONE
- PROPERTY BOUNDARY
- SHALLOW TARGET ZONE

NOTE:
1) DATA COLLECTED 12/2017
2) MAXIMUM CONCENTRATION USED FOR CONTOURING

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
TARGET ZONE MAP
(SHALLOW MONITORING WELLS)

FIGURE: 9

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	JB	SH	03/13/19

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LEGEND:

- MONITORING WELL
- MONITORING WELL NOT SAMPLED IN INTERMEDIATE ZONE
- UTC INTERCEPTOR WELL
- UTC INTERCEPTOR WELL NOT SAMPLED IN INTERMEDIATE ZONE
- MUNICIPAL PRODUCTION WELL NOT SAMPLED IN INTERMEDIATE ZONE
- PROPERTY BOUNDARY
- INTERMEDIATE TARGET ZONE

NOTE:
1) DATA COLLECTED 12/2017
2) MAXIMUM CONCENTRATION USED FOR CONTOURING

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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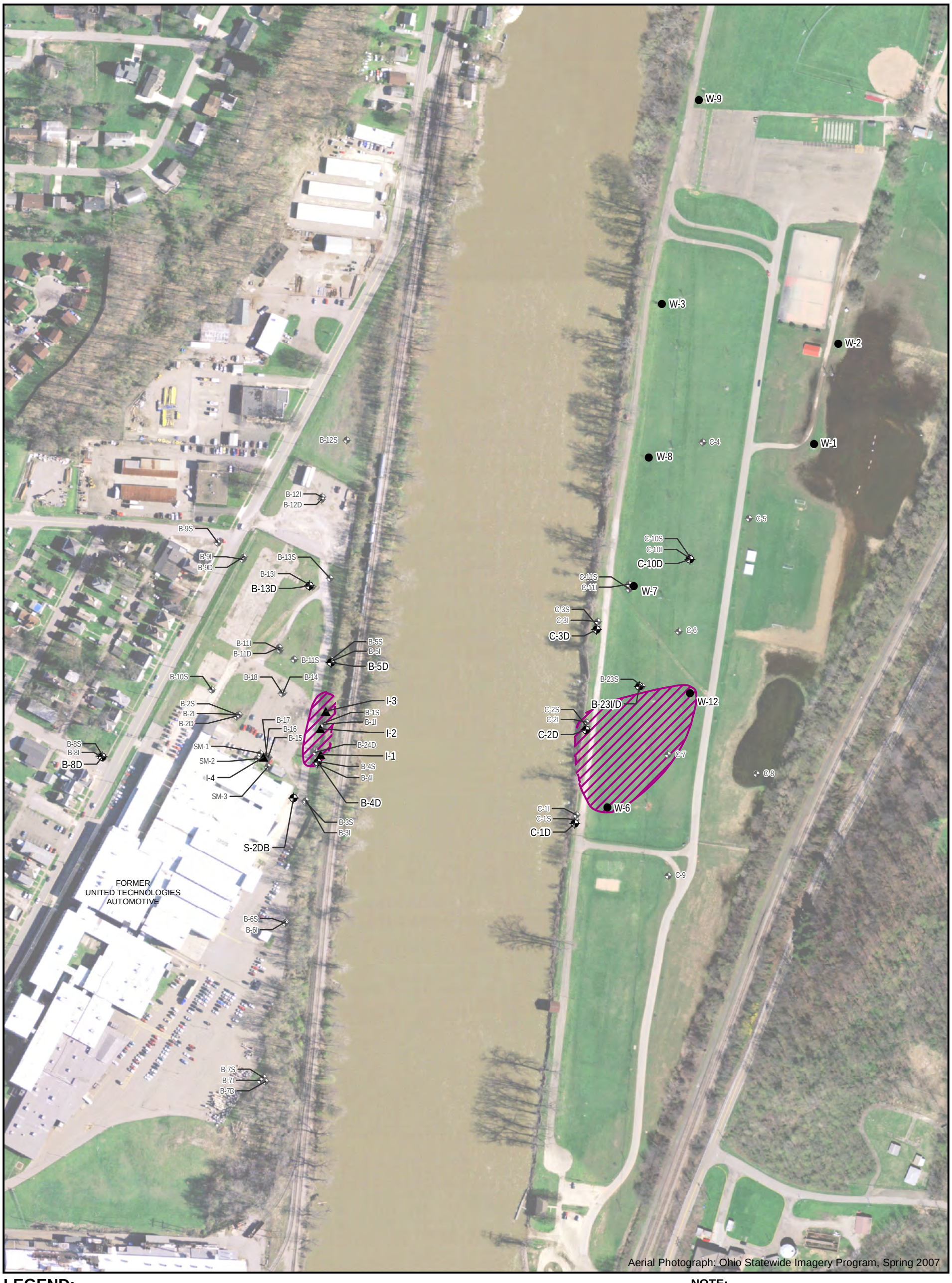
SECOND HALF 2017
TARGET ZONE MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 10

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_11_deep_target_zone_zanesville_oh_20170504_11x17.mxd



LEGEND:

- MONITORING WELL
- MONITORING WELL NOT SAMPLED IN DEEP ZONE
- UTC INTERCEPTOR WELL
- UTC INTERCEPTOR WELL NOT SAMPLED IN DEEP ZONE
- MUNICIPAL PRODUCTION WELL NOT SAMPLED IN DEEP ZONE
- PROPERTY BOUNDARY
- DEEP TARGET ZONE

NOTE:
1) DATA COLLECTED 12/2017
2) MAXIMUM CONCENTRATION USED FOR CONTOURING

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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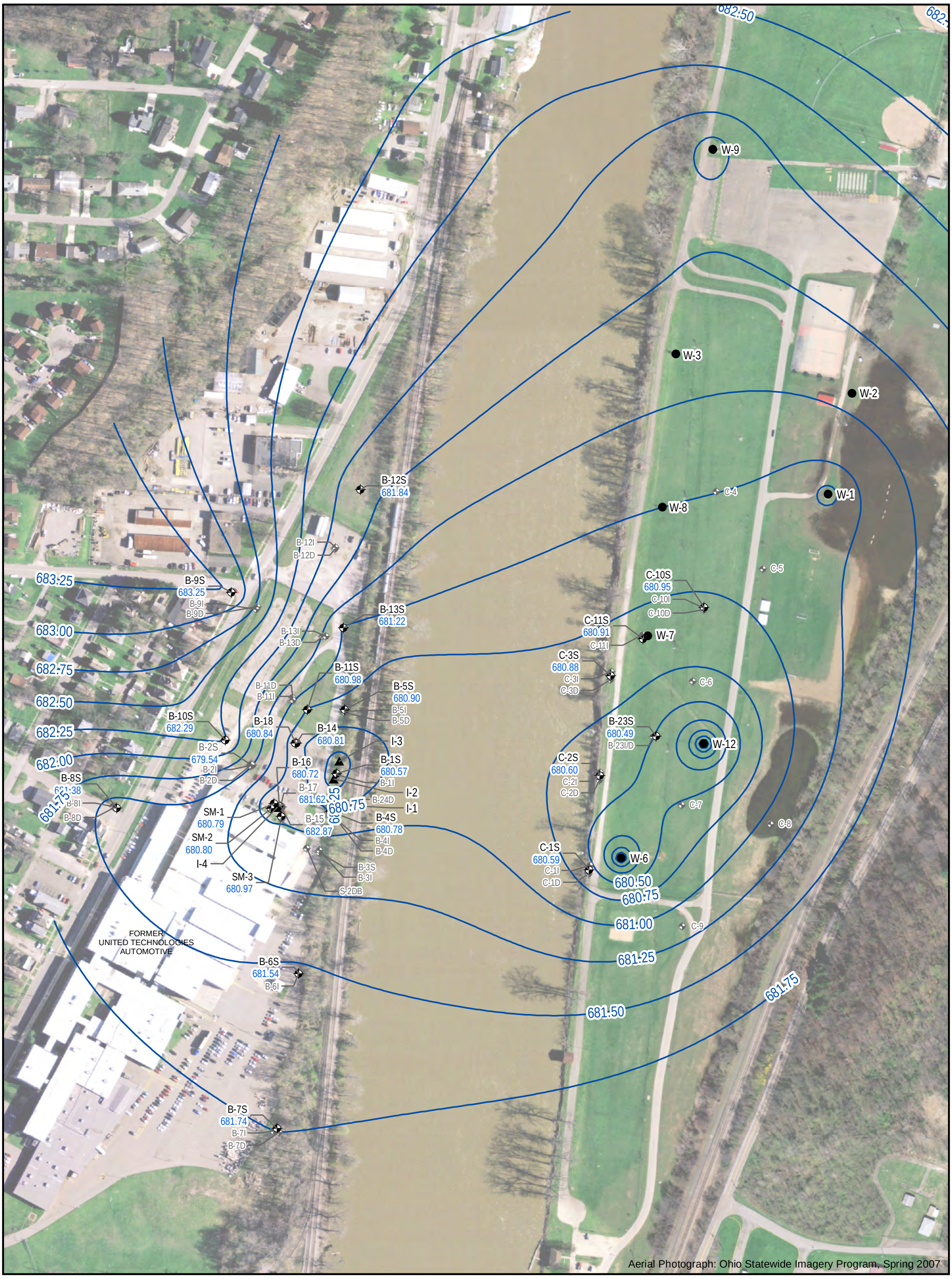
SECOND HALF 2017
TARGET ZONE MAP
(DEEP MONITORING WELLS)

FIGURE: 11

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_12_q3_2017_shlw_gwe_zanesville_oh_20170925_11x17.mxd



LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY

0 250 500
Feet
1 in = 250 ft

NOTE:
1) DATA COLLECTED OCTOBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

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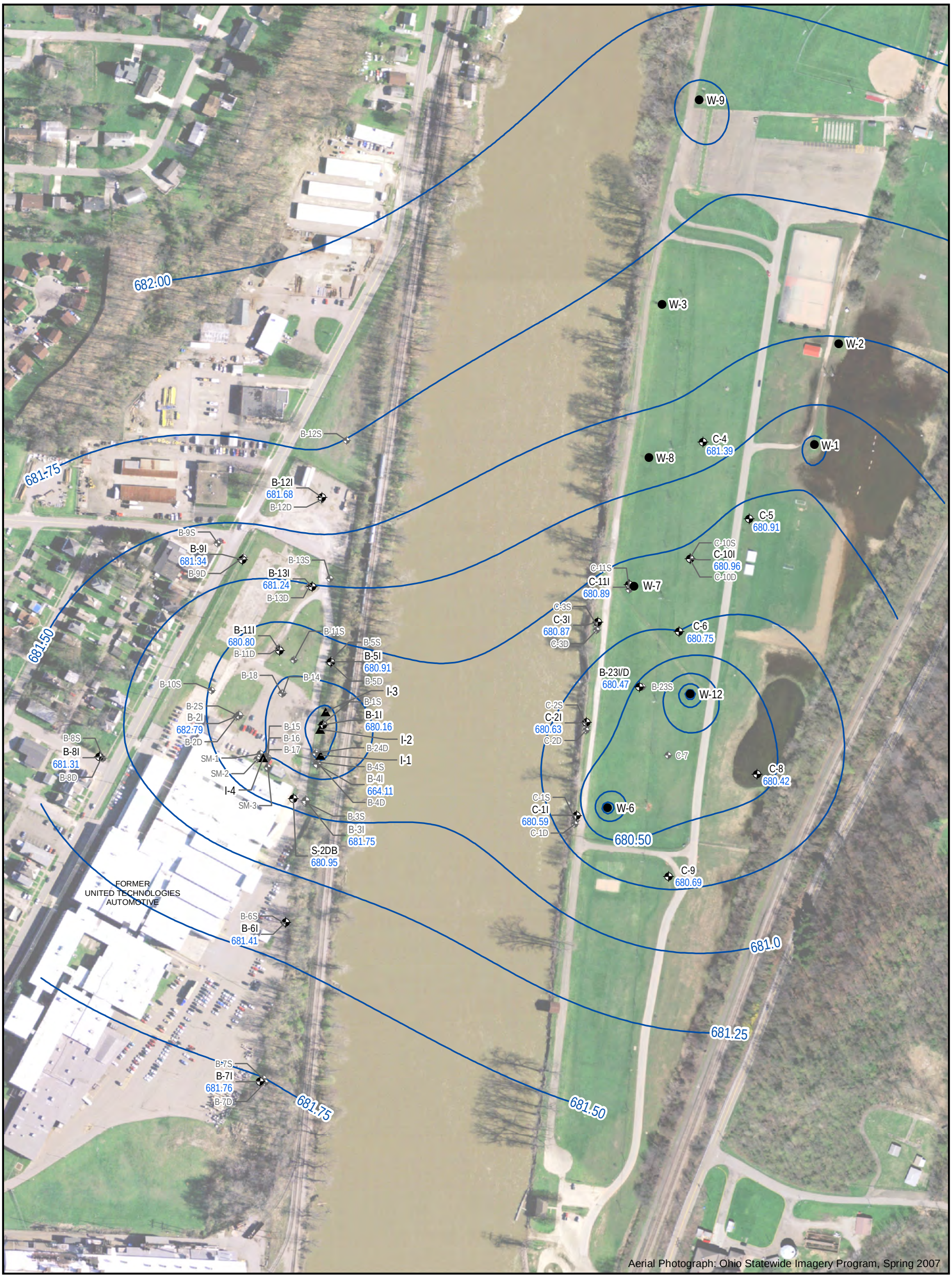
THIRD QUARTER 2017
POTENTIOMETRIC SURFACE MAP
(SHALLOW MONITORING WELLS)

FIGURE: 12

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182603199	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_13_q3_2017_inter_gwe_zanesville_oh_20170925_11x17.mxd



LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY

NOTE:
1) DATA COLLECTED OCTOBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 ft

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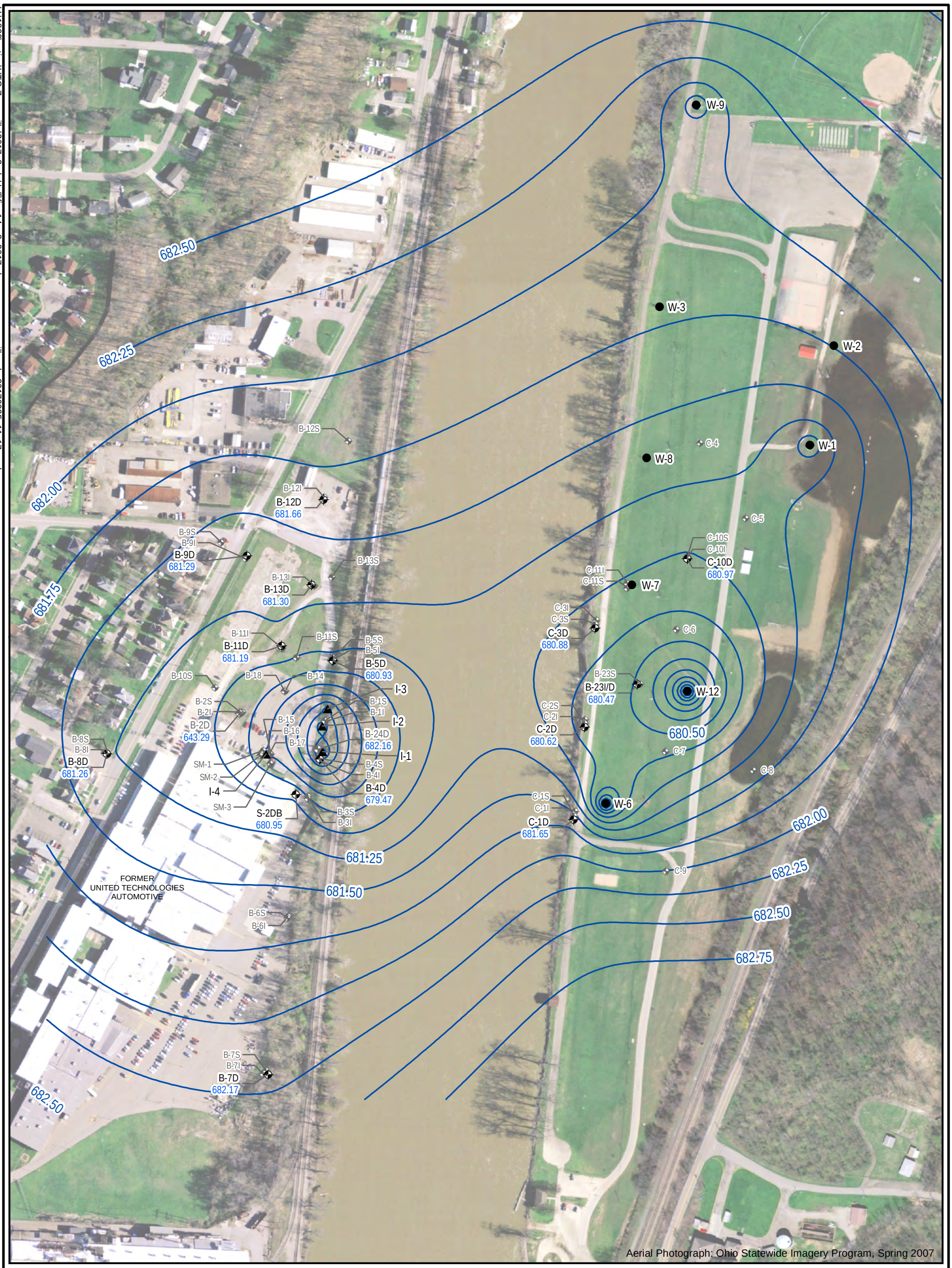
THIRD QUARTER 2017
POTENTIOMETRIC SURFACE MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 13

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182603199	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_14_q3_2017_deep_gwe_zanesville_oh_20170925_11x17.mxd



Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY

NOTE:
1) DATA COLLECTED OCTOBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 ft

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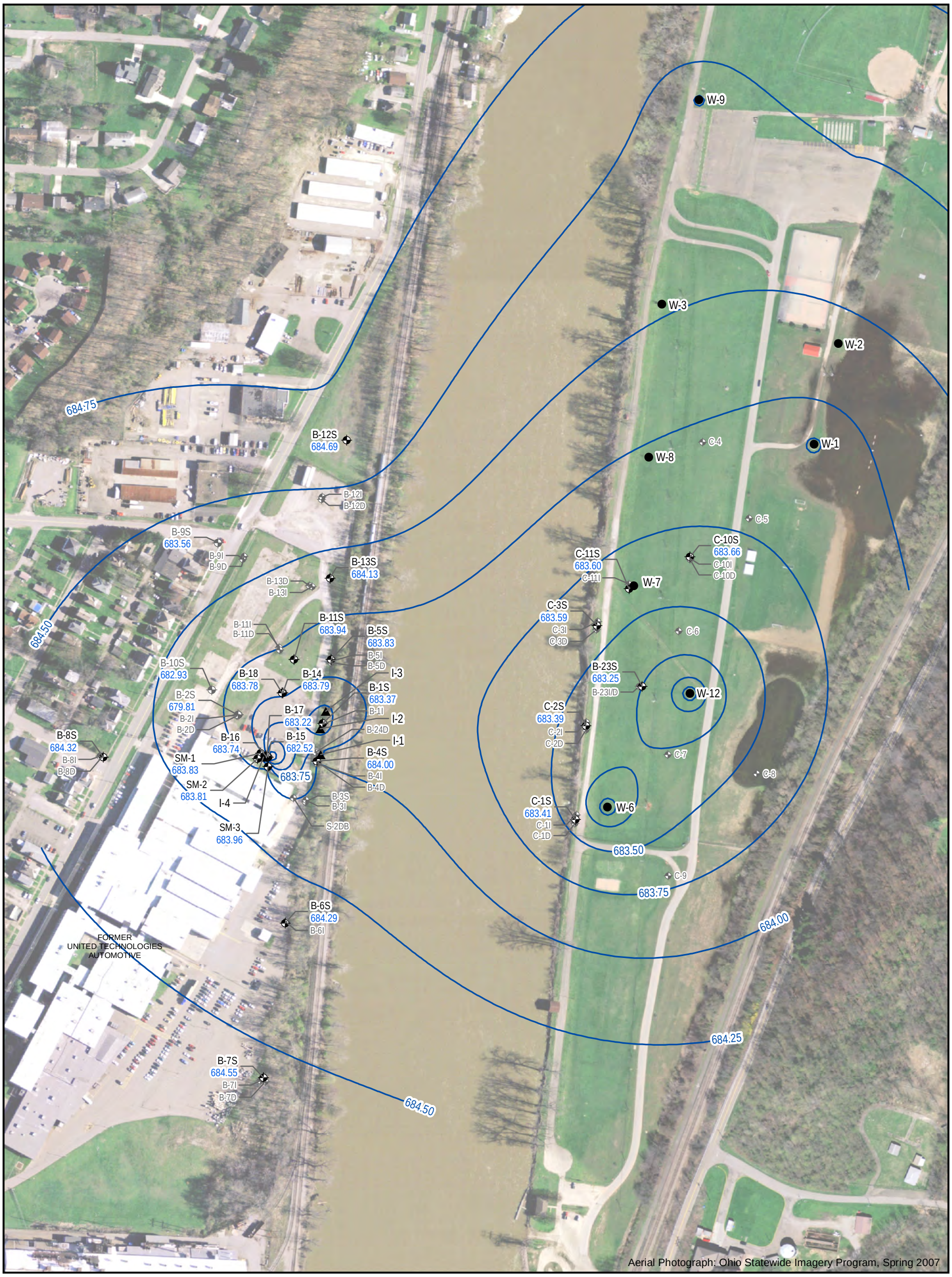
THIRD QUARTER 2017
POTENTIOMETRIC SURFACE MAP
(DEEP MONITORING WELLS)

FIGURE: 14

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182603199	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_15_q4_2017_shlw_gwe_zanesville_oh_20171206_11x17.mxd



LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY

NOTE:

1) DATA COLLECTED DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet

1 in = 250 feet
(At original document size of 11x17)

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FOURTH QUARTER 2017 POTENTIOMETRIC SURFACE MAP (SHALLOW MONITORING WELLS)

FIGURE: 15

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182603199	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_16_q4_2017_inter_gwe_zanesville_oh_20171206_11x17.mxd

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY

0 125 250 500
Feet

1 in = 250 feet
(At original document size of 11x17)

NOTE:

1) DATA COLLECTED DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

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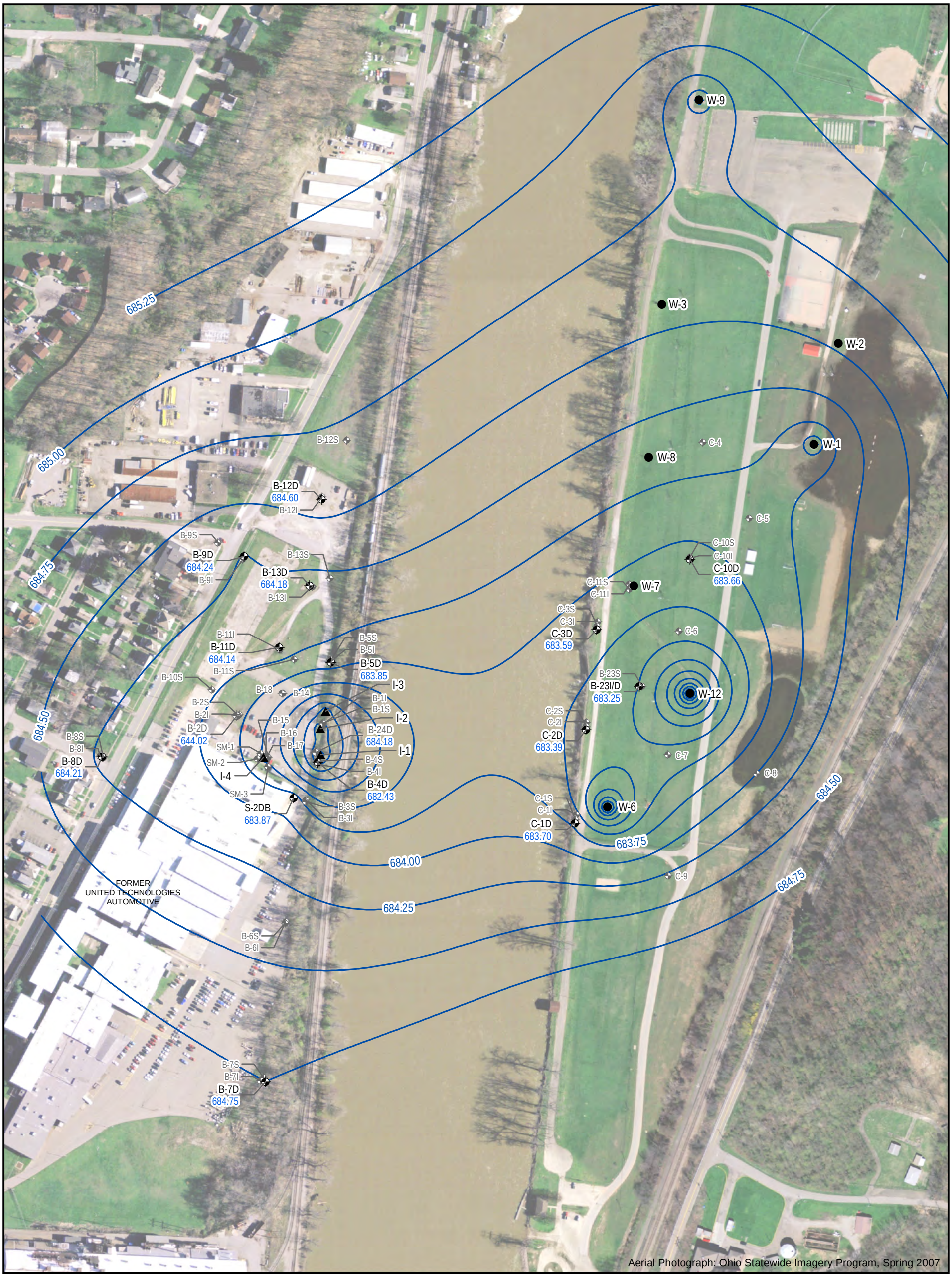
FOURTH QUARTER 2017
POTENTIOMETRIC SURFACE MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 16

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182603199	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_17_q4_2017_deep_gwe_zanesville_oh_20171206_11x17.mxd



Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY

NOTE:
1) DATA COLLECTED DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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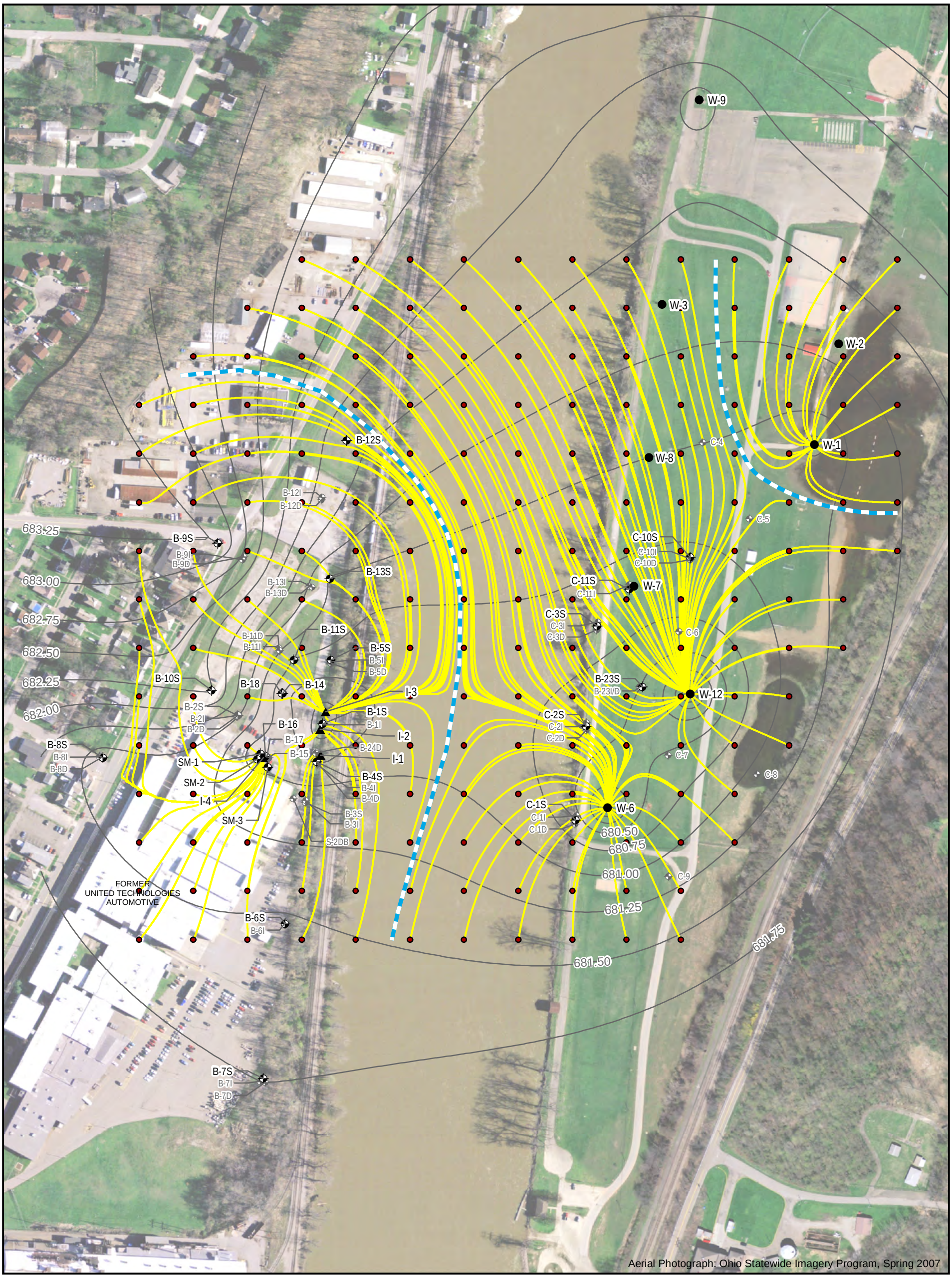
POTENTIOMETRIC SURFACE MAP
(DEEP MONITORING WELLS)

FIGURE: 17

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182603199	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_18_q3_2017_shlw_gw_grid_zanesville_oh_20170925_11x17.mxd



Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- PARTICLE TRACK
- PUMPING DIVIDE

NOTE:
1) DATA COLLECTED OCTOBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 ft

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THIRD QUARTER 2017
PARTICLE TRACKING MAP
(SHALLOW MONITORING WELLS)

FIGURE: 18

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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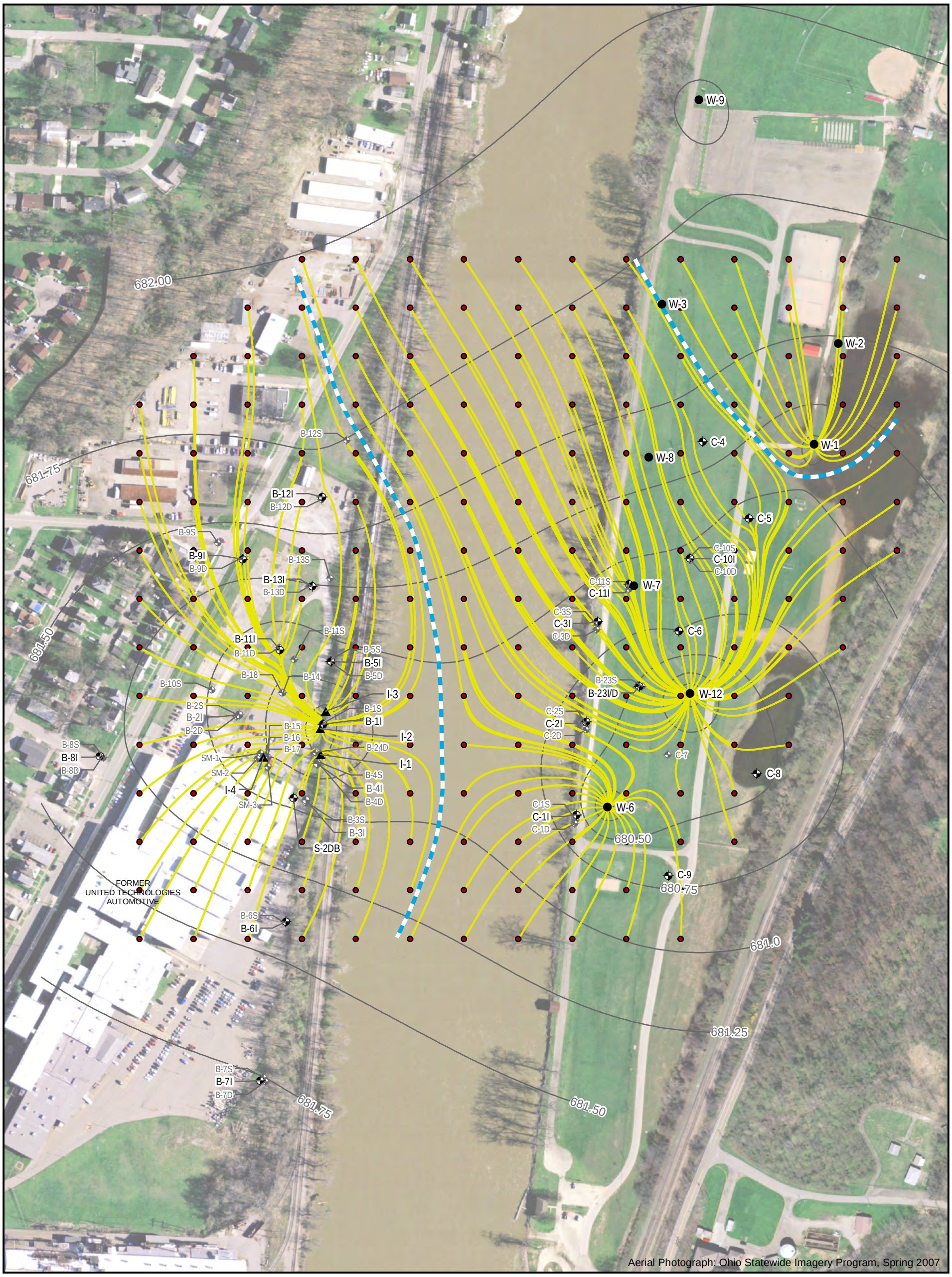

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- PARTICLE TRACK
- PUMPING DIVIDE

NOTE:
1) DATA COLLECTED OCTOBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 ft

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PARTICLE TRACKING MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 19

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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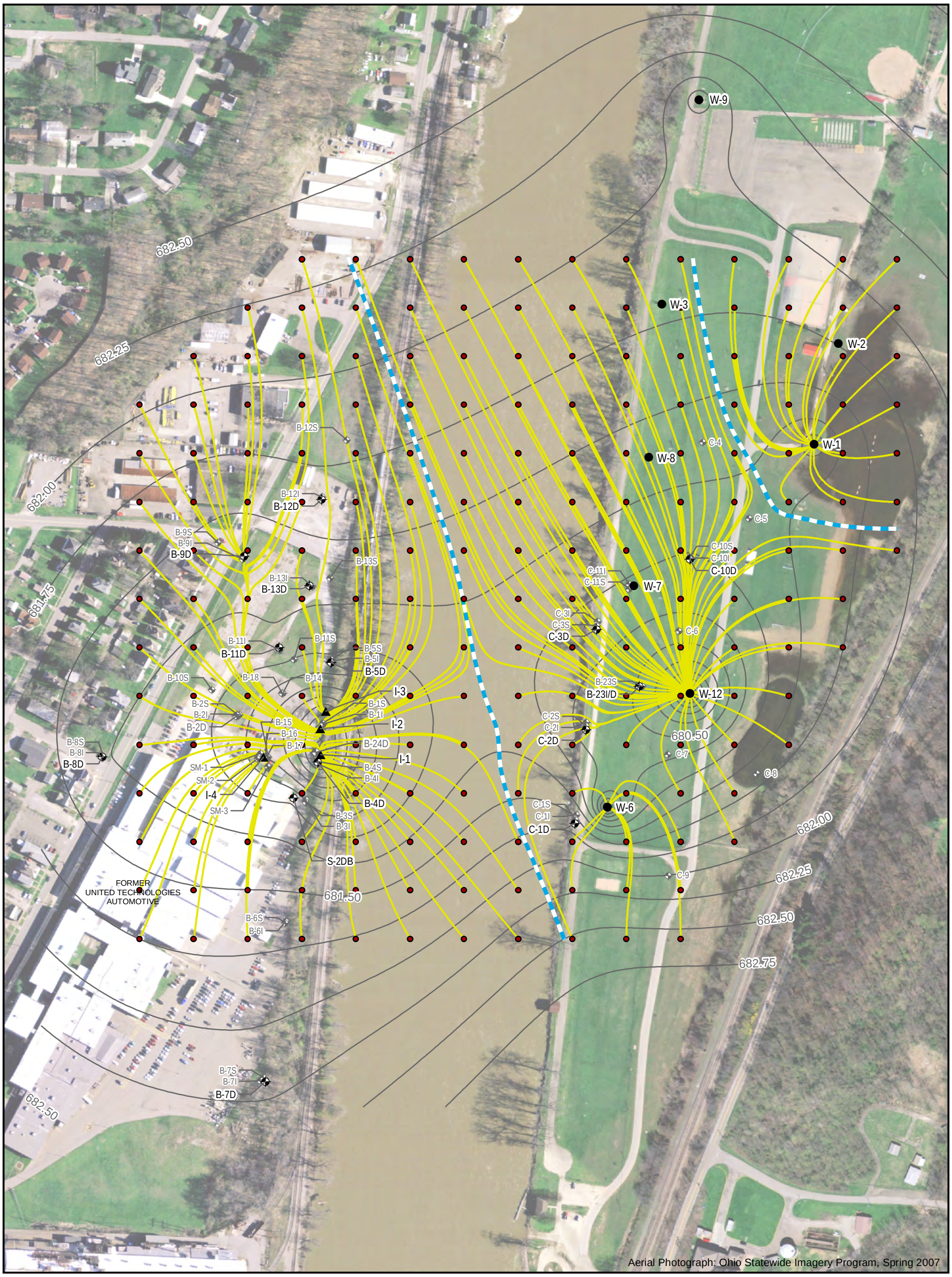

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- PARTICLE TRACK
- PUMPING DIVIDE

NOTE:
1) DATA COLLECTED OCTOBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 ft

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THIRD QUARTER 2017
PARTICLE TRACKING MAP
(DEEP MONITORING WELLS)

FIGURE: 20

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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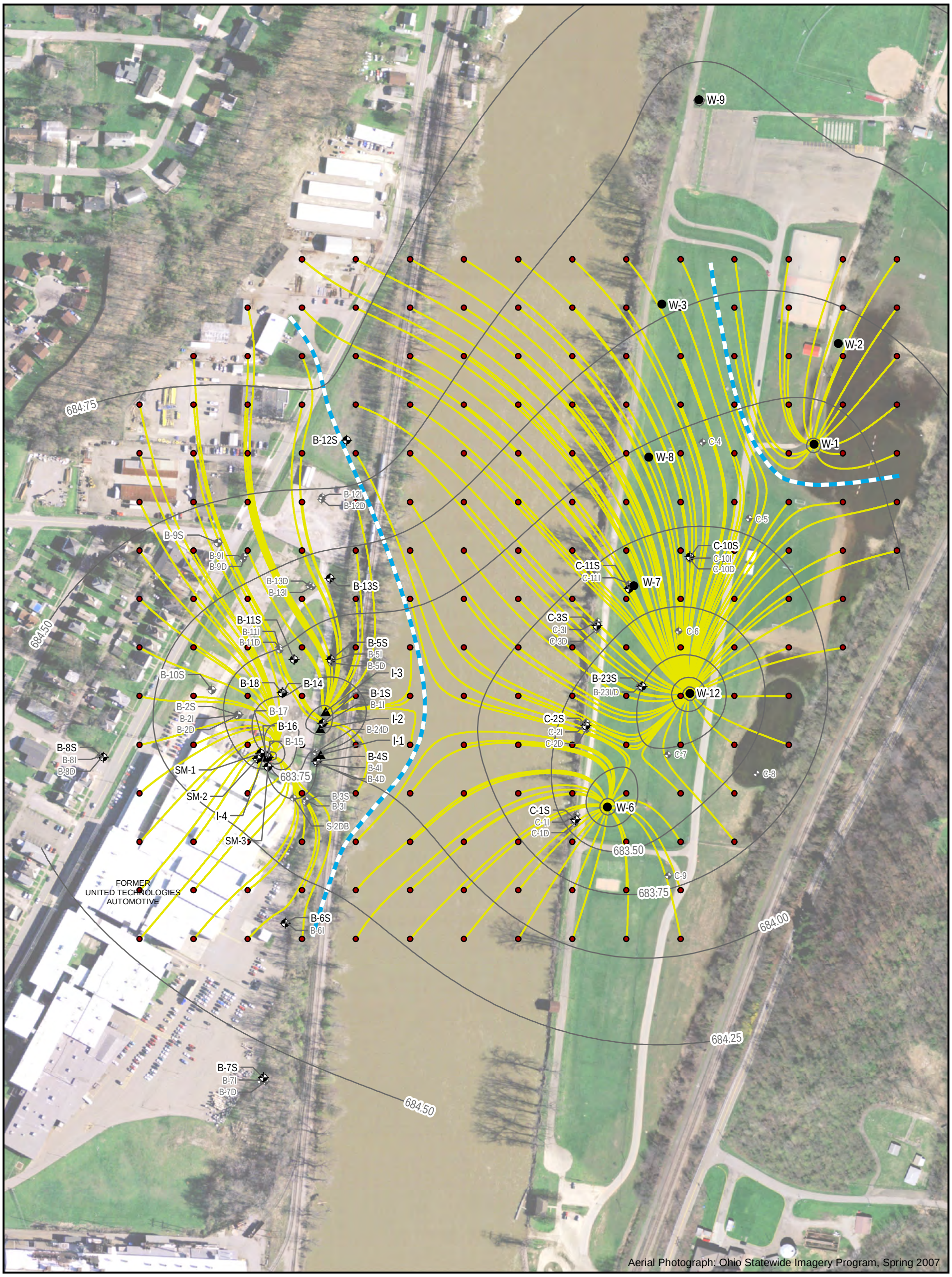

Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- PARTICLE TRACK
- PUMPING DIVIDE

NOTE:

1) DATA COLLECTED DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet

1 in = 250 feet
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FOURTH QUARTER 2017
PARTICLE TRACKING MAP
(SHALLOW MONITORING WELLS)

FIGURE: 21

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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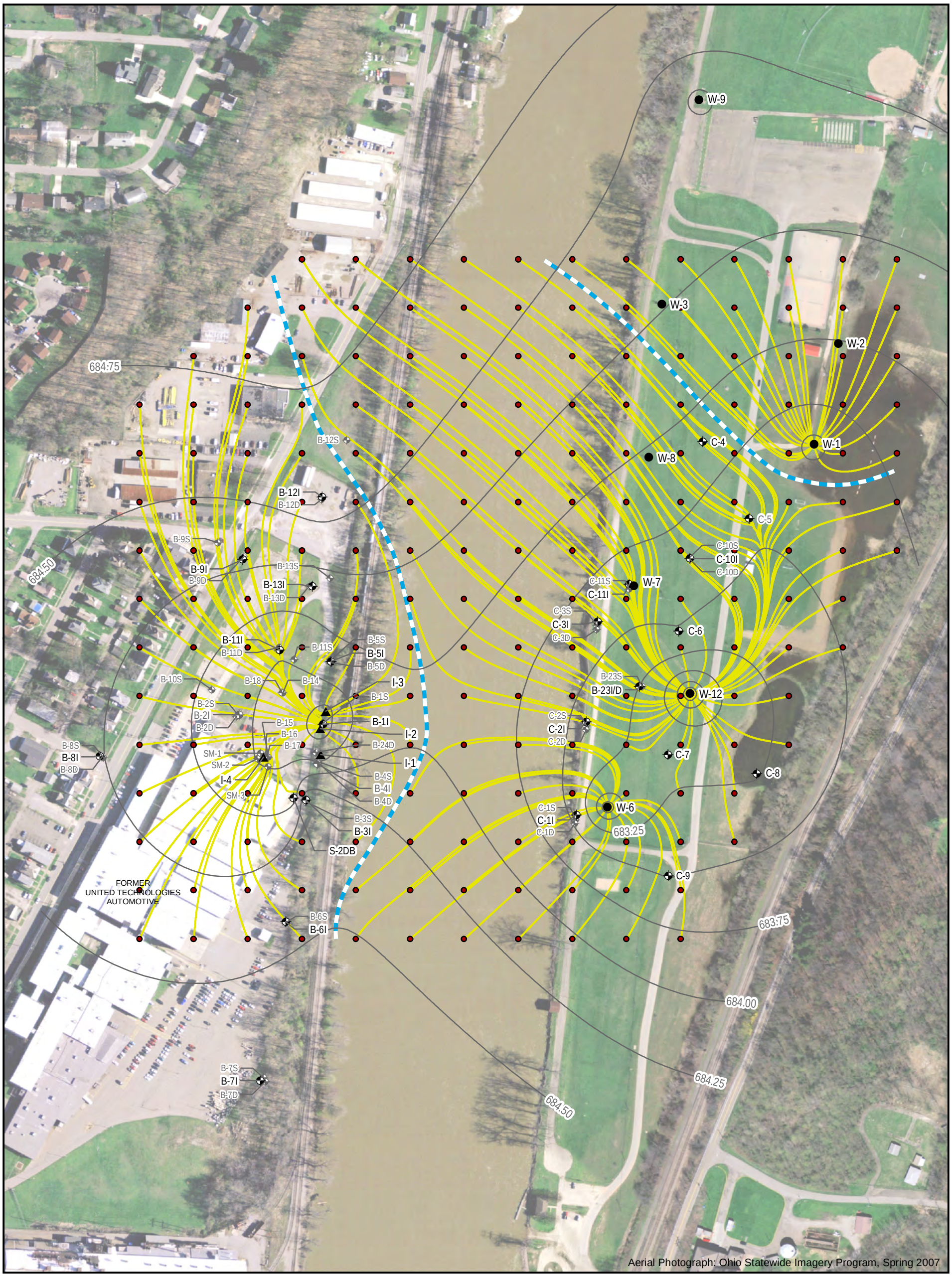

Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- PARTICLE TRACK
- PUMPING DIVIDE

NOTE:

1) DATA COLLECTED DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet

1 in = 250 feet
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FOURTH QUARTER 2017
PARTICLE TRACKING MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 22

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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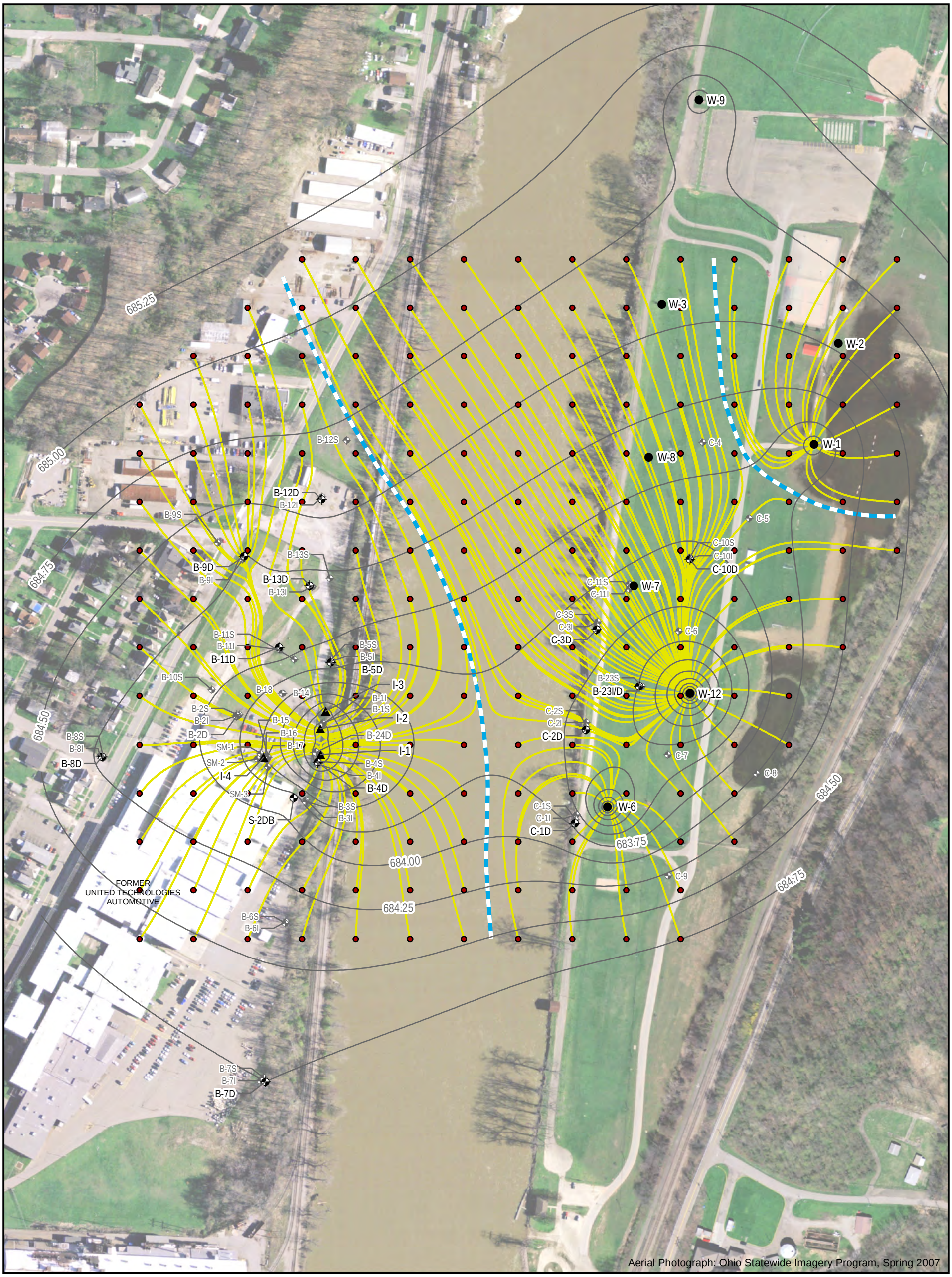

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- PARTICLE TRACK
- PUMPING DIVIDE

NOTE:

1) DATA COLLECTED DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet

1 in = 250 feet
(At original document size of 11x17)

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FOURTH QUARTER 2017
PARTICLE TRACKING MAP
(DEEP MONITORING WELLS)

FIGURE: 23

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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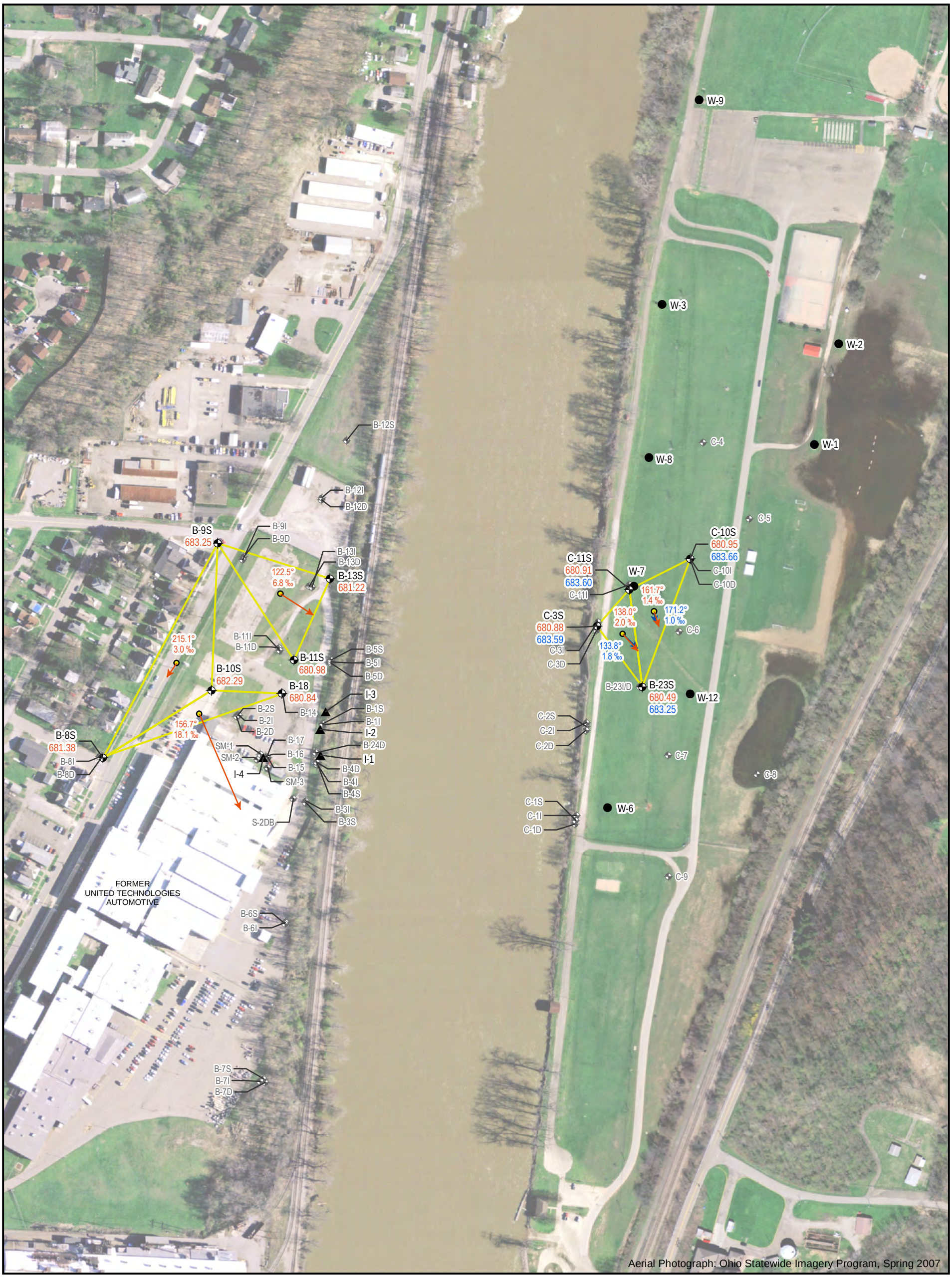

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- PROPERTY BOUNDARY
- OCTOBER 2017 ELEMENT TRACKING DIRECTION
- DECEMBER 2017 ELEMENT TRACKING DIRECTION
- 682.77 OCTOBER 2017 GROUNDWATER ELEVATION
- 682.77 DECEMBER 2017 GROUNDWATER ELEVATION

NOTE:

1) DATA COLLECTED 10/2017 & 12/2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL
3) NORTH IS 0º, EAST POSITIVE
4) TRACKING DIRECTION: 1/4" MINIMUM, 3" MAXIMUM
5) TRACKING DISTANCE IN FT/1000FT

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
TRIANGULAR ELEMENT MAP
(SHALLOW MONITORING WELLS)

FIGURE: 24

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- PROPERTY BOUNDARY
- OCTOBER 2017 ELEMENT TRACKING DIRECTION
- DECEMBER 2017 ELEMENT TRACKING DIRECTION
- 682.77 OCTOBER 2017 GROUNDWATER ELEVATION
- 682.77 DECEMBER 2017 GROUNDWATER ELEVATION

NOTE:

1) DATA COLLECTED 10/2017 & 12/2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL
3) NORTH IS 0º, EAST POSITIVE
4) TRACKING DIRECTION: 1/4" MINIMUM, 3" MAXIMUM
5) TRACKING DISTANCE IN FT/1000FT

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
TRIANGULAR ELEMENT MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 25

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	ZE	SH	JM	03/13/19

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Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- PROPERTY BOUNDARY
- OCTOBER 2017 ELEMENT TRACKING DIRECTION
- DECEMBER 2017 ELEMENT TRACKING DIRECTION
- 682.77 OCTOBER 2017 GROUNDWATER ELEVATION
- 682.77 DECEMBER 2017 GROUNDWATER ELEVATION

NOTE:

1) DATA COLLECTED 10/2017 & 12/2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL
3) NORTH IS 0º, EAST POSITIVE
4) TRACKING DIRECTION: 1/4" MINIMUM, 3" MAXIMUM
5) TRACKING DISTANCE IN FT/1000FT

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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SECOND HALF 2017
TRIANGULAR ELEMENT MAP
(DEEP MONITORING WELLS)

FIGURE: 26

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	ZE	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_27_shlw_q3_2017_gw_tz_zanesville_oh_20180531_11x17.mxd

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- SHALLOW TARGET ZONE
- PARTICLE TRACK

NOTE:
1) ANALYTICAL DATA COLLECTED OCTOBER & DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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THIRD QUARTER 2017
TARGET ZONE PARTICLE TRACKING MAP
(SHALLOW MONITORING WELLS)

FIGURE: 27

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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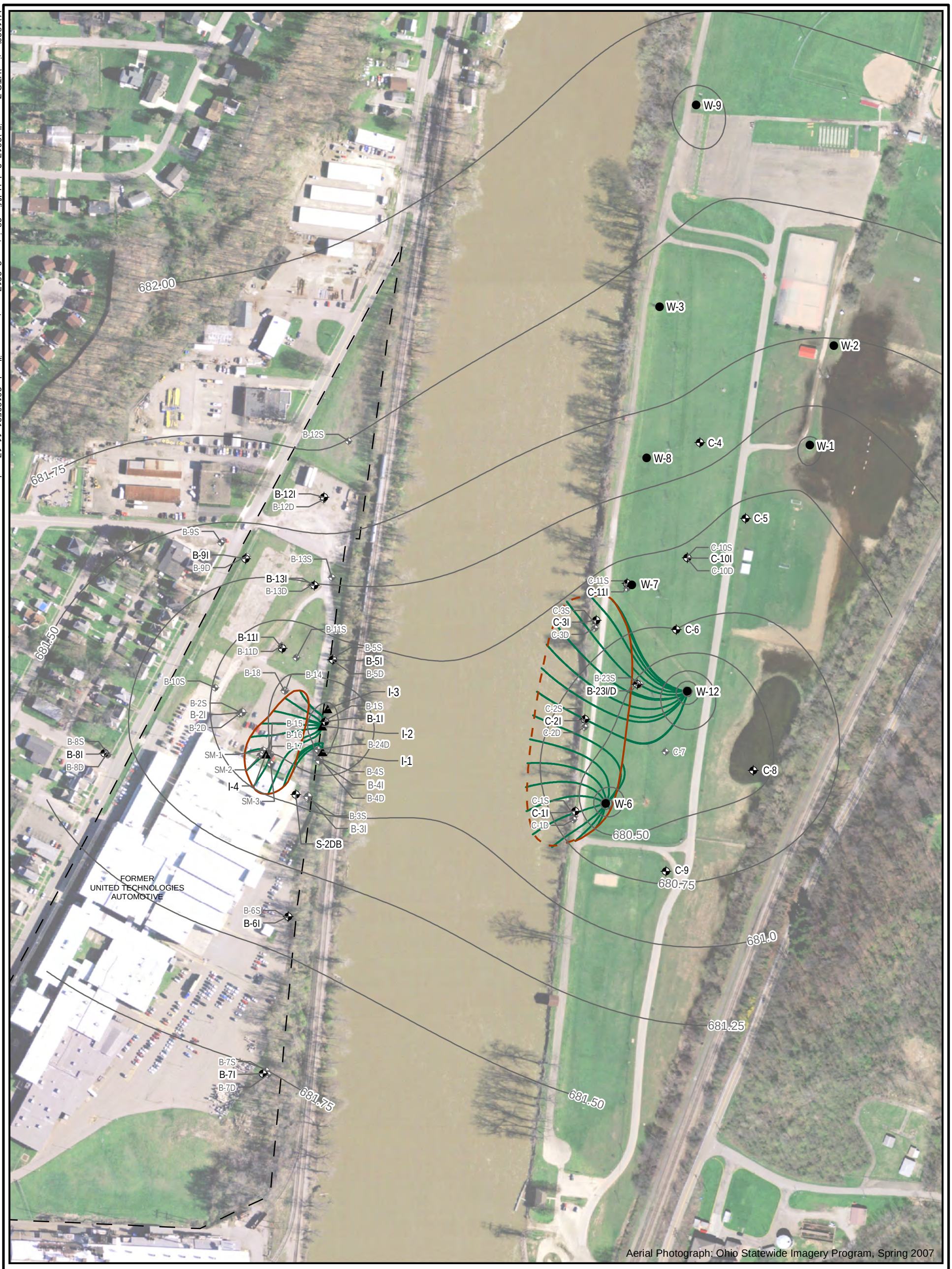

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- INTERMEDIATE TARGET ZONE
- PARTICLE TRACK

NOTE:
1) ANALYTICAL DATA COLLECTED OCTOBER & DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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THIRD QUARTER 2017
TARGET ZONE PARTICLE TRACKING MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 28

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- DEEP TARGET ZONE
- PARTICLE TRACK

NOTE:

1) ANALYTICAL DATA COLLECTED OCTOBER & DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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THIRD QUARTER 2017
TARGET ZONE PARTICLE TRACKING MAP
(DEEP MONITORING WELLS)

FIGURE: 29

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

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Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- SHALLOW TARGET ZONE
- PARTICLE TRACK

NOTE:
1) ANALYTICAL DATA COLLECTED OCTOBER & DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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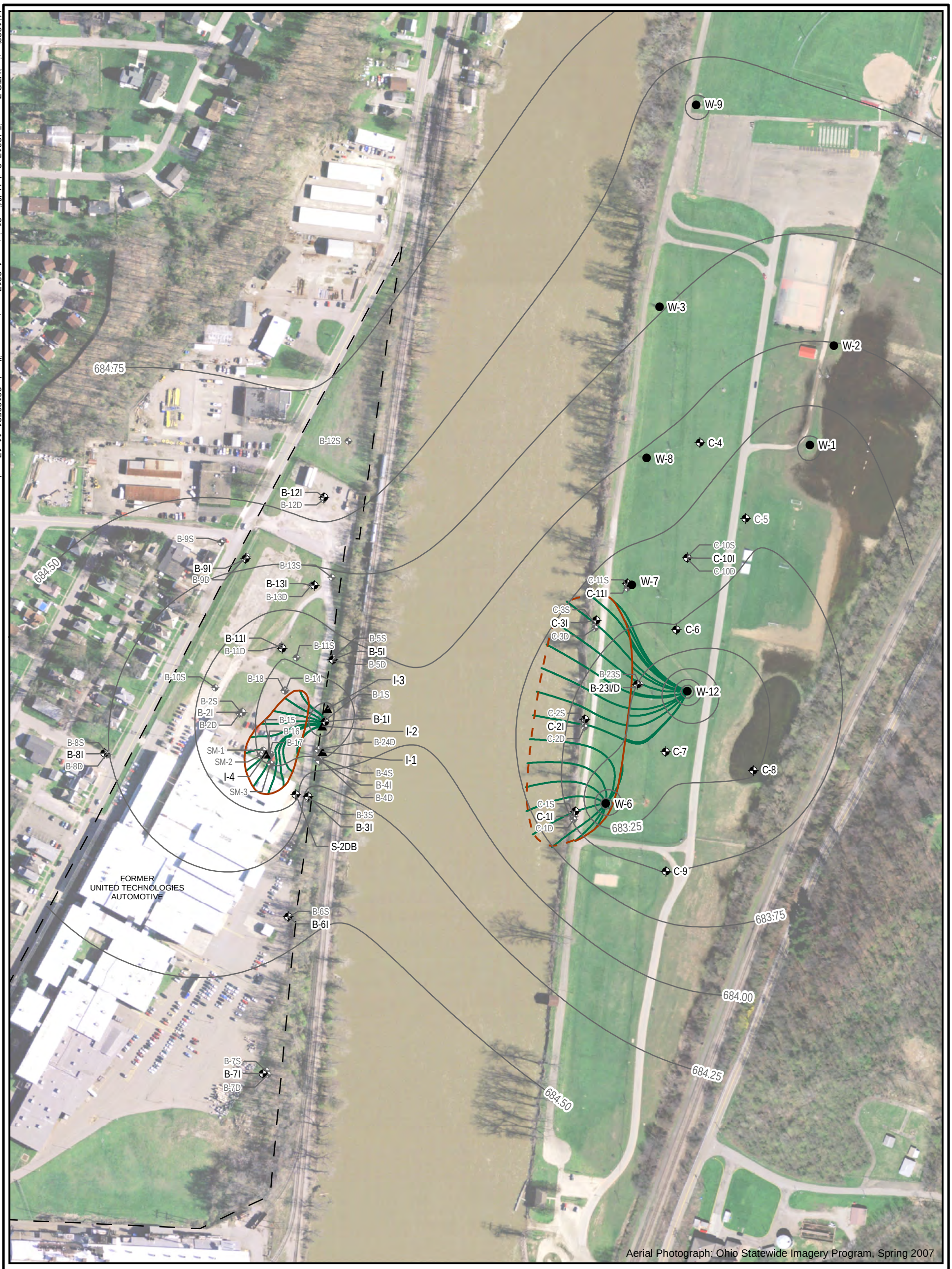
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

FOURTH QUARTER 2017
TARGET ZONE PARTICLE TRACKING MAP
(SHALLOW MONITORING WELLS)

FIGURE: 30

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_31_inter_q4_2017_gw_tz_zanesville_oh_20180531_11x17.mxd



LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- INTERMEDIATE TARGET ZONE
- PARTICLE TRACK

NOTE:

1) ANALYTICAL DATA COLLECTED OCTOBER & DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

Stantec
2335 HIGHWAY 36 WEST
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FOR:
UNITED TECHNOLOGIES CORPORATION
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

FOURTH QUARTER 2017
TARGET ZONE PARTICLE TRACKING MAP
(INTERMEDIATE MONITORING WELLS)

FIGURE: 31

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

V:\1826\active\UTC-Zanesville\2017_2nd_Half\fig_32_deep_q4_2017_gw_tz_zanesville_oh_20180531_11x17.mxd

Aerial Photograph: Ohio Statewide Imagery Program, Spring 2007

LEGEND:

- MONITORING WELL
- MONITORING WELL (NOT USED FOR CONTOURING)
- UTC INTERCEPTOR WELL
- MUNICIPAL PRODUCTION WELL
- GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- DEEP TARGET ZONE
- PARTICLE TRACK

NOTE:

1) ANALYTICAL DATA COLLECTED OCTOBER & DECEMBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 125 250 500
Feet
1 in = 250 feet
(At original document size of 11x17)

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FOR:
UNITED TECHNOLOGIES CORPORATION
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

FOURTH QUARTER 2017
TARGET ZONE PARTICLE TRACKING MAP
(DEEP MONITORING WELLS)

FIGURE: 32

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
182602727	AH	SH	JM	03/13/19

TABLES

TABLE 1
GROUNDWATER SAMPLING SCHEDULE - REVISED September 2016
ZANESVILLE, WELL FIELD SITE
ZANESVILLE, OHIO

WELL	ZONE	RATIONALE FOR SAMPLING WELL	TYPE OF MONITORING AND FREQUENCY						
			FLOW RATES	WATER LEVEL	VOC SAMPLING				VOC MONITORING SCHEDULE
					Q1	Q2	Q3	Q4	
B-1I	I	Detailed VOC distribution monitoring		x		x			Annually
B-1S	S	Water levels only for capture zone evaluation		x					--
B-2D	D	Delineation confirmation		x		x		x	Semi-Annually
B-2I	I	Concentration trend monitoring		x		x		x	Semi-Annually
B-2S	S	Delineation confirmation		x		x		x	Semi-Annually
B-3I	I	Detailed VOC distribution monitoring		x		x			Annually
B-3S	S	Detailed VOC distribution monitoring		x		x			Annually
B-4D	D	Concentration trend monitoring		x		x		x	Semi-Annually
B-4I	I	Concentration trend monitoring		x		x		x	Semi-Annually
B-4S	S	Delineation confirmation		x		x		x	Semi-Annually
B-5D	D	Delineation confirmation		x		x		x	Semi-Annually
B-5I	I	Concentration trend monitoring		x		x		x	Semi-Annually
B-5S	S	Water levels only for capture zone evaluation		x					--
B-6I	I	Delineation confirmation		x		x		x	Semi-Annually
B-6S	S	Delineation confirmation		x		x		x	Semi-Annually
B-7D	D	Water levels only for capture zone evaluation		x					--
B-7I	I	Water levels only for capture zone evaluation		x					--
B-7S	S	Water levels only for capture zone evaluation		x					--
B-8S	S	Concentration trend monitoring		x		x[1]		x[1]	Semi-Annually
B-8D	D	Delineation confirmation		x		x		x	Semi-Annually
B-8I	I	Delineation confirmation		x		x		x	Semi-Annually
B-9S	S	Concentration trend monitoring		x		x[1]		x[1]	Semi-Annually
B-9D	I	Detailed VOC distribution monitoring		x		x			Annually
B-9I	S	Water levels only for capture zone evaluation		x					--
B-10S	S	Detailed VOC distribution monitoring		x				x[1]	Annually
B-11S	S	Water levels only for capture zone evaluation		x					--
B-11D	D	Detailed VOC distribution monitoring		x		x			Annually
B-11I	I	Water levels only for capture zone evaluation		x					--
B-12S	S	Water levels only for capture zone evaluation		x					--
B-12D	D	Water levels only for capture zone evaluation		x					--
B-12I	I	Water levels only for capture zone evaluation		x					--

S Shallow zone well
I Intermediate zone well
D Deep zone well
VOC Volatile Organic Compound
-- Not applicable

TABLE 1
GROUNDWATER SAMPLING SCHEDULE - REVISED September 2016
ZANESVILLE, WELL FIELD SITE
ZANESVILLE, OHIO

WELL	ZONE	RATIONALE FOR SAMPLING WELL	TYPE OF MONITORING AND FREQUENCY						
			FLOW RATES	WATER LEVEL	VOC SAMPLING				VOC MONITORING SCHEDULE
					Q1	Q2	Q3	Q4	
B-13S	S	Water levels only for capture zone evaluation		x					--
B-13D	I/D	Delineation confirmation		x		x		x	Semi-Annually
B-13I	I	Water levels only for capture zone evaluation		x					--
B-14	S	Water levels only for capture zone evaluation		x					--
B-15	S	Source area concentration monitoring		x		x			Annually
B-16	S	Source area concentration monitoring		x		x		x	Semi-Annually
B-17	S	Source area concentration monitoring		x		x			Annually
B-18	S	Delineation confirmation		x		x		x	Semi-Annually
B-23I/D	I/D	Concentration trend monitoring		x		x		x	Semi-Annually
B-23S	S	Water levels only for capture zone evaluation		x					--
B-24D	D	Detailed VOC distribution monitoring		x		x			Annually
C-1S	S	Concentration trend monitoring		x		x		x	Semi-Annually
C-1D	D	Delineation confirmation		x		x		x	Semi-Annually
C-1I	I	Delineation confirmation		x		x		x	Semi-Annually
C-2S	S	Concentration trend monitoring		x		x		x	Semi-Annually
C-2I	I	Concentration trend monitoring		x		x		x	Semi-Annually
C-2D	D	Concentration trend monitoring		x		x		x	Semi-Annually
C-3S	S	Concentration trend monitoring		x		x		x	Semi-Annually
C-3D	D	Delineation confirmation		x		x		x	Semi-Annually
C-3I	I	Concentration trend monitoring		x		x		x	Semi-Annually
C-4	I	Water levels only for capture zone evaluation		x					--
C-5	I	Water levels only for capture zone evaluation		x					--
C-6	I	Delineation confirmation		x		x		x	Semi-Annually
C-7	I	Detailed VOC distribution monitoring		x		x			Annually
C-8	I	Delineation confirmation		x		x		x	Semi-Annually
C-9	I	Delineation confirmation		x		x		x	Semi-Annually
C-11I	I	Delineation confirmation		x		x		x	Semi-Annually
C-11S	S	Water levels only for capture zone evaluation		x					--
C-10D	D	Delineation confirmation		x		x		x	Semi-Annually
C-10S	S	Water levels only for capture zone evaluation		x					--
C-10I	I	Water levels only for capture zone evaluation		x					--

S Shallow zone well
I Intermediate zone well
D Deep zone well
VOC Volatile Organic Compound
-- Not applicable

TABLE 1
GROUNDWATER SAMPLING SCHEDULE - REVISED September 2016
ZANESVILLE, WELL FIELD SITE
ZANESVILLE, OHIO

WELL	ZONE	RATIONALE FOR SAMPLING WELL	TYPE OF MONITORING AND FREQUENCY						
			FLOW RATES	WATER LEVEL	VOC SAMPLING				VOC MONITORING SCHEDULE
					Q1	Q2	Q3	Q4	
I-1	D	Source area concentration monitoring			x	x	x	x	Monthly
I-2	D	Source area concentration monitoring			x	x	x	x	Monthly
I-3	D	Source area concentration monitoring			x	x	x	x	Monthly
I-4	I	Source area concentration monitoring			x	x	x	x	Monthly
S-2DB	I/D	Delineation confirmation		x		x		x	Semi-Annually
SM-1	S	Source area concentration monitoring		x		x		x	Semi-Annually
SM-2	S	Source area concentration monitoring		x		x		x	Semi-Annually
SM-3	S	Source area concentration monitoring		x		x			Annually
W-1	D	Containment confirmation	x	[2]		x			Annually
W-2	D	Water levels only for capture zone evaluation	x	[2]					--
W-3	D	Water levels only for capture zone evaluation	x	[2]					--
W-6	D	Delineation confirmation	x	[2]		x		x	Semi-Annually
W-7	D	Delineation confirmation	x	[2]		x		x	Semi-Annually
W-8	D	Containment confirmation	x	[2]		[2]			Annually
W-9	D	Flow rate monitoring only	x						Semi-Annually
W-10	D	Flow rate monitoring only	x						--
W-11	D	Flow rate monitoring only	x						--
W-12	D	Delineation confirmation	x	[2]		x		x	Semi-Annually
W-14	D	Flow rate monitoring only	x						--
W-15	D	Flow rate monitoring only	x						--
W-16	D	Flow rate monitoring only	x						--
W-17	D	Flow rate monitoring only	x						--
W-19	D	Flow rate monitoring only	x						--
W-20	D	Flow rate monitoring only	x						--

[1] - Added per EPA request following the 2011 5-year review

[2] - Eliminated due to access or operational restrictions

S Shallow zone well
I Intermediate zone well
D Deep zone well
VOC Volatile Organic Compound
-- Not applicable

TABLE 2
THIRD QUARTER 2017 GROUNDWATER ELEVATION MEASUREMENTS
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

October 4, 2017

LOCATION	TOP OF CASING ELEVATION (FEET AMSL)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)	WATER ELEVATION (FEET AMSL)
B-1S	721.90	41.33	67.19	680.57
B-1I	721.68	41.52	42.53	680.16
B-2S	722.79	43.25	46.41	679.54
B-2I	722.45	39.66	64.45	682.79
B-2D	722.36	79.07	84.95	643.29
B-3S	719.24	Dry	30.26	--
B-3I	719.28	37.53	47.75	681.75
B-4S	722.15	41.37	44.85	680.78
B-4I	722.46	58.35	63.00	664.11
B-4D	721.45	41.98	82.61	679.47
B-5S	722.48	41.58	44.42	680.90
B-5I	722.66	41.75	65.34	680.91
B-5D	722.34	41.41	84.14	680.93
B-6S	718.92	37.38	44.45	681.54
B-6I	718.49	37.08	65.00	681.41
B-7S	715.69	33.95	39.95	681.74
B-7I	715.90	34.14	60.65	681.76
B-7D	715.75	33.58	79.15	682.17
B-8S	719.08	37.70	44.32	681.38
B-8I	719.49	38.18	96.88	681.31
B-8D	719.91	38.65	68.70	681.26
B-9S	719.94	36.69	47.68	683.25
B-9I	723.53	42.19	55.80	681.34
B-9D	723.46	42.17	79.25	681.29
B-10S	720.15	37.86	45.10	682.29
B-11S	720.98	40.00	43.10	680.98
B-11I	720.75	39.95	56.86	680.80
B-11D	720.95	39.76	85.10	681.19
B-12S	724.00	42.16	49.70	681.84
B-12I	721.67	39.99	54.90	681.68
B-12D	721.54	39.88	78.58	681.66
B-13S	721.39	40.17	45.13	681.22

Notes:
Revised naming convention includes a suffix of S, I, or D to indicate a shallow, intermediate or deep screened interval.

TABLE 2
THIRD QUARTER 2017 GROUNDWATER ELEVATION MEASUREMENTS
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

October 4, 2017

LOCATION	TOP OF CASING ELEVATION (FEET AMSL)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)	WATER ELEVATION (FEET AMSL)
B-13I	720.59	39.35	56.30	681.24
B-13D	720.60	39.30	85.60	681.30
B-14	720.87	40.06	47.10	680.81
B-15	721.97	39.10	39.95	682.87
B-16	723.48	42.76	52.86	680.72
B-17	723.37	41.75	48.72	681.62
B-18	720.97	40.13	55.25	680.84
B-23S	698.43	17.94	29.65	680.49
B-23I/D	699.21	18.74	65.08	680.47
B-24D	721.44	39.28	118.85	682.16
C-1S	699.13	18.54	27.00	680.59
C-1I	699.27	18.68	48.97	680.59
C-1D	699.49	17.84	81.22	681.65
C-2S	699.81	19.21	27.67	680.60
C-2I	699.76	19.13	52.92	680.63
C-2D	699.66	19.04	67.52	680.62
C-3S	701.22	20.34	28.52	680.88
C-3I	701.75	20.88	52.69	680.87
C-3D	701.13	20.25	66.66	680.88
C-4	700.58	19.19	48.94	681.39
C-5	697.22	16.31	44.16	680.91
C-6	700.35	19.60	59.61	680.75
C-7	698.46	--	--	--
C-8	695.34	14.92	47.04	680.42
C-9	697.99	17.30	54.35	680.69
C-10S	700.80	19.85	28.18	680.95
C-10I	701.06	20.10	48.35	680.96
C-10D	700.66	19.69	68.37	680.97
C-11S	700.66	19.75	28.35	680.91
C-11I	700.80	19.91	43.24	680.89
S-2DB	722.20	41.25	86.32	680.95
SM-1	720.65	39.86	47.40	680.79

Notes:
Revised naming convention includes a suffix of S, I, or D to indicate a shallow, intermediate or deep screened interval.

TABLE 2
THIRD QUARTER 2017 GROUNDWATER ELEVATION MEASUREMENTS
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

October 4, 2017

LOCATION	**TOP OF CASING ELEVATION** (FEET AMSL)	**DEPTH TO WATER** (FEET)	**DEPTH TO BOTTOM** (FEET)	**WATER ELEVATION** (FEET AMSL)
SM-2	720.46	39.66	45.75	680.80
SM-3	720.52	39.55	46.80	680.97

Notes:
Revised naming convention includes a suffix of S, I, or D to indicate a shallow, intermediate or deep screened interval.

TABLE 3
FOURTH QUARTER 2017 GROUNDWATER ELEVATION MEASUREMENTS
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

December 4, 2017

LOCATION	TOP OF CASING ELEVATION (FEET AMSL)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)	WATER ELEVATION (FEET AMSL)
B-1S	721.90	38.53	42.40	683.37
B-1I	721.68	38.33	66.21	683.35
B-2S	722.79	42.98	46.39	679.81
B-2I	722.45	40.45	60.46	682.00
B-2D	722.36	78.34	84.87	644.02
B-3S	719.24	DRY	30.20	-----
B-3I	719.28	34.83	47.91	684.45
B-4S	722.15	38.15	44.81	684.00
B-4I	722.46	57.55	62.93	664.91
B-4D	721.45	39.02	83.31	682.43
B-5S	722.48	38.65	44.24	683.83
B-5I	722.66	38.76	65.11	683.90
B-5D	722.34	38.49	84.10	683.85
B-6S	718.92	34.63	43.21	684.29
B-6I	718.49	34.05	64.90	684.44
B-7S	715.69	31.14	41.15	684.55
B-7I	715.90	31.24	60.50	684.66
B-7D	715.75	31.00	77.02	684.75
B-8S	719.08	34.76	44.06	684.32
B-8I	719.49	35.23	46.83	684.26
B-8D	719.91	35.70	62.21	684.21
B-9S	719.94	36.38	47.51	683.56
B-9I	723.53	39.23	55.65	684.30
B-9D	723.46	39.22	79.23	684.24
B-10S	720.15	37.22	45.01	682.93
B-11S	720.98	37.04	42.87	683.94
B-11I	720.75	36.98	56.65	683.77
B-11D	720.95	36.81	85.04	684.14
B-12S	724.00	39.31	49.43	684.69
B-12I	721.67	37.04	55.94	684.63
B-12D	721.54	36.94	78.77	684.60
B-13S	721.39	37.26	45.03	684.13
B-13I	720.59	36.45	56.16	684.14

Notes:
Revised naming convention includes a suffix of S, I, or D to indicate a shallow, intermediate or deep screened interval.

TABLE 3
FOURTH QUARTER 2017 GROUNDWATER ELEVATION MEASUREMENTS
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

December 4, 2017

LOCATION	TOP OF CASING ELEVATION (FEET AMSL)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)	WATER ELEVATION (FEET AMSL)
B-13D	720.60	36.42	69.44	684.18
B-14	720.87	37.08	46.96	683.79
B-15	721.97	39.45	--	682.52
B-16	723.48	39.74	52.72	683.74
B-17	723.37	40.15	48.61	683.22
B-18	720.97	37.19	55.03	683.78
B-23S	698.43	15.18	29.53	683.25
B-23I/D	699.21	15.96	64.37	683.25
B-24D	721.44	37.26	116.49	684.18
C-1S	699.13	15.72	26.83	683.41
C-1I	699.27	15.84	50.97	683.43
C-1D	699.49	15.79	80.71	683.70
C-2S	699.81	16.42	27.52	683.39
C-2I	699.76	16.36	52.80	683.40
C-2D	699.66	16.27	67.49	683.39
C-3S	701.22	17.63	28.43	683.59
C-3I	701.75	18.14	52.61	683.61
C-3D	701.13	17.54	59.66	683.59
C-4	700.58	16.67	47.53	683.91
C-5	697.22	13.70	43.42	683.52
C-6	700.35	16.87	58.89	683.48
C-7	698.46	15.25	42.01	683.21
C-8	695.34	12.11	46.32	683.23
C-9	697.99	14.50	53.13	683.49
C-10S	700.80	17.14	28.01	683.66
C-10I	701.06	17.40	48.22	683.66
C-10D	700.66	17.00	68.27	683.66
C-11S	700.66	17.06	27.34	683.60
C-11I	700.80	17.19	44.58	683.61
S-2DB	722.20	38.33	--	683.87
SM-1	720.65	36.82	47.30	683.83
SM-2	720.46	36.65	45.61	683.81

Notes:
Revised naming convention includes a suffix of S, I, or D to indicate a shallow, intermediate or deep screened interval.

TABLE 3
FOURTH QUARTER 2017 GROUNDWATER ELEVATION MEASUREMENTS
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

December 4, 2017

LOCATION	**TOP OF CASING ELEVATION** (FEET AMSL)	**DEPTH TO WATER** (FEET)	**DEPTH TO BOTTOM** (FEET)	**WATER ELEVATION** (FEET AMSL)
SM-3	720.52	36.56	46.66	683.96

Notes:
Revised naming convention includes a suffix of S, I, or D to indicate a shallow, intermediate or deep screened interval.

TABLE 4
SECOND HALF 2017 SUMMARY OF WELL PERFORMANCE
ZANESVILLE WELLFIELD SITE
Zanesville, Ohio Well Field Site

	INTERCEPTOR WELLS															
MONTH	I-1				I-2				I-3				I-4			
	AVERAGE PUMPING RATE (gpm)	VOLUME PUMPED (million gallons)	APPROXIMATE OPERATIONAL TIME (%)	WELL PERFORMANCE & OPERATION NOTES	AVERAGE PUMPING RATE (gpm)	VOLUME PUMPED (million gallons)	APPROXIMATE OPERATIONAL TIME (%)	WELL PERFORMANCE & OPERATION NOTES	AVERAGE PUMPING RATE (gpm)	VOLUME PUMPED (million gallons)	APPROXIMATE OPERATIONAL TIME (%)	WELL PERFORMANCE & OPERATION NOTES	AVERAGE PUMPING RATE (gpm)	VOLUME PUMPED (million gallons)	APPROXIMATE OPERATIONAL TIME (%)	WELL PERFORMANCE & OPERATION NOTES
JULY	94	4.20	75%	Well cleaned and pump serviced during first few weeks of month.	8	0.35	10%	Well was down for routine cleaning and maintenance.	105	4.68	100%		60	2.67	100%	
AUGUST	130	5.79	100%		95	4.22	100%		92	4.10	100%		60	2.66	100%	
SEPTEMBER	132	5.71	100%		106	4.59	100%		98	4.25	100%		58	2.49	100%	
OCTOBER	141	6.31	100%		131	5.84	100%		108	4.84	100%		53	2.38	100%	
NOVEMBER	102	4.41	100%		99	4.29	100%		81	3.48	100%		33	1.43	100%	
DECEMBER	119	5.31	100%		125	5.59	100%		100	4.46	100%		32	1.45	100%	

	CITY OF ZANESVILLE - CONTAINMENT WELLS							
MONTH	W-6				W-12			
	AVERAGE PUMPING RATE (gpm)	VOLUME PUMPED (million gallons)	APPROXIMATE OPERATIONAL TIME (%)	WELL PERFORMANCE & OPERATION NOTES	AVERAGE PUMPING RATE (gpm)	VOLUME PUMPED (million gallons)	APPROXIMATE OPERATIONAL TIME (%)	WELL PERFORMANCE & OPERATION NOTES
JULY	337	15.03	100%		257	11.48	75%	Well was down because of a severe weather event
AUGUST	394	17.60	100%		352	15.71	100%	
SEPTEMBER	328	14.64	100%		372	16.61	100%	
OCTOBER	399	17.83	75%		447	19.95	100%	
NOVEMBER	311	13.88	99%		367	16.4	100%	
DECEMBER	112	5.00	50%	Well pump maintenance	393	17.56	100%	

gpm - gallons per minute

TABLE 5
CITY OF ZANESVILLE WELL FIELD EXTRACTION USAGE
ZANESVILLE, WELL FIELD SITE
ZANESVILLE, OHIO

SECOND HALF 2017

Well ID	Hours		Percent of Total Usage		Estimated Average cfd	
	Sep-17 30 Days	Dec-17 31 Days	Sep-17 30 Days	Dec-17 31 Days	Sep-17 30 Days	Dec-17 31 Days
W-1	426.2	552	9.6%	12.7%	22,791	28,566
W-2	204.3	0	4.6%	0.0%	10,925	0
W-3	0	0	0.0%	0.0%	0	0
W-7	0	1.2	0.0%	0.0%	0	62
W-9	481.6	551.5	10.8%	12.7%	25,754	28,541
W-10	556.5	489.1	12.5%	11.3%	29,759	25,311
W-11	555.2	518.4	12.5%	11.9%	29,690	26,828
W-14	480	537.4	10.8%	12.4%	25,668	27,811
W-15	74.4	520.2	1.7%	12.0%	3,979	26,921
W-16	554.3	449.7	12.5%	10.4%	29,642	23,272
W-17	480.0	276.4	10.8%	6.4%	25,668	14,304
W-18	554.4	150.3	12.5%	3.5%	29,647	7,778
W-20	84.4	293.1	1.9%	6.8%	4,513	15,168
Total hrs:	4451.3	4339.3				

NOTES:
gpm = gallons per minute
cfd = cubic feet per day
hrs = hours
gal = gallons

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-1I	12/6/1995	*	140			14
B-1I	3/19/1997	*	<5			63
B-1I	6/12/1997	*	50			14
B-1I	9/4/1997	*	84			23
B-1I	11/19/1997	*	160			19
B-1I	3/17/1998	*				
B-1I	6/23/1998	*	<1		<5	<1
B-1I	9/10/1998	*C	28		<6.2	44
B-1I	12/16/1998	*	79			<5
B-1I	3/23/1999	*	60			40
B-1I	6/23/1999	*	38			<5
B-1I	9/14/1999	*	120			14
B-1I	12/1/1999	*	200			24
B-1I	3/7/2000	*	33			2.6
B-1I	9/13/2000	*	31			10
B-1I	12/6/2000	*	250			17
B-1I	3/13/2001	*	140			19
B-1I	6/5/2001	*	75			<10
B-1I	9/11/2001	*	16		<5	42
B-1I	11/28/2001	*	110			<5
B-1I	6/4/2002	*	29			1.3
B-1I	9/5/2002	*	28			2.6
B-1I	12/5/2002	*	21	<1	<1	<1
B-1I	3/5/2003	*	36	1.3	<1	<2
B-1I	6/3/2003	*	22	1.3	<1	<2
B-1I	9/9/2003	*	53	3.2	<1	3.2
B-1I	9/9/2003	*	56	3.2	<1	3.2
B-1I	12/11/2003	*	110	180	<5	180
B-1I	3/2/2004	*	280	140	<10	140
B-1I	6/9/2004	*	37	9.2	<1	9.2
B-1I	9/1/2004	*	34	12	<0.63	12
B-1I	12/3/2004	*	22	19	<3.2	19
B-1I	3/4/2005	*	18.7	2.7	<1	2.7
B-1I	6/14/2005	*	20	1.6	<1	1.6
B-1I	9/2/2005	*	30.6	1.8	<0.28	1.8
B-1I	12/7/2005	*	20.7	1.7	<0.28	1.7
B-1I	3/7/2006	*	11	0.87 J	<0.38	0.87 J
B-1I	6/6/2006	*	12.8	<1	<1	<1
B-1I	9/6/2006	*	23.6	1.4	<1	1.4
B-1I	12/5/2006	*	22.1	<1	<1	<1
B-1I	6/5/2007	*	10.6			<1 U
B-1I	6/24/2008	*	9.5	<1 U	<1 U	<1 U
B-1I	6/2/2009	*	6.6	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-1I	6/3/2009	*	7	<1 U	<1 U	<1 U
B-1I	6/9/2010	*	4.9	0.58 J	<1 U	0.58 J
B-1I	6/16/2011	*	5.9	0.76 J	<1 U	0.76 J
B-1I	6/22/2012	*	4.2	0.25 J	<1 U	0.25 J
B-1I	6/25/2013	*	3.5	0.45 NJ	<1 U	0.45 J
B-1I	6/18/2014	*C	3.5	0.37 NJ	<1 U	0.37 NJ
B-1I	7/1/2015	*C	2.1	0.31 NJ	<1 U	0.31 NJ
B-1I	6/22/2016	*	3.0	<1 U	<1 U	<1 U
B-1I	5/31/2017		4.1	<1 U	<1 U	<1 U
B-1S	6/5/2007	*	<1 U			<1 U
B-2D	6/23/1998	*	<1			<1
B-2D	12/15/1998	*C	<1		<0.5	<1
B-2D	6/22/1999	*	<1U			<1U
B-2D	12/1/1999	*	<1U			<1U
B-2D	12/5/2000	*	<1U			<1U
B-2D	6/5/2001	*	<1			<1
B-2D	6/4/2002	*	<1			<1
B-2D	6/3/2003	*	1.3	<1	<1	<2
B-2D	12/11/2003	*	<1	<1	<1	<2
B-2D	6/8/2004	*	1.3	<1	<1	<2
B-2D	12/2/2004	*	1.1	<0.34	<0.63	<0.68
B-2D	6/14/2005	*	<1	<1	<1	<1
B-2D	12/6/2005	*	1.3	<0.17	<0.28	<0.17
B-2D	6/6/2006	*	1.1	<1	<1	<1
B-2D	12/5/2006	*	1.2	<1	<1	<1
B-2D	3/13/2007	*	1.9			<1 U
B-2D	6/5/2007	*	1.7			<1 U
B-2D	9/13/2007	*	<1 U	<1 U	<1 U	
B-2D	12/5/2007	*	<1 U	<1 U	<1 U	<1 U
B-2D	3/5/2008	*	1.3	<1 U	<1 U	<1 U
B-2D	6/24/2008	*	1.1	<1 U	<1 U	<1 U
B-2D	9/3/2008	*	<1 U	<1 U	<1 U	<1 U
B-2D	12/22/2008	*	1.3	<1 U	<1 U	<1 U
B-2D	3/4/2009	*	<1 U	<1 U	<1 U	<1 U
B-2D	9/11/2009	*	<1 U	<1 U	<1 U	<1 U
B-2D	12/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-2D	6/2/2010	*	<1 U	<1 U	<1 U	<1 U
B-2D	9/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-2D	12/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-2D	3/30/2011	*	<1 U	<1 U	<1 U	<1 U
B-2D	9/16/2011	*	<10 U	<10 U	<10 U	<10 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-2D	3/22/2012	*	<1 U	<1 U	<1 U	<1 U
B-2D	6/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-2D	6/25/2014	*	<1 U	<1 U	<1 U	<1 U
B-2D	3/19/2015	*C	12 UJ	12 UJ	14 UJ	12 UJ
B-2D	7/2/2015	*	<1 U	<1 U	<1 U	<1 U
B-2D	9/23/2015	*	<1 U	<1 U	<1 U	<1 U
B-2D	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
B-2D	3/16/2016	*	<1 U	<1 U	<1 U	<1 U
B-2D	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-2D	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-2I	9/11/1996	*	<1		<1	<1
B-2I	10/30/1996	*	<1			<1
B-2I	11/19/1997	*	<1			<1
B-2I	3/13/2007	*	<1 U			<1 U
B-2I	6/6/2007	*	<2 U	<2 U	<2 U	<2 U
B-2I	9/13/2007	*	<1 U	<1 U	<1 U	
B-2I	12/5/2007	*C	<1 U	<1 U	<1 U	<1 U
B-2I	3/5/2008	*C	<1 U	<1 U	<1 U	<1 U
B-2I	12/22/2008	*	<1 U	<1 U	<1 U	<1 U
B-2I	3/4/2009	*C	<1 U	<1 U	<1 U	<1 U
B-2I	6/2/2009	*	<1 U	<1 U	<1 U	<1 U
B-2I	12/2/2009	*	<1 U	<1 U	<1 U	<1 U
B-2I	3/11/2010	*	<1 U	<1 U	<1 U	<1 U
B-2I	6/2/2010	*	<1 U	<1 U	<1 U	<1 U
B-2I	12/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-2I	6/17/2011	*	<1 U	<1 U	<1 U	<1 U
B-2I	12/14/2011	*	<1 U	<1 U	<1 U	<1 U
B-2I	6/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-2I	12/6/2012	*	<1 U	<1 U	<1 U	<1 U
B-2I	6/27/2013	*	<1 U	<1 U	<1 U	<1 U
B-2I	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
B-2I	6/18/2014	*	<1 U	<1 U	<1 U	<1 U
B-2I	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-2I	7/2/2015	*	<1 U	<1 U	<1 U	<1 U
B-2I	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
B-2I	6/24/2016	*	<1 U	<1 U	<1 U	<1 U
B-2I	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-2I	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-2I	12/5/2017	*	<1 U	<1 U	<1 U	<1 U
B-2S	12/5/1995	*	3.7			<1
B-2S	9/11/1996	*	1.9		<1	<1

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-2S	10/30/1996	*	2		<1	<1
B-2S	6/11/1997	*	3.7			<1
B-2S	9/3/1997	*	<1			<1
B-2S	11/18/1997	*	<1			<1
B-2S	6/23/1998	*	<1			<1
B-2S	9/10/1998	*	<1			<1
B-2S	12/15/1998	*	<1			<1
B-2S	12/15/1998	*C	<1			<1
B-2S	3/23/1999	*	<1			<1
B-2S	6/22/1999	*	<1U			<1U
B-2S	9/14/1999	*	<1U			<1U
B-2S	12/1/1999	*	<1U			<1U
B-2S	3/7/2000	*	<1U			<1U
B-2S	9/13/2000	*	<1U			<1U
B-2S	12/5/2000	*	<1U			<1U
B-2S	3/13/2001	*	<1U			<1U
B-2S	6/5/2001	*	<1			<1
B-2S	9/11/2001	*	<1			<1
B-2S	11/28/2001	*	<1			<1
B-2S	6/4/2002	*	<1			<1
B-2S	9/5/2002	*C	<1			<1
B-2S	12/5/2002	*C	<1	<0.5	<0.5	<1
B-2S	3/5/2003	*	<1	<1	<1	<2
B-2S	6/3/2003	*	<1	<1	<1	<2
B-2S	9/9/2003	*	<1	<1	<1	<2
B-2S	12/11/2003	*	<1	<1	<1	<2
B-2S	3/2/2004	*	<1	<1	<1	<2
B-2S	6/8/2004	*	<1	<1	<1	<2
B-2S	9/1/2004	*	<0.37	<0.34	<0.63	<0.68
B-2S	12/2/2004	*	<0.37	<0.34	<0.63	<0.68
B-2S	3/3/2005	*	<1	<1	<1	<1
B-2S	6/14/2005	*	1.1	<1	<1	<1
B-2S	9/2/2005	*	2.3	<0.17	<0.28	<0.17
B-2S	12/6/2005	*	0.82 J	<0.17	<0.28	<0.17
B-2S	3/7/2006	*	31.4	4.3	<0.38	4.3
B-2S	6/6/2006	*	<1	<1	<1	<1
B-2S	9/6/2006	*	<1	<1	<1	<1
B-2S	12/5/2006	*	<1		<1	<1
B-2S	6/5/2007	*	<1 U			<1 U
B-2S	12/5/2007	*C	<1 U	<1 U	<1 U	<1 U
B-2S	6/24/2008	*	<1 U	<1 U	<1 U	<1 U
B-2S	12/22/2008	*	<1 U	<1 U	<1 U	<1 U
B-2S	6/3/2009	*C	<1 U	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-2S	9/11/2009	*	<1 J	<1 U	<1 U	<1 U
B-2S	12/1/2009	*	<1 U	<1 U	<1 U	<1 U
B-2S	6/2/2010	*	<1 U	<1 U	<1 U	<1 U
B-2S	9/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-2S	12/9/2010	*	0.48 J	<1 U	<1 U	<1 U
B-2S	3/30/2011	*	1.4	<1 U	<1 U	<1 U
B-2S	6/17/2011	*	0.87 J	<1 U	<1 U	<1 U
B-2S	9/16/2011	*	0.42 J	<1 U	<1 U	<1 U
B-2S	12/14/2011	*	1.1	<1 U	<1 U	<1 U
B-2S	3/22/2012	*	1.3	<1 U	<1 U	<1 U
B-2S	6/21/2012	*	0.83 J	<1 U	<1 U	<1 U
B-2S	9/12/2012	*C	0.46 NJ	<1 U	<1 U	<1 U
B-2S	12/6/2012	*	0.39 J	<1 U	<1 U	<1 U
B-2S	3/13/2013	*C	0.62 NJ	<1 U	<1 U	<1 U
B-2S	6/27/2013	*C	0.69 NJ	<1 U	<1 U	<1 U
B-2S	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
B-2S	3/27/2014	*	<1 U	<1 U	<1 U	<1 U
B-2S	6/19/2014	*C	<0.87 NJ	<1 U	<1 U	<1 U
B-2S	9/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-2S	12/9/2014	*	<1 U	<1 U	<1 U	<1 U
B-2S	3/19/2015	*C	0.69 NJ	<1 U	<1 U	<1 U
B-2S	7/1/2015	*C	0.67 NJ	<1 U	<1 U	<1 U
B-2S	9/23/2015	*C	0.67 NJ	<1 U	<1 U	<1 U
B-2S	12/16/2015	*C	0.33 NJ	<1 U	<1 U	<1 U
B-2S	6/24/2016	*C	0.43 NJ	<1 U	<1 U	<1 U
B-2S	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-2S	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-3I	9/19/1996	*	33		<1	6.2
B-3I	6/11/1997	*	120			13
B-3I	11/18/1997	*	24			19
B-3I	6/23/1998	*	51			14
B-3I	12/15/1998	*C	28			8
B-3I	6/23/1999	*	39			4.4
B-3I	12/1/1999	*	21		<1U	1.2
B-3I	12/5/2000	*	14			<1U
B-3I	6/5/2001	*	28			1.2
B-3I	11/28/2001	*	11			<1
B-3I	6/4/2002	*	24			5
B-3I	12/5/2002	*	7.1	3.7	<0.5	3.7
B-3I	6/3/2003	*	38	2	<1	2
B-3I	12/11/2003	*	22	<1	<1	<2
B-3I	3/2/2004	*	25	2.4	<1	2.4

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-3I	6/9/2004	*	30	2.3	<1	2.3
B-3I	9/1/2004	*	28	1.5	<0.63	1.5
B-3I	12/2/2004	*	29	1.1	<0.63	1.1
B-3I	3/3/2005	*	23	1.4	<1	1.4
B-3I	6/13/2005	*	23.3	0.86 J	<1	0.86
B-3I	9/2/2005	*	8.6	<1	<0.28	<1
B-3I	12/6/2005	*	16.5	0.7 J	<0.28	0.7 J
B-3I	3/7/2006	*	81.1	18	<0.38	18
B-3I	6/7/2006	*	22.6	<1	<1	<1
B-3I	9/6/2006	*	21.6	<1	<1	<1
B-3I	12/5/2006	*	17.3	<1	<1	<1
B-3I	6/6/2007	*	14	<1 U	<1 U	<1 U
B-3I	6/2/2009	*	17.2	1.1	<1 U	1.1
B-3I	6/3/2009	*	19.5	1.3	<1 U	1.3
B-3I	6/8/2010	*	0.26 J	<1 U	<1 U	<1 U
B-3I	6/16/2011	*	5.2	0.54 J	<1 U	0.54 J
B-3I	6/21/2012	*	10.3	0.32 J	<1 U	0.32 J
B-3I	6/27/2013	*	7.2	1.9	<1 U	1.9
B-3I	6/19/2014	*	4.4	2.4	<1 U	2.4
B-3I	7/1/2015	*	4.1	1.3	<1 U	1.3
B-3I	6/24/2016	*	3.9	<1 U	<1 U	<1 U
B-3I	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-3S	6/18/2014	*	<1 U	<1 U	<1 U	<1 U
B-3S	7/1/2015	*	<1 U	<1 U	<1 U	<1 U
B-4D	9/11/1996	*	<1		<1	<1
B-4D	10/30/1996	*	1			<1
B-4D	9/3/1997	*	<1			<1
B-4D	3/18/1998	*	<1			<1
B-4D	6/24/1998	*	<1			<1
B-4D	9/10/1998	*	<1			<1
B-4D	12/15/1998	*C	<1			<1
B-4D	3/23/1999	*	<1			<1
B-4D	6/22/1999	*	<1U			<1U
B-4D	9/14/1999	*	<1U			<1U
B-4D	12/1/1999	*	<1U			<1U
B-4D	3/7/2000	*	<1U			<1U
B-4D	9/13/2000	*	<1U			<1U
B-4D	12/5/2000	*	<1U			<1U
B-4D	3/13/2001	*	<1U		<0.5U	<1U
B-4D	6/5/2001	*	<1			<1
B-4D	9/11/2001	*	<1			<1

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-4D	11/28/2001	*	<1			<1
B-4D	6/4/2002	*	<1			<1
B-4D	9/5/2002	*	<1			<1
B-4D	12/5/2002	*	<1	<0.5	<0.5	<1
B-4D	3/5/2003	*	<1	<1	<1	<2
B-4D	6/3/2003	*	<1	<1	<1	<2
B-4D	12/12/2003	*	<1	<1	<1	<2
B-4D	3/2/2004	*	<1	<1	<1	<2
B-4D	6/8/2004	*	<1	<1	<1	<2
B-4D	9/1/2004	*	<0.37	<0.34	<0.63	<0.68
B-4D	12/3/2004	*	<0.37	<0.34	<0.63	<0.68
B-4D	3/4/2005	*	<1	<1	<1	<1
B-4D	6/13/2005	*	<1	<1	<1	<1
B-4D	9/2/2005	*	<0.15	<0.17	<0.28	<0.17
B-4D	12/6/2005	*	<0.15	<0.17	<0.28	<0.17
B-4D	3/7/2006	*	19.8	2.3	<0.38	2.3
B-4D	6/6/2006	*	3.1	<1	<1	<1
B-4D	9/6/2006	*	<1	<1	<1	<1
B-4D	12/5/2006	*	<1	<1	<1	<1
B-4D	6/6/2007	*	1.6	10.2	<1 U	10.2
B-4D	12/5/2007	*C	<1 U	<1 U	<1 U	<1 U
B-4D	6/24/2008	*C	<1 U	<1 U	<1 U	<1 U
B-4D	12/3/2008	*C	<1 U	<1 U	<1 U	<1 U
B-4D	6/2/2009	*	<1 U	<1 U	<1 U	<1 U
B-4D	12/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-4D	6/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-4D	12/9/2010	*	0.27 J	<1 U	<1 U	<1 U
B-4D	6/15/2011	*	0.34 J	<1 U	<1 U	<1 U
B-4D	12/15/2011	*	0.35 J	<1 U	<1 U	<1 U
B-4D	6/22/2012	*	0.28 J	<1 U	<1 U	<1 U
B-4D	12/4/2012	*	<1 U	<1 U	<1 U	<1 U
B-4D	6/25/2013	*	0.33 J	<1 U	<1 U	<1 U
B-4D	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
B-4D	6/18/2014	*C	0.26 NJ	<1 U	<1 U	<1 U
B-4D	12/9/2014	*	<1 U	<1 U	<1 U	<1 U
B-4D	7/1/2015	*C	0.18 NJ	<1 U	<1 U	<1 U
B-4D	12/16/2015	*C	0.23 NJ	<1 U	<1 U	<1 U
B-4D	6/22/2016	*C	0.33 NJ	<1 U	<1 U	<1 U
B-4D	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-4D	5/31/2017	*	<1.0	<1.0	<1.0	<1.0
B-4D	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-4I	12/6/1995	*	<5			77

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-4I	9/11/1996	*	15		<1	42
B-4I	10/30/1996	*	<5			39
B-4I	3/19/1997	*	<5			93
B-4I	6/12/1997	*	<5			16
B-4I	9/3/1997	*	1.1			68
B-4I	11/20/1997	*	<10			61
B-4I	3/18/1998	*	7.4			57
B-4I	6/24/1998	*	5.9			51
B-4I	9/10/1998	*	<12			52
B-4I	12/15/1998	*C	9.1			47
B-4I	3/23/1999	*	16			33
B-4I	6/23/1999	*	16			30
B-4I	9/14/1999	*	31			64
B-4I	12/1/1999	*	4.5			42
B-4I	3/7/2000	*	4.6			39
B-4I	9/13/2000	*	22			43
B-4I	12/5/2000	*	9.7			50
B-4I	3/13/2001	*	8.5			42
B-4I	6/5/2001	*	16			83
B-4I	9/11/2001	*	32			49
B-4I	11/28/2001	*	21			30
B-4I	6/4/2002	*	19			77
B-4I	9/5/2002	*	7.8			57
B-4I	12/5/2002	*	4.6	40	<1	40
B-4I	6/3/2003	*	12	5.7	<1	5.7
B-4I	12/12/2003	*	24	12	<1	12
B-4I	6/8/2004	*	8.2	5.2	<1	5.2
B-4I	12/2/2004	*	8.4	1.6	<0.63	1.6
B-4I	6/13/2005	*	4.3	54.4	0.39 J	54.8
B-4I	12/6/2005	*	1.5	14.4	<0.28	14.4
B-4I	6/6/2006	*	1.4	21.4	<1	21.4
B-4I	12/6/2006	*	1.5	7.7	<1	7.7
B-4I	6/6/2007	*	<1 U	<1 U	<1 U	<1 U
B-4I	12/5/2007	*C	1.2	3.5 J	<1 UJ	3.5
B-4I	6/24/2008	*C	1.7	12.6	<1 U	12.6
B-4I	12/3/2008	*C	1.2	2.6	<1 U	2.6
B-4I	6/3/2009	*	<1 U	3.2	<1 U	3.2
B-4I	12/3/2009	*	<1 U	2.4	<1 U	2.4
B-4I	6/8/2010	*	0.58 J	2.4	<1 U	2.4
B-4I	12/9/2010	*	1.3	5.6	<1 U	5.6
B-4I	6/16/2011	*	1.5	6.1	<1 U	6.1
B-4I	12/15/2011	*	2.1	19.8	<1 U	19.8
B-4I	6/21/2012	*	1.3	14.3	0.21 J	14.5

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HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-4I	6/27/2013	*C	0.3 NJ	8.4	<1 U	8.4
B-4I	6/19/2014	*C	0.3 NJ	6.5	<1 U	6.5
B-4I	7/1/2015	*C	0.26 NJ	3	<1 U	3
B-4I	12/16/2015	*C	0.26 NJ	1.1	<1 U	1.1
B-4I	6/24/2016	*	<1 U	1.5	<1 U	1.5
B-4I	12/21/2016	*C	<1 UJ	1.9	<1 UJ	1.9 J
B-4I	5/31/2017	*	<1.0	1.8	<1.0	1.8
B-4I	12/6/2017	*C	<1.0 U	1.2 J	<1.0 U	1.2
B-4S	12/6/1995	*	5.5			<1
B-4S	9/11/1996	*	<1		<1	<1
B-4S	3/19/1997	*	25			<1
B-4S	6/11/1997	*	<1			<1
B-4S	3/18/1998	*	5.4			<1
B-4S	6/24/1998	*	17			1.3
B-4S	9/10/1998	*C	18			<5
B-4S	12/16/1998	*	5.1			<1
B-4S	3/23/1999	*	5			<2.5
B-4S	6/23/1999	*	9.8			4.3
B-4S	9/14/1999	*	18			1.5
B-4S	9/13/2000	*	11			1.6
B-4S	6/5/2001	*	17			1.6
B-4S	6/4/2002	*	12			<1
B-4S	3/5/2003	*	4.8	50	<1	50
B-4S	6/3/2003	*	5.5	73	<1	73
B-4S	12/12/2003	*	12	50	<1	50
B-4S	12/12/2003	*	12	49	<1	49
B-4S	3/2/2004	*	5.7	44	<1	44
B-4S	6/8/2004	*	4.6	52	<1	52
B-4S	9/1/2004	*	7.4	57	<0.63	57
B-4S	12/2/2004	*	9.3	66	<0.63	66
B-4S	3/4/2005	*	7.5	41.3	<1	41.3
B-4S	6/13/2005	*	13.5	1.4	<1	1.4
B-4S	9/2/2005	*	16.5	1.6	<0.28	1.6
B-4S	12/6/2005	*	7.6	0.92 J	<0.28	0.92 J
B-4S	3/7/2006	*	7.1	<1	<0.38	<1
B-4S	6/6/2006	*	5.8	1.4	<1	1.4
B-4S	9/6/2006	*	4	<1	<1	<1
B-4S	12/5/2006	*	5.3	<1	<1	<1
B-4S	3/13/2007	*	9.3			<1 U
B-4S	6/6/2007	*	12.4	<1 U	<1 U	<1 U
B-4S	9/12/2007	*	6.3	<1 U	<1 U	
B-4S	12/5/2007	*C	8.6 J	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-4S	3/5/2008	*	11	<1 U	<1 U	<1 U
B-4S	6/24/2008	*	11.5	<1 U	<1 U	<1 U
B-4S	9/3/2008	*	5.3	<1 U	<1 U	<1 U
B-4S	12/3/2008	*	1.6	<1 U	<1 U	<1 U
B-4S	3/3/2009	*	4.7	<1 U	<1 U	<1 U
B-4S	3/5/2009	*	2.1	<1 U	<1 U	<1 U
B-4S	6/2/2009	*	6	1.3	<1 U	1.3
B-4S	9/9/2009	*	3.3	0.92 J	<1 U	0.92 J
B-4S	12/3/2009	*	1.9	<1 U	<1 U	<1 U
B-4S	3/10/2010	*	2.9	<1	<1 U	<1
B-4S	6/8/2010	*	8.6	0.57 J	<1 U	0.57 J
B-4S	9/8/2010	*	3	<1 U	<1 U	<1 U
B-4S	12/9/2010	*	5.7	<1 U	<1 U	<1 U
B-4S	3/30/2011	*	2.6	0.39 J	<1 U	0.39 J
B-4S	6/16/2011	*	3.9	0.5 J	<1 U	0.5 J
B-4S	9/16/2011	*	1.3	0.21 J	<1 U	0.21 J
B-4S	12/15/2011	*	3.8	1.3	<1 U	1.3
B-4S	3/22/2012	*	4.8	0.36 J	<1 U	0.36 J
B-4S	6/21/2012	*	3.1	<1 U	<1 U	0.21 J
B-4S	9/12/2012	*	3.1	<1 U	<1 U	<1 U
B-4S	12/6/2012	*	2.4	<1 U	<1 U	<1 U
B-4S	3/13/2013	*C	4.6	0.3 NJ	<1 U	0.3 J
B-4S	3/27/2014	*	<1 U	<1 U	<1 U	<1 U
B-4S	6/19/2014	*C	4.9	0.51 NJ	<1 U	0.51 NJ
B-4S	9/12/2014	*	3.8	<1 U	<1 U	<1 U
B-4S	12/9/2014	*	2.7	<1 U	<1 U	<1 U
B-4S	3/19/2015	*	8.5	<1	<1 U	<1
B-4S	7/1/2015	*C	8.2	0.86 NJ	<1 U	0.86 NJ
B-4S	9/24/2015	*	1.9	<1 U	<1 U	<1 U
B-4S	12/16/2015	*C	2.5	0.22 NJ	<1 U	0.22 NJ
B-4S	3/15/2016	*C	3.8	0.51 NJ	<1 U	0.51 NJ
B-4S	6/24/2016	*C	3.6	0.41 NJ	<1 U	0.41 NJ
B-4S	12/21/2016	*	1.5	<1 U	<1 U	<1 U
B-4S	5/31/2017	*	2.8	<1 U	<1 U	<1 U
B-4S	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-5D	12/5/1995	*	<1			<1
B-5D	12/7/1995	*	<1			<1
B-5D	9/10/1996	*	<1		<1	<1
B-5D	6/11/1997	*	<1			<1
B-5D	11/18/1997	*	<1			<1
B-5D	6/23/1998	*	<1			<1
B-5D	12/15/1998	*C	<1			<1

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-5D	6/22/1999	*	<1U			<1U
B-5D	12/1/1999	*	<1U			<1U
B-5D	12/5/2000	*	<1U			<1U
B-5D	6/5/2001	*	<1			<1
B-5D	11/28/2001	*	<1			<1
B-5D	6/4/2002	*	<1			<1
B-5D	12/5/2002	*	<1	<0.5	<0.5	<1
B-5D	6/3/2003	*	<1	<1	<1	<2
B-5D	12/11/2003	*	<1	<1	<1	<2
B-5D	6/9/2004	*	<1	<1	<1	<2
B-5D	12/3/2004	*	<0.37	<0.34	<0.63	<0.68
B-5D	6/14/2005	*	<1	<1	<1	<1
B-5D	12/6/2005	*	<0.15	<0.17	<0.28	<0.17
B-5D	6/6/2006	*	<1	<1	<1	<1
B-5D	12/5/2006	*	<1	<1	<1	<1
B-5D	3/14/2007	*	<1 U	<1 U	<1 U	
B-5D	6/6/2007	*	<1 U	<1 U	<1 U	<1 U
B-5D	9/13/2007	*	<1 U	<1 U	<1 U	
B-5D	12/6/2007	*	<1 U	<1 U	<1 U	<1 U
B-5D	3/5/2008	*	<1 U	<1 U	<1 U	<1 U
B-5D	6/24/2008	*	<1 U	<1 U	<1 U	<1 U
B-5D	9/4/2008	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/2/2008	*	<1 U	<1 U	<1 U	<1 U
B-5D	3/4/2009	*	<1 U	<1 U	<1 U	<1 U
B-5D	6/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-5D	9/9/2009	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-5D	3/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-5D	6/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-5D	9/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-5D	3/1/2011	*	<1 U	<1 U	<1 U	<1 U
B-5D	6/17/2011	*	<1 U	<1 U	<1 U	<1 U
B-5D	9/16/2011	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/15/2011	*	<1 U	<1 U	<1 U	<1 U
B-5D	3/22/2012	*	<1 U	<1 U	<1 U	<1 U
B-5D	6/22/2012	*	<1 U	<1 U	<1 U	<1 U
B-5D	9/12/2012	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/4/2012	*	<1 U	<1 U	<1 U	<1 U
B-5D	3/12/2013	*	<1 U	<1 U	<1 U	<1 U
B-5D	6/25/2013	*	<1 U	<1 U	<1 U	<1 U
B-5D	9/17/2013	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/17/2013	*	<1 U	<1 U	<1 U	<1 U

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ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-5D	3/27/2014	*	<1 U	<1 U	<1 U	<1 U
B-5D	6/18/2014	*	<1 U	<1 U	<1 U	<1 U
B-5D	9/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-5D	3/19/2015	*	<1 U	<1 U	<1 U	<1 U
B-5D	7/2/2015	*	<1 U	<1 U	<1 U	<1 U
B-5D	9/24/2015	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/15/2015	*	<1 U	<1 U	<1 U	<1 U
B-5D	3/15/2016	*	<1 U	<1 U	<1 U	<1 U
B-5D	6/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-5D	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-5D	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-5I	11/18/1997	*	16			<1
B-5I	6/23/1998	*	17			<1
B-5I	12/15/1998	*C	17			<1
B-5I	6/22/1999	*	18			<1U
B-5I	12/1/1999	*	17			<1U
B-5I	12/5/2000	*	21			<5U
B-5I	6/5/2001	*	19			<1
B-5I	11/28/2001	*	18			<1
B-5I	6/4/2002	*	17			<1
B-5I	12/5/2002	*	15	<0.5	<0.5	<1
B-5I	6/3/2003	*	15	<1	<1	<2
B-5I	12/11/2003	*	16	<1	<1	<2
B-5I	6/9/2004	*	10	<1	<1	<2
B-5I	12/2/2004	*	11	<0.34	<0.63	<0.68
B-5I	6/14/2005	*	11.6	<1	<1	<1
B-5I	12/6/2005	*	11.7	1.4	<0.28	1.4
B-5I	6/6/2006	*	6	<1	<1	<1
B-5I	12/5/2006	*	4.7	<1	<1	<1
B-5I	6/5/2007	*	4.5			<1 U
B-5I	12/6/2007	*	2.4	<1 U	<1 U	<1 U
B-5I	6/24/2008	*	4.5	<1 U	<1 U	<1 U
B-5I	12/3/2008	*	4.1	<1 U	<1 U	<1 U
B-5I	6/3/2009	*	5.3	<1 U	<1 U	<1 U
B-5I	12/3/2009	*	8.9	<1 U	<1 U	<1 U
B-5I	6/8/2010	*	6.9	<1 U	<1 U	<1 U
B-5I	12/9/2010	*	7.8	<1 U	<1 U	<1 U
B-5I	6/17/2011	*	7.7	<1 U	<1 U	<1 U
B-5I	12/15/2011	*	7.4	<1 U	<1 U	<1 U
B-5I	6/22/2012	*	6.4	<1 U	<1 U	<1 U

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HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-5I	12/4/2012	*	8.9	<1 U	<1 U	<1 U
B-5I	6/25/2013	*	7.5	<1 U	<1 U	<1 U
B-5I	12/17/2013	*	8.9	<1 U	<1 U	<1 U
B-5I	6/18/2014	*	3.2	<1 U	<1 U	<1 U
B-5I	12/11/2014	*	6.1	<1 U	<1 U	<1 U
B-5I	7/2/2015	*	5.1	<1 U	<1 U	<1 U
B-5I	12/15/2015	*	8.7	<1 U	<1 U	<1 U
B-5I	6/21/2016	*	6.1	<1 U	<1 U	<1 U
B-5I	12/21/2016	*C	3.6 J	<1 U	<1 U	<1 U
B-5I	5/31/2017	*	3.3	<1 U	<1 U	<1 U
B-5I	12/6/2017	*	1.4	<1.0 U	<1.0 U	<1.0 U
B-5S	6/5/2007	*	1.1			<1 U
B-5S	12/9/2010	*	0.77 J	<1 U	<1 U	<1 U
B-6I	12/5/1995	*	78			<5
B-6I	9/11/1996	*	38		<1	<2
B-6I	6/11/1997	*	140			<5
B-6I	11/19/1997	*	58			<5
B-6I	6/23/1998	*	71		<2.5	<2.5
B-6I	12/15/1998	*C	64			<2.5
B-6I	6/23/1999	*	31			<5
B-6I	12/1/1999	*	33			<5U
B-6I	12/5/2000	*	32			<1U
B-6I	6/5/2001	*	7.8			<1
B-6I	11/28/2001	*	1.9			<1
B-6I	6/4/2002	*	26			<1
B-6I	12/5/2002	*	<1	<0.5	<0.5	<1
B-6I	3/5/2003	*	<1	<1	<1	<2
B-6I	6/2/2003	*	43	<2	<2	<2
B-6I	12/12/2003	*	36	<2	<2	<4
B-6I	6/10/2004	*	27	<1	<1	<2
B-6I	6/10/2004	*		<1	<1	
B-6I	12/2/2004	*	46	<0.68	<1.3	<1.4
B-6I	6/14/2005	*	44.3	0.54 J	<1	0.54 J
B-6I	12/7/2005	*	3.7	<0.17	<0.28	<0.17
B-6I	6/6/2006	*	3.5	<1	<1	<1
B-6I	12/5/2006	*	4.8		<1	<1
B-6I	3/13/2007	*	12.9			<1 U
B-6I	6/6/2007	*	21.2	<1 U	<1 U	<1 U
B-6I	9/12/2007	*	33	<1 U	<1 U	
B-6I	12/5/2007	*C	36.7 J	<1 U	<1 U	<1 U
B-6I	3/5/2008	*	25.8	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-6I	6/24/2008	*	27.4	<1 U	<1 U	<1 U
B-6I	9/4/2008	*	21.4	<1 U	<1 U	<1 U
B-6I	12/3/2008	*	32.8	<1 U	<1 U	<1 U
B-6I	3/4/2009	*	23.8	<1 U	<1 U	<1 U
B-6I	6/3/2009	*	6.9	<1 U	<1 U	<1 U
B-6I	9/9/2009	*	5.7	<1 U	<1 U	<1 U
B-6I	12/3/2009	*	7	<1 U	<1 U	<1 U
B-6I	3/9/2010	*	24.3	<1 U	<1 U	<1 U
B-6I	6/9/2010	*	10	0.24 J	<1 U	0.24 J
B-6I	9/8/2010	*	9.4	<1 U	<1 U	<1 U
B-6I	12/9/2010	*	10	<1 U	<1 U	<1 U
B-6I	3/1/2011	*	24.4	<1 U	<1 U	<1 U
B-6I	6/16/2011	*	17.9	<1 U	<1 U	<1 U
B-6I	9/16/2011	*	15.6	0.44 J	<1 U	0.44 J
B-6I	12/13/2011	*	5.8	0.35 J	<1 U	0.35 J
B-6I	3/21/2012	*	6.9	0.59 J	<1 U	0.59 J
B-6I	6/21/2012	*	7.2	0.69 J	<1 U	0.69 J
B-6I	9/12/2012	*C	12.1	0.65 NJ	<1 U	0.65 NJ
B-6I	12/6/2012	*	12.1	0.64 J	<1 U	0.64 J
B-6I	3/13/2013	*C	8	0.45 NJ	<1 U	0.45 J
B-6I	6/27/2013	*C	10.1	0.45 NJ	<1 U	0.45 J
B-6I	9/18/2013	*	11.7	<1 U	<1 U	<1 U
B-6I	12/18/2013	*	12.3	<1 U	<1 U	<1 U
B-6I	3/27/2014	*	9.4 J	<1 U	<1 U	<1 U
B-6I	3/27/2014	*C	12.6 J	<1 U	<1 U	<1 U
B-6I	6/19/2014	*C	11.2	0.35 NJ	<1 U	0.35 NJ
B-6I	9/10/2014	*	5.5	<1 U	<1 U	<1 U
B-6I	12/9/2014	*	6.9	<1 U	<1 U	<1 U
B-6I	3/19/2015	*C	8	0.5 NJ	<1 U	0.5 NJ
B-6I	6/30/2015	*C	6.1	0.39 NJ	<1 U	0.39 NJ
B-6I	9/23/2015	*C	6.7	0.3 NJ	<1 U	0.3 NJ
B-6I	12/16/2015	*C	0.55 NJ	0.27 NJ	<1 U	<1 U
B-6I	12/16/2015	*C	0.54 NJ	<1 U	<1 U	<1 U
B-6I	3/15/2016	*C	10.3	0.33 NJ	<1 U	0.33 NJ
B-6I	6/24/2016	*C	6.2	0.33 NJ	<1 U	0.33 NJ
B-6I	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-6I	5/31/2017	*	1.3	<1 U	<1 U	<1 U
B-6I	12/6/2017	*	2.6	<1.0 U	<1.0 U	<1.0 U
B-6S	12/5/1995	*	5.2			<1
B-6S	9/11/1996	*	1		<1	<1
B-6S	6/11/1997	*	21			30
B-6S	11/18/1997	*	7.6		<1	7.9

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-6S	6/23/1998	*	20			13
B-6S	12/15/1998	*C	11			11
B-6S	6/22/1999	*	6.6		<1U	<1U
B-6S	12/1/1999	*	1.9			<1U
B-6S	12/5/2000	*	<1U			<1U
B-6S	6/5/2001	*	<1			<1
B-6S	11/28/2001	*	<1			<1
B-6S	6/4/2002	*	<1			<1
B-6S	6/2/2003	*	9.8	5.2	<1	5.2
B-6S	12/12/2003	*C	1.6	<1	<1	<2
B-6S	12/12/2003	*C	<1	<1	<1	<2
B-6S	6/10/2004	*	5.3	1.1	<1	<2
B-6S	12/2/2004	*	14	<0.34	<0.63	<0.68
B-6S	6/14/2005	*	3.3	0.28 J	<1	0.28 J
B-6S	12/6/2005	*	0.56 J	<0.17	<0.28	<0.17
B-6S	6/6/2006	*	<1	<1	<1	<1
B-6S	12/5/2006	*	3.3	<1	<1	<1
B-6S	3/13/2007	*	3.2			<1 U
B-6S	6/6/2007	*	<1 U	<1 U	<1 U	<1 U
B-6S	9/12/2007	*	<1 U	<1 U	<1 U	
B-6S	12/5/2007	*C	1.6 J	<1 U	<1 U	<1 U
B-6S	3/5/2008	*	<1	<1 U	<1 U	<1 U
B-6S	6/24/2008	*	3.4	<1 U	<1 U	<1 U
B-6S	9/4/2008	*	<1 U	<1 U	<1 U	<1 U
B-6S	12/4/2008	*	<1 U	<1 U	<1 U	<1 U
B-6S	3/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-6S	6/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-6S	9/9/2009	*	<1 U	<1 U	<1 U	<1 U
B-6S	12/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-6S	3/10/2010	*	<1 U	<1 U	<1 U	<1 U
B-6S	6/2/2010	*	<1 U	<1 U	<1 U	<1 U
B-6S	9/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-6S	12/9/2010	*	0.91 J	<1 U	<1 U	<1 U
B-6S	3/1/2011	*	1	<1 U	<1 U	<1 U
B-6S	6/16/2011	*	0.59 J	<1 U	<1 U	<1 U
B-6S	9/16/2011	*	0.36 J	0.72 J	<1 U	0.72 J
B-6S	12/13/2011	*	0.45 J	0.76 J	<1 U	0.76 J
B-6S	3/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-6S	6/21/2012	*	0.81 J	2.1	<1 U	2.1
B-6S	9/12/2012	*C	0.26 NJ	0.73 NJ	<1 U	0.73 NJ
B-6S	12/6/2012	*	0.67 J	1.1	<1 U	1.1
B-6S	3/13/2013	*C	<1	0.25 NJ	<1 U	0.25 J
B-6S	6/26/2013	*	2.7	<1 U	<1 U	<1 U

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ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-6S	6/26/2013		2.6	<1 U	<1 U	<1 U
B-6S	9/18/2013	*	1.3	<1 U	<1 U	<1 U
B-6S	12/18/2013	*	1.9	<1 U	<1 U	<1 U
B-6S	3/27/2014	*	1.3	<1 U	<1 U	<1 U
B-6S	6/19/2014	*	1.5	<1 U	<1 U	<1 U
B-6S	9/10/2014	*	1.2	<1 U	<1 U	<1 U
B-6S	12/9/2014	*	1.1	<1 U	<1 U	<1 U
B-6S	3/19/2015	*C	1.6	0.57 NJ	<1 U	0.57 NJ
B-6S	6/30/2015	*	1.7	<1 U	<1 U	<1 U
B-6S	9/23/2015	*	<1 U	<1 U	<1 U	<1 U
B-6S	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
B-6S	3/15/2016	*	1.7	<1 U	<1 U	<1 U
B-6S	6/22/2016	*	1.6	<1 U	<1 U	<1 U
B-6S	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-6S	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-6S	12/6/2017	*C	1.1 J	<1.0 U	<1.0 U	<1.0 U
B-7I	12/5/1995	*	<1			<1
B-7I	9/11/1996	*	<1		<1	<1
B-7I	6/11/1997	*	<1			<1
B-7I	6/23/1998	*	<1			<1
B-7I	12/15/1998	*C	<1			<1
B-7I	6/22/1999	*	<1U			<1U
B-7I	12/1/1999	*	<1U			<1U
B-7I	12/5/2000	*	<1U			<1U
B-7I	6/5/2001	*	<1			<1
B-7I	11/28/2001	*	<1			<1
B-7I	6/4/2002	*	<1			<1
B-7I	12/5/2002	*	<1	<0.5	<0.5	<1
B-7I	6/2/2003	*C	<1	<1	<1	<1
B-7I	12/11/2003	*	<1	<1	<1	<2
B-7I	6/10/2004	*	<1	<1	<1	<2
B-7I	12/2/2004	*	<0.37	<0.34	<0.63	<0.68
B-7I	6/14/2005	*	<1	<1	<1	<1
B-7I	12/7/2005	*	<0.15	<0.17	<0.28	<0.17
B-7I	6/6/2006	*	<1	<1	<1	<1
B-7I	12/5/2006	*	<1		<1	<1
B-7S	12/5/1995	*	<1			<1
B-7S	9/10/1996	*	<1		<1	<1
B-7S	6/11/1997	*	<1			<1
B-7S	11/18/1997	*	<1			<1
B-7S	6/23/1998	*	<1			<1

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-7S	12/15/1998	*C	<1			<1
B-7S	6/22/1999	*	<1U			<1U
B-7S	12/1/1999	*	<1U			<1U
B-7S	12/5/2000	*	<1U			<1U
B-7S	6/5/2001	*	<1			<1
B-7S	11/28/2001	*	<1			<1
B-7S	6/4/2002	*	<1			<1
B-7S	6/2/2003	*C	<1	<1	<1	<1
B-7S	12/11/2003	*	<1	<1	<1	<2
B-7S	6/10/2004	*	<1	<1	<1	<2
B-7S	12/2/2004	*	<0.37	<0.34	<0.63	<0.68
B-7S	6/14/2005	*	<1	<1	<1	<1
B-7S	12/6/2005	*	<0.15	<0.17	<0.28	<0.17
B-7S	6/6/2006	*	<1	<1	<1	<1
B-7S	12/5/2006	*	<1	<1	<1	<1
B-8S	12/16/2011	*	<1 U	<1 U	<1 U	<1 U
B-8S	6/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-8S	12/6/2012	*	<1 U	<1 U	<1 U	<1 U
B-8S	6/26/2013	*	0.32 NJ	<1 U	<1 U	<1 U
B-8S	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
B-8S	6/19/2014	*	<1 U	<1 U	<1 U	<1 U
B-8S	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-8S	7/1/2015	*	<1 U	<1 U	<1 U	<1 U
B-8S	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
B-8S	6/24/2016	*	<1 U	<1 U	<1 U	<1 U
B-8S	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-8S	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-8S	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-8D	3/13/2007	*	<1 U			<1 U
B-8D	6/6/2007	*	<1 U	<1 U	<1 U	<1 U
B-8D	9/13/2007	*	<1 U	<1 U	<1 U	
B-8D	12/6/2007	*	<1 U	<1 U	<1 U	<1 U
B-8D	3/5/2008	*	<1 U	<1 U	<1 U	<1 U
B-8D	6/25/2008	*	<1 U	<1 U	<1 U	<1 U
B-8D	9/4/2008	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/4/2008	*	<1 U	<1 U	<1 U	<1 U
B-8D	3/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-8D	6/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-8D	9/10/2009	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/4/2009	*	<1 U	<1 U	<1 U	<1 U
B-8D	3/8/2010	*	<1 U	<1 U	<1 U	<1 U

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ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-8D	3/11/2010	*	<1 U	<1 U	<1 U	<1 U
B-8D	6/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-8D	9/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-8D	3/1/2011	*	<1 U	<1 U	<1 U	<1 U
B-8D	6/16/2011	*	<1 U	<1 U	<1 U	<1 U
B-8D	9/15/2011	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/16/2011	*	<1 U	<1 U	<1 U	<1 U
B-8D	3/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-8D	6/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-8D	9/11/2012	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/4/2012	*	<1 U	<1 U	<1 U	<1 U
B-8D	3/12/2013	*	<1 U	<1 U	<1 U	<1 U
B-8D	6/26/2013		<1 U	<1 U	<1 U	<1 U
B-8D	6/26/2013	*	<1 U	<1 U	<1 U	<1 U
B-8D	9/17/2013	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/17/2013	*	<1 U	<1 U	<1 U	<1 U
B-8D	3/26/2014	*	<1 U	<1 U	<1 U	<1 U
B-8D	6/18/2014	*	<1 U	<1 U	<1 U	<1 U
B-8D	9/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/9/2014	*	<1 U	<1 U	<1 U	<1 U
B-8D	3/19/2015	*	<1 U	<1 U	<1 U	<1 U
B-8D	7/1/2015	*	<1 U	<1 U	<1 U	<1 U
B-8D	9/23/2015	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
B-8D	3/15/2016	*	<1 U	<1 U	<1 U	<1 U
B-8D	6/22/2016	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-8D	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-8D	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-8I	6/23/1998	*	<1			<1
B-8I	12/15/1998	*C	<1			<1
B-8I	3/23/1999	*	<1			<1
B-8I	6/22/1999	*	<1U			<1U
B-8I	9/14/1999	*	<1U			<1U
B-8I	12/1/1999	*	<1U			<1U
B-8I	3/7/2000	*	<1U			<1U
B-8I	9/13/2000	*	<1U			<1U
B-8I	12/5/2000	*	<1U			<1U
B-8I	3/13/2001	*	<1U			<1U
B-8I	6/5/2001	*	<1			<1
B-8I	9/11/2001	*	<1			<1

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-8I	11/28/2001	*	<1			<1
B-8I	6/4/2002	*	<1			<1
B-8I	9/5/2002	*	150			32
B-8I	12/5/2002	*	33	1.3	<0.5	1.3
B-8I	3/5/2003	*	<1	<1	<1	<2
B-8I	6/3/2003	*	<1	<1	<1	<2
B-8I	9/9/2003	*	<1	<1	<1	<2
B-8I	12/12/2003	*	<1	<1	<1	<2
B-8I	3/2/2004	*	<1	<1	<1	<2
B-8I	6/9/2004	*	<1	<1	<1	<2
B-8I	9/1/2004	*	<0.37	<0.34	<0.63	<0.68
B-8I	12/3/2004	*	<0.37	<0.34	<0.63	<0.68
B-8I	3/4/2005	*	<1	<1	<1	<1
B-8I	6/14/2005	*	<1	<1	<1	<1
B-8I	9/2/2005	*	<0.15	<0.17	<0.28	<0.17
B-8I	12/6/2005	*	<0.15	<0.17	<0.28	<0.17
B-8I	3/7/2006	*	8.1	<0.56	<0.38	0.54 J
B-8I	6/6/2006	*	<1	<1	<1	<1
B-8I	9/6/2006	*	<1	<1	<1	<1
B-8I	12/5/2006	*	<1	<1	<1	<1
B-8I	3/13/2007	*	<1 U			<1 U
B-8I	6/6/2007	*	<1 U	<1 U	<1 U	<1 U
B-8I	9/13/2007	*	<1 U	<1 U	<1 U	
B-8I	12/6/2007	*	<1 U	<1 U	<1 U	<1 U
B-8I	3/5/2008	*	<1 U	<1 U	<1 U	<1 U
B-8I	6/25/2008	*	<1 U	<1 U	<1 U	<1 U
B-8I	9/4/2008	*	<1 U	<1 U	<1 U	<1 U
B-8I	12/4/2008	*	<1 U	<1 U	<1 U	<1 U
B-8I	3/4/2009	*	<1 U	<1 U	<1 U	<1 U
B-8I	6/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-8I	9/10/2009	*	<1 U	<1 U	<1 U	<1 U
B-8I	12/4/2009	*	<1 U	<1 U	<1 U	<1 U
B-8I	3/11/2010	*	<1 U	<1 U	<1 U	<1 U
B-8I	6/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-8I	9/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-8I	12/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-8I	3/1/2011	*	<1 U	<1 U	<1 U	<1 U
B-8I	6/16/2011	*	<1 U	<1 U	<1 U	<1 U
B-8I	9/15/2011	*	<1 U	<1 U	<1 U	<1 U
B-8I	12/16/2011	*	<1 U	<1 U	<1 U	<1 U
B-8I	3/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-8I	6/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-8I	9/11/2012	*	<1 U	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-8I	12/4/2012	*	<1 U	<1 U	<1 U	<1 U
B-8I	3/12/2013	*	<1 U	<1 U	<1 U	<1 U
B-8I	6/25/2013	*	<1 U	<1 U	<1 U	<1 U
B-8I	9/17/2013	*	<1 U	<1 U	<1 U	<1 U
B-8I	12/17/2013	*	<1 U	<1 U	<1 U	<1 U
B-8I	3/26/2014	*	<1 U	<1 U	<1 U	<1 U
B-8I	6/18/2014	*	<1 U	<1 U	<1 U	<1 U
B-8I	9/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-8I	12/9/2014	*	<1 U	<1 U	<1 U	<1 U
B-8I	3/19/2015	*	<1 U	<1 U	<1 U	<1 U
B-8I	7/1/2015	*	<1 U	<1 U	<1 U	<1 U
B-8I	9/23/2015	*	<1 U	<1 U	<1 U	<1 U
B-8I	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
B-8I	3/15/2016	*	<1 U	<1 U	<1 U	<1 U
B-8I	6/22/2016	*	<1 U	<1 U	<1 U	<1 U
B-8I	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-8I	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-8I	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-9S	12/16/2011	*	<1 U	<1 U	<1 U	<1 U
B-9S	6/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-9S	12/6/2012	*	<1 U	<1 U	<1 U	<1 U
B-9S	6/27/2013	*	<1 U	<1 U	<1 U	<1 U
B-9S	6/25/2014	*	<1 U	<1 U	<1 U	<1 U
B-9S	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-9S	7/2/2015	*	<1 U	<1 U	<1 U	<1 U
B-9S	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
B-9S	6/24/2016	*	<1 U	<1 U	<1 U	<1 U
B-9S	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-9S	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-9S	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-9D	6/5/2007	*	<1 U			<1 U
B-9D	6/24/2008	*	<1 U	<1 U	<1 U	<1 U
B-9D	6/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-9D	6/17/2011	*	<1 U	<1 U	<1 U	<1 U
B-9D	6/22/2012	*	<1 U	<1 U	<1 U	<1 U
B-9D	6/26/2013		<1 U	<1 U	<1 U	<1 U
B-9D	6/26/2013	*C	0.39 NJ	<1 U	<1 U	<1 U
B-9D	6/18/2014	*	<1 U	<1 U	<1 U	<1 U
B-9D	7/1/2015	*	<1 U	<1 U	<1 U	<1 U
B-9D	6/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-9D	5/31/2017	*	<1 U	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-9I	6/5/2007	*	<1 U			<1 U
B-9I	6/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-10S	3/14/2007	*	309	108	2.4	
B-10S	12/1/2009	*	<1 U	<1 U	<1 U	<1 U
B-10S	12/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-10S	12/15/2011	*	<1 U	<1 U	<1 U	<1 U
B-10S	12/6/2012	*	<1 U	<1 U	<1 U	<1 U
B-10S	12/19/2013	*	<1 U	<1 U	<1 U	<1 U
B-10S	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-10S	12/16/2015	*C	0.28 NJ	<1 U	<1 U	<1 U
B-10S	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-11D	6/5/2007	*C	<1 U			<1 U
B-11D	6/24/2008	*C	<1 U	<1 U	<1 U	<1 U
B-11D	6/3/2009	*C	<1 U	<1 U	<1 U	<1 U
B-11D	6/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-11D	6/17/2011	*	<1 U	<1 U	<1 U	<1 U
B-11D	6/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-11D	6/26/2013		<1 U	<1 U	<1 U	<1 U
B-11D	6/26/2013	*	<1 U	<1 U	<1 U	<1 U
B-11D	6/18/2014	*	<1 U	<1 U	<1 U	<1 U
B-11D	7/1/2015	*	<1 U	<1 U	<1 U	<1 U
B-11D	6/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-11D	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-11I	3/10/2010	*	2.2	<1 U	<1 U	<1 U
B-12D	12/5/1995	*	1.2			<1
B-12D	9/10/1996	*	1		<1	<1
B-12D	6/11/1997	*	1.2			<1
B-12D	11/19/1997	*	1.1			<1
B-12D	6/23/1998	*	1.3			<1
B-12D	12/15/1998	*C	<1			<1
B-12D	6/22/1999	*	<1U			<1U
B-12D	12/1/1999	*	<1U			<1U
B-12D	12/5/2000	*	<1U			<1U
B-12D	6/5/2001	*	<1			<1
B-12D	11/28/2001	*	<1			<1
B-12D	6/4/2002	*	<1			<1
B-12D	12/5/2002	*	<1	<0.5	<0.5	<1
B-12D	6/3/2003	*	<1	<1	<1	<2

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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-12D	12/11/2003	*	<1	<1	<1	<2
B-12D	6/9/2004	*	<1	<1	<1	<2
B-12D	12/3/2004	*	<0.37	<0.34	<0.63	<0.68
B-12D	6/14/2005	*	0.55 J	<1	<1	<1
B-12D	12/6/2005	*	0.45 J	<0.17	<0.28	<0.17
B-12D	6/6/2006	*	<1	<1	<1	<1
B-12D	12/5/2006	*	<1	<1	<1	<1
B-13D	3/14/2007	*C	<1 U	<1 U	<1 U	
B-13D	6/5/2007	*C	<1 U			<1 U
B-13D	9/13/2007	*C	<1 U	<1 U	<1 U	
B-13D	12/6/2007	*C	<1 U	<1 U	<1 U	<1 U
B-13D	3/5/2008	*C	<1 U	<1 U	<1 U	<1 U
B-13D	6/24/2008	*C	<1 U	<1 U	<1 U	<1 U
B-13D	9/4/2008	*C	<1 U	<1 U	<1 U	<1 U
B-13D	12/4/2008	*C	<1 U	<1 U	<1 U	<1 U
B-13D	3/4/2009	*C	<1 U	<1 U	<1 U	<1 U
B-13D	9/9/2009	*	<1 U	<1 U	<1 U	<1 U
B-13D	3/9/2010	*	<1 U	<1 U	<1 U	<1 U
B-13D	6/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-13D	9/8/2010	*	<1 U	<1 U	<1 U	<1 U
B-13D	12/9/2010	*	0.37 J	<1 U	<1 U	<1 U
B-13D	3/1/2011	*	<1 U	<1 U	<1 U	<1 U
B-13D	6/17/2011	*	<1 U	<1 U	<1 U	<1 U
B-13D	9/15/2011	*	0.23 J	<1 U	<1 U	<1 U
B-13D	12/15/2011	*	<1 U	<1 U	<1 U	<1 U
B-13D	3/22/2012	*	0.35 J	<1 U	<1 U	<1 U
B-13D	6/21/2012	*	<1 U	<1 U	<1 U	<1 U
B-13D	9/11/2012	*	0.36 NJ	<1 U	<1 U	<1 U
B-13D	12/4/2012	*	0.46 J	<1 U	<1 U	<1 U
B-13D	3/13/2013	*C	0.62 NJ	<1 U	<1 U	<1 U
B-13D	6/26/2013	*C	0.72 NJ	<1 U	<1 U	<1 U
B-13D	9/17/2013	*	<1 U	<1 U	<1 U	<1 U
B-13D	12/17/2013	*	<1 U	<1 U	<1 U	<1 U
B-13D	3/26/2014	*	<1 U	<1 U	<1 U	<1 U
B-13D	6/18/2014	*C	0.26 NJ	<1 U	<1 U	<1 U
B-13D	9/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-13D	12/9/2014	*	<1 U	<1 U	<1 U	<1 U
B-13D	3/19/2015	*C	0.75 NJ	<1 U	<1 U	<1 NJ
B-13D	7/1/2015	*C	<1 NJ	<1 U	<1 U	<1 U
B-13D	9/24/2015	*C	0.45 NJ	<1 U	<1 U	<1 U
B-13D	12/15/2015	*C	0.35 NJ	<1 U	<1 U	<1 U
B-13D	3/15/2016	*C	0.57 NJ	<1 U	<1 U	<1 U

TABLE 6
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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-13D	6/21/2016	*C	0.18 NJ	<1 U	<1 U	<1 U
B-13D	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-13D	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-13D	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-13I	12/6/1995	*	<1			<1
B-13I	9/10/1996	*	<1		<1	<1
B-13I	11/19/1997	*	<1			<1
B-13I	6/23/1998	*	<1			<1
B-13I	12/15/1998	*C	<1			<1
B-13I	6/22/1999	*	<1U			<1U
B-13I	12/1/1999	*	<1U			<1U
B-13I	12/5/2000	*	<1U			<1U
B-13I	6/5/2001	*	<1			<1
B-13I	11/28/2001	*	<1			<1
B-13I	6/4/2002	*	<1			<1
B-13I	12/5/2002	*C	<1	<0.5	<0.5	<1
B-13I	6/3/2003	*	<1	<1	<1	<2
B-13I	12/11/2003	*	<1	<1	<1	<2
B-13I	6/9/2004	*	<1	<1	<1	<2
B-13I	12/3/2004	*	<0.37	<0.34	<0.63	<0.68
B-13I	6/14/2005	*	<1	<1	<1	<1
B-13I	12/7/2005	*	0.47 J	<0.17	<0.28	<0.17
B-13I	6/6/2006	*	<1	<1	<1	<1
B-13I	12/5/2006	*	<1	<1	<1	<1
B-13I	12/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-15	9/10/1996	*	600		<1	510
B-15	10/30/1996	*	830			620
B-15	9/3/1997	*	1500			340
B-15	11/19/1997	*	760			870
B-15	3/17/1998	*				
B-15	6/24/1998	*	730			510
B-15	9/10/1998	*	590			410
B-15	12/16/1998	*	700			590
B-15	3/23/1999	*	50			41
B-15	6/23/1999	*	460			130
B-15	9/14/1999	*	740			110
B-15	12/2/1999	*	670		<50U	420
B-15	3/7/2000	*	450			150
B-15	9/13/2000	*	310		<10U	140
B-15	12/6/2000	*	320			200
B-15	3/13/2001	*	130			320

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-15	6/5/2001	*	130			290
B-15	9/11/2001	*	85			300
B-15	6/4/2002	*	78			58
B-15	9/5/2002	*	58			24
B-15	6/2/2003	*	150	68	<5	68
B-15	12/11/2003	*	270	91	<5	91
B-15	6/8/2004	*	150	83	<5	83
B-15	12/1/2004	*	80	34	<3.2	34
B-15	6/13/2005	*	128	54.2	1.2	55.4
B-15	12/6/2005	*	192	93.1	0.7 J	93.8
B-15	6/6/2006	*	198	117	6.1	124
B-15	12/5/2006	*	159	86.2	<1	87.3
B-15	6/6/2007	*	126	95	2.3	97.3
B-15	6/24/2008	*	50.2	183	3.1	183
B-15	6/2/2009	*	24	47.2	<1 U	47.2
B-15	6/2/2010	*	25.3	24	<1 U	24.4
B-15	6/16/2011	*	64.5	34.3	5.7	40
B-15	6/21/2012	*	24.7	15.6	1.6	17.2
B-15	6/19/2014	*C	8.4	56.3	0.45 NJ	56.8
B-15	7/1/2015	*	2.6	14.7	<1 U	14.7
B-15	6/24/2016	*	12.8	29.4	<1 U	29.4
B-16	12/6/1995	*	1800			370
B-16	9/10/1996	*	1300		<1	480
B-16	10/30/1996	*	820			310
B-16	3/19/1997	*	850			210
B-16	6/11/1997	*	1600			390
B-16	9/3/1997	*	2600			690
B-16	11/19/1997	*	1400			540
B-16	3/18/1998	*	980		<50	900
B-16	6/24/1998	*	1800			330
B-16	9/10/1998	*	160			240
B-16	12/16/1998	*	1500			<100
B-16	3/23/1999	*	870			350
B-16	6/23/1999	*	1500		<100	<100
B-16	9/14/1999	*	530		<100U	100
B-16	12/2/1999	*	830			180
B-16	3/7/2000	*	1400		<50U	290
B-16	9/13/2000	*	1300			120
B-16	12/6/2000	*	280			<20U
B-16	3/13/2001	*	270			130
B-16	6/5/2001	*C	750			230
B-16	9/11/2001	*C	1400			410

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-16	11/29/2001	*	1700			410
B-16	6/4/2002	*	1500			520
B-16	9/5/2002	*	920			210
B-16	12/5/2002	*C	1600	540	<50	540
B-16	3/5/2003	*	1200	270	<50	270
B-16	6/2/2003	*	520	17	<10	17
B-16	12/11/2003	*	1400	280	<20	280
B-16	3/2/2004	*	1800	380	<50	380
B-16	6/8/2004	*	890	120	<50	120
B-16	9/1/2004	*	740	150	<32	150
B-16	12/1/2004	*	690	67	<32	67
B-16	3/3/2005	*	697	108	5	113
B-16	6/13/2005	*	720	68.7	2.7	71.4
B-16	9/2/2005	*	1420	191	20.6	211
B-16	12/6/2005	*	1140	160	3.3 J	163
B-16	3/7/2006	*	1370	200	21.1	221
B-16	6/6/2006	*	572	9	1.8	10.9
B-16	9/6/2006	*	1300	70.2	6.3	76.5
B-16	12/5/2006	*	855	42.7	<2	42.7
B-16	6/5/2007	*	1370			126
B-16	12/6/2007	*	1390	121	<5 U	123
B-16	6/24/2008	*	233	52.6	3.4	56
B-16	12/2/2008	*	205	37.2	<1 U	38
B-16	6/2/2009	*	343	59.4	9.8	69.2
B-16	12/2/2009	*	366	18.9	<1 U	19.5
B-16	6/2/2010	*	140	4	<1 U	4
B-16	12/10/2010	*	66.3	0.94 J	<1 U	0.94 J
B-16	6/16/2011	*	306	19.4	3.9	23.3
B-16	12/13/2011	*	290	23.1	0.82 J	23.9
B-16	6/21/2012	*	441	34.9	1.1	36
B-16	12/4/2012	*	903	90	5.2	95.2
B-16	6/25/2013	*	514	69.5	5.5	75
B-16	12/17/2013	*	703	120	1.6	122
B-16	6/19/2014	*C	328	37.1	2.5 NJ	39.5
B-16	12/9/2014	*C	625	108	21.3 J	129
B-16	7/1/2015	*	348	72.5	2.8	75.3
B-16	12/16/2015	*C	371	82.4	4.8	87.2
B-16	6/21/2016	*	223	98.8	10.3	109
B-16	12/21/2016	*C	341 J	96.2	3.4	99.6
B-16	5/31/2017	*C	264	43.8	7.5 J	51.3
B-16	12/6/2017	*C	220	78.4	<1.0 UJ	78.4
B-17	12/6/1995	*	2400			360

TABLE 6
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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-17	9/10/1996	*	2000		<1	620
B-17	10/30/1996	*	1500			420
B-17	6/11/1997	*	2300			330
B-17	9/3/1997	*	2000			380
B-17	11/19/1997	*	1200			350
B-17	3/18/1998	*	1600		<50	540
B-17	6/24/1998	*	2700		<100	600
B-17	9/10/1998	*	1200			270
B-17	12/16/1998	*	640			<50
B-17	3/23/1999	*	1500			270
B-17	6/23/1999	*	1100			240
B-17	9/14/1999	*	590			160
B-17	12/2/1999	*	<50U			800
B-17	3/7/2000	*	<5U			150
B-17	9/13/2000	*	<50U			960
B-17	12/6/2000	*	<50U		<50U	730
B-17	3/13/2001	*	<50U			950
B-17	6/5/2001	*C	<50			570
B-17	9/11/2001	*C	<20			290
B-17	11/29/2001	*	<10		<10	400
B-17	6/4/2002	*	<20			800
B-17	9/5/2002	*	<20			470
B-17	6/2/2003	*	84	900	<20	900
B-17	12/11/2003	*	110	1100	<20	1100
B-17	3/2/2004	*	22	980	<20	980
B-17	6/8/2004	*	<20	690	<20	690
B-17	9/1/2004	*	<7.4	940	<13	940
B-17	12/1/2004	*	<7.4	1300	<13	1300
B-17	3/3/2005	*	1.1	513	10.3	523
B-17	6/13/2005	*	2.7	550	6.2	556
B-17	9/2/2005	*	9	613	5.6	619
B-17	12/6/2005	*	7.2	502	2.5 J	505
B-17	3/7/2006	*	213	444	5.3	447
B-17	6/6/2006	*	9.4	633	5.2	644
B-17	9/6/2006	*	3.7	589	8.1	595
B-17	12/5/2006	*	20	846	11.3	857
B-17	6/5/2007	*	1.9			585
B-17	6/24/2008	*	18.1	133	1.1	134
B-17	6/2/2009	*	8.9	194	2.4	197
B-17	6/2/2010	*	3.5	106	1.8	108
B-17	6/17/2011	*	3.1	182	1.2	183
B-17	6/21/2012	*	1.6	85.6	0.74 J	86.3
B-17	6/27/2013	*	1.5	368	2.3	368

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-17	6/19/2014	*	1.5	172	1.7	174
B-17	7/1/2015	*C	5.9	78.9	0.35 NJ	79.2
B-17	6/24/2016	*	0.63 NJ	189	0.84 NJ	190
B-17	5/31/2017	*C	1.2 J	193	2.2	195
B-18	12/6/1995	*	8.6			<1
B-18	9/10/1996	*	6		<1	<1
B-18	10/30/1996	*	4			<1
B-18	6/12/1997	*	4.4			<1
B-18	9/4/1997	*	4.3			<1
B-18	11/18/1997	*	6.9			<1
B-18	3/17/1998	*				
B-18	6/24/1998	*	7.1			<0.5
B-18	9/10/1998	*	7.1			<2.5
B-18	12/16/1998	*	5.6			<1
B-18	3/23/1999	*	5.1			<2.5
B-18	6/23/1999	*	7.3			<1
B-18	9/14/1999	*	5.2			<1U
B-18	12/1/1999	*	4.5			<1U
B-18	3/7/2000	*	5.7			<1U
B-18	9/13/2000	*	5.4			<1U
B-18	12/5/2000	*	4.5			<1U
B-18	3/13/2001	*	4			<1U
B-18	6/5/2001	*	4.6			<1
B-18	9/11/2001	*	4.5			<1
B-18	11/29/2001	*	3.7			<1
B-18	6/4/2002	*	3.4			<1
B-18	9/5/2002	*	4.2			<1
B-18	12/5/2002	*	4.7	<0.5	<0.5	<1
B-18	3/5/2003	*	4	<1	<1	<2
B-18	6/3/2003	*	3.6	<1	<1	<2
B-18	9/9/2003	*	4.5	<1	<1	<2
B-18	12/11/2003	*	3.8	<1	<1	<2
B-18	6/9/2004	*	3.4	<1	<1	<2
B-18	12/2/2004	*	4.2	<0.34	<0.63	<0.68
B-18	6/14/2005	*	4.6	<1	<1	<1
B-18	12/6/2005	*	3.1	<0.17	<0.28	<0.17
B-18	6/6/2006	*	1.7	<1	<1	<1
B-18	12/5/2006	*	1.2	<1	<1	<1
B-18	3/14/2007	*	1.6	<1 U	<1 U	
B-18	6/5/2007	*	1.3			<1 U
B-18	9/13/2007	*	<2 U	<2 U	<2 U	
B-18	12/6/2007	*	<1 U	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-18	3/5/2008	*	<1 U	<1 U	<1 U	<1 U
B-18	6/24/2008	*	1.5	<1 U	<1 U	<1 U
B-18	9/3/2008	*	<1 U	<1 U	<1 U	<1 U
B-18	12/2/2008	*	1.6	<1 U	<1 U	<1 U
B-18	12/3/2008	*	<1 U	<1 U	<1 U	<1 U
B-18	3/3/2009	*	<1 U	<1 U	<1 U	<1 U
B-18	6/4/2009	*	1.2	<1 U	<1 U	<1 U
B-18	9/10/2009	*	0.85 J	<1U	<1U	<1U
B-18	12/3/2009	*	1.2	<1 U	<1 U	<1 U
B-18	3/10/2010	*	2.1	<1 U	<1 U	<1 U
B-18	6/2/2010	*	1.3	<1 U	<1 U	<1 U
B-18	9/8/2010	*	1.3	<1 U	<1 U	<1 U
B-18	12/10/2010	*	1.7	<1 U	<1 U	<1 U
B-18	3/1/2011	*	2.1	<1 U	<1 U	<1 U
B-18	6/17/2011	*	1.9	<1 U	<1 U	<1 U
B-18	9/16/2011	*	1.5	<1 U	<1 U	<1 U
B-18	12/14/2011	*	1.1	<1 U	<1 U	<1 U
B-18	3/22/2012	*	2	<1 U	<1 U	<1 U
B-18	6/21/2012	*	<1	<1 U	<1 U	<1 U
B-18	9/11/2012	*C	0.92 NJ	<1 U	<1 U	<1 U
B-18	12/5/2012	*	0.84 J	<1 U	<1 U	<1 U
B-18	3/12/2013	*	<1	<1 U	<1 U	<1 U
B-18	6/26/2013	*	1.2	<1 U	<1 U	<1 U
B-18	9/17/2013	*	<1	<1 U	<1 U	<1 U
B-18	12/17/2013	*	<1	<1 U	<1 U	<1 U
B-18	3/26/2014	*	1.1	<1 U	<1 U	<1 U
B-18	6/19/2014	*C	0.79 NJ	<1 U	<1 U	<1 U
B-18	9/10/2014	*	<1 U	<1 U	<1 U	<1 U
B-18	12/9/2014	*	<1 U	<1 U	<1 U	<1 U
B-18	3/19/2015	*	21.6	2.9	<1 U	2.9
B-18	7/1/2015	*C	0.82 NJ	<1 U	<1 U	<1 U
B-18	9/23/2015	*C	0.83 NJ	<1 U	<1 U	<1 U
B-18	12/15/2015	*C	0.99 NJ	<1 U	<1 U	<1 U
B-18	3/15/2016	*C	0.69 NJ	<1 U	<1 U	<1 U
B-18	6/21/2016	*C	0.74 NJ	<1 U	<1 U	<1 U
B-18	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
B-18	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
B-18	12/5/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-23I-D	6/7/2007	*C	52.9	<1 U	<1 U	<1 U
B-23I-D	12/7/2007	*C	27.7	<1 U	<1 U	<1 U
B-23I-D	6/25/2008	*C	22.3	<1 U	<1 U	<1 U
B-23I-D	12/22/2008	*C	5.3	3.2	<1 U	3.2

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-23I-D	6/4/2009	*	9.3	<1 U	<1 U	<1 U
B-23I-D	12/1/2009	*	17.2	<1 U	<1 U	<1 U
B-23I-D	6/7/2010	*	2.6	0.53 J	<1 U	0.53 J
B-23I-D	12/8/2010	*	10.8	0.85 J	<1 U	0.85 J
B-23I-D	6/15/2011	*	18.5	0.78 J	<1 U	0.78 J
B-23I-D	12/14/2011	*	13.1	0.64 J	<1 U	0.64 J
B-23I-D	6/20/2012	*	3.4	0.53 J	<1 U	0.53 J
B-23I-D	12/5/2012	*	1.6	0.85 J	<1 U	0.85 J
B-23I-D	6/27/2013	*C	7	0.79 NJ	<1 U	0.79 J
B-23I-D	12/19/2013	*	5.6	<1 U	<1 U	<1 U
B-23I-D	6/17/2014	*C	3.1	0.68 NJ	<1 U	0.68 NJ
B-23I-D	12/10/2014	*	6.6	<1 U	<1 U	<1 U
B-23I-D	6/30/2015	*C	7.3	0.76 NJ	<1 U	0.76 NJ
B-23I-D	12/16/2015	*C	3.6	0.71 NJ	<1 U	0.71 NJ
B-23I-D	6/23/2016	*C	9.3	0.80 NJ	<1 U	0.80 NJ
B-23I-D	12/22/2016	*	5.0	<1 U	<1 U	<1 U
B-23I-D	6/1/2017	*	6.5	<1 U	<1 U	<1 U
B-23I-D	12/7/2017	*	3.3	<1.0 U	<1.0 U	<1.0 U
B-24D	12/6/1995	*	<1			<1
B-24D	6/11/1997	*	<1			<1
B-24D	11/19/1997	*	<1			<1
B-24D	6/24/1998	*	<0.5		<0.25	<0.5
B-24D	12/16/1998	*	<1			<1
B-24D	6/22/1999	*	<1U			<1U
B-24D	12/1/1999	*	<1U			<1U
B-24D	12/5/2000	*	<1U			<1U
B-24D	6/5/2001	*	<1			<1
B-24D	11/28/2001	*	<1			<1
B-24D	6/4/2002	*	<1			<1
B-24D	12/4/2002	*	<1	<0.5	<0.5	<1
B-24D	6/3/2003	*	<1	<1	<1	<2
B-24D	12/12/2003	*	<1	<1	<1	<2
B-24D	6/9/2004	*	<1	<1	<1	<2
B-24D	12/3/2004	*	<0.37	<0.34	<0.63	<0.68
B-24D	6/13/2005	*	<1	<1	<1	<1
B-24D	12/7/2005	*	<0.15	<0.17	<0.28	<0.17
B-24D	6/8/2006	*	<1	<1	<1	<1
B-24D	12/5/2006	*	<1	<1	<1	<1
B-24D	3/14/2007	*	<1 U	<1 U	<1 U	
B-24D	6/12/2007	*	<1 U	<1 U	<1 U	<1 U
B-24D	6/25/2008	*	<1 U	<1 U	<1 U	<1 U
B-24D	6/4/2009	*	<1 U	<1 U	<1 U	<1 U

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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-24D	6/2/2010	*	<1 U	<1 U	<1 U	<1 U
B-24D	6/16/2011	*	<1 U	<1 U	<1 U	<1 U
B-24D	6/22/2012	*	<1 U	<1 U	<1 U	<1 U
B-24D	6/18/2014	*	<1 U	<1 U	<1 U	<1 U
B-24D	7/2/2015	*	<1 U	<1 U	<1 U	<1 U
B-24D	6/22/2016	*	<1 U	<1 U	<1 U	<1 U
B-24D	5/31/2017	*	<1 U	<1 U	<1 U	<1 U
C-1S	12/7/1995	*	2.9			<1
C-1S	9/12/1996	*	3.5		<1	<1
C-1S	6/12/1997	*	<1			<1
C-1S	11/20/1997	*	2.8			<1
C-1S	6/25/1998	*	<1			<1
C-1S	12/17/1998	*C	1UJ			1UJ
C-1S	6/24/1999	*	<1			<1
C-1S	12/2/1999	*	2.8			<1U
C-1S	12/7/2000	*	<1U			<1U
C-1S	6/5/2001	*C	<1			<1
C-1S	6/4/2003	*	<1	<1	<1	<2
C-1S	12/10/2003	*	<1	<1	<1	<2
C-1S	6/9/2004	*	1.1	<1	<1	<2
C-1S	12/1/2004	*	1.2	<0.34	<0.63	<0.68
C-1S	6/15/2005	*	2.7	0.99 J	<1	0.99 J
C-1S	12/7/2005	*	2.2	0.71 J	<0.28	0.71 J
C-1S	6/7/2006	*	<1	<1	<1	<1
C-1S	12/6/2006	*	<1	<1	<1	<1
C-1S	6/5/2007	*	1.1			<1 U
C-1S	12/6/2007	*	1.6	<1 U	<1 U	<1 U
C-1S	6/24/2008	*	1.2	<1 U	<1 U	<1 U
C-1S	12/4/2008	*	3	2	<1 U	2
C-1S	6/4/2009	*	1.8	<1 U	<1 U	<1 U
C-1S	9/9/2009	*	3.4	2.1	<1 U	2.1
C-1S	9/10/2009	*	3.3	2.1	<1 U	2.1
C-1S	12/2/2009	*	1.6 U	1.1 U	<1 U	1.1 U
C-1S	6/3/2010	*	2.1	<1 U	<1 U	<1 U
C-1S	12/8/2010	*	1.7	0.61 J	<1 U	0.61 J
C-1S	6/15/2011	*	1.5	0.52 J	<1 U	0.52 J
C-1S	12/13/2011	*	<1 U	<1 U	<1 U	<1 U
C-1S	6/21/2012	*	1.5	0.51 J	<1 U	0.51 J
C-1S	12/5/2012	*	1.1	0.4 J	<1 U	0.4 J
C-1S	6/26/2013	*C	1.9	0.84 NJ	<1 U	0.84 J
C-1S	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-1S	6/17/2014	*C	0.52 NJ	<1 U	<1 U	<1 U

TABLE 6
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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-1S	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
C-1S	6/30/2015	*	<1 U	<1 U	<1 U	<1 U
C-1S	12/17/2015	*C	0.37 NJ	<1 U	<1 U	<1 U
C-1S	6/23/2016	*C	0.53 NJ	0.39 NJ	<1 U	0.39 NJ
C-1S	12/22/2016	*	<1 U	<1 U	<1 U	<1 U
C-1S	6/1/2017	*	<1 U	<1 U	<1 U	<1 U
C-1S	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-1D	3/14/2007	*	<1 U	<1 U	<1 U	
C-1D	6/5/2007	*	<1 U			<1 U
C-1D	9/12/2007	*	<1 U	<1 U	<1 U	
C-1D	12/6/2007	*	<1 U	<1 U	<1 U	<1 U
C-1D	3/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/24/2008	*	<1 U	<1 U	<1 U	<1 U
C-1D	9/2/2008	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-1D	3/5/2009	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/4/2009	*	<1 U	<1 U	<1 U	<1 U
C-1D	9/10/2009	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/2/2009	*	<1	<1	<1 U	<1
C-1D	3/10/2010	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/3/2010	*	<1 U	<1 U	<1 U	<1 U
C-1D	9/9/2010	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/8/2010	*	<1 U	<1 U	<1 U	<1 U
C-1D	3/2/2011	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/15/2011	*	<1 U	<1 U	<1 U	<1 U
C-1D	9/14/2011	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/14/2011	*	<1 U	<1 U	<1 U	<1 U
C-1D	3/20/2012	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/21/2012	*	<1 U	<1 U	<1 U	<1 U
C-1D	9/11/2012	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/5/2012	*	<1 U	<1 U	<1 U	<1 U
C-1D	3/13/2013	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/26/2013	*	<1 U	<1 U	<1 U	<1 U
C-1D	9/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-1D	3/26/2014	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/17/2014	*	<1 U	<1 U	<1 U	<1 U
C-1D	9/9/2014	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
C-1D	3/18/2015	*C	<1 U	0.61 NJ	<1 U	0.61 NJ
C-1D	3/18/2015	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/30/2015	*	<1 U	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-1D	9/23/2015	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/17/2015	*	<1 U	<1 U	<1 U	<1 U
C-1D	4/6/2016	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/23/2016	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/22/2016	*	<1 U	<1 U	<1 U	<1 U
C-1D	6/1/2017	*	<1 U	<1 U	<1 U	<1 U
C-1D	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-1I	12/7/1995	*	<1			<1
C-1I	9/12/1996	*	1		<1	<1
C-1I	11/20/1997	*	58			<5
C-1I	6/25/1998	*	43			<2.5
C-1I	12/17/1998	*C	1UJ			2.5UJ
C-1I	6/24/1999	*	43			<2.5
C-1I	12/2/1999	*	67			3.1
C-1I	12/6/2000	*	36			<2U
C-1I	6/5/2001	*	52			<2
C-1I	11/29/2001	*	35			<2
C-1I	6/4/2002	*	41			2.4
C-1I	12/4/2002	*	43	<2	<2	<2
C-1I	6/4/2003	*	32	<1	<1	<2
C-1I	12/10/2003	*	37	<1	<1	<2
C-1I	6/9/2004	*	31	1.1	<1	<2
C-1I	6/9/2004	*		1.1	<1	
C-1I	12/1/2004	*	35	2.9	<0.63	2.9
C-1I	6/15/2005	*	34.3	1.7	<1	1.7
C-1I	12/7/2005	*	36.5	3.1	<0.28	3.1
C-1I	6/7/2006	*	35.7	2.1	<1	2.1
C-1I	12/6/2006	*	26	2	<1	2
C-1I	3/14/2007	*	40.5	2.6	<1 U	
C-1I	6/7/2007	*	32.9	1.3	<1 U	1.3
C-1I	9/12/2007	*	30	1.3	<1 U	
C-1I	12/6/2007	*	36.8	2.4	<1 U	2.4
C-1I	3/4/2008	*	34.9	2.9	<1 U	2.9
C-1I	6/24/2008	*	38.1	3.5	<1 U	3.5
C-1I	9/3/2008	*	31.6	1.8	<1 U	1.8
C-1I	12/4/2008	*	30.8	6.1	<1 U	6.1
C-1I	3/5/2009	*	33.4	4.5	<1 U	5.1
C-1I	6/4/2009	*	30.1	2.5	<1 U	2.5
C-1I	12/2/2009	*	26.3	2.9	<1 U	2.9
C-1I	3/10/2010	*	30.8	2.5	<1 U	2.5
C-1I	6/3/2010	*	27	<1	<1 U	<1
C-1I	9/9/2010	*	20.8	1.6	<1 U	1.6

TABLE 6
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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-1I	12/8/2010	*	29	3.9	<1 U	3.9
C-1I	3/2/2011	*	26.9	2.7	<1 U	2.7
C-1I	6/15/2011	*	27.8	2.1	<1 U	2.1
C-1I	9/14/2011	*	23.6	1.2	<1 U	1.2
C-1I	12/14/2011	*	23.3	2.2	<1 U	2.2
C-1I	3/20/2012	*	24.7	2.1	<1 U	2.1
C-1I	6/21/2012	*	24	1.5	<1 U	1.5
C-1I	9/11/2012	*	24.2	1.9	<1 U	1.9
C-1I	12/5/2012	*	23.8	3.7	<1 U	3.7
C-1I	3/13/2013	*	26.9	3.7	<1 U	3.7
C-1I	6/26/2013	*	30.3	4.3	<1 U	4.3
C-1I	9/18/2013	*	21.3	2.7	<1 U	2.7
C-1I	12/18/2013	*	23.5	2.5	<1 U	2.5
C-1I	3/26/2014	*	21.3	1.8	<1 U	1.8
C-1I	6/17/2014	*	22.8	1.7	<1 U	1.7
C-1I	9/9/2014	*	21.9	1.3	<1 U	1.3
C-1I	12/10/2014	*	19.8	1.9	<1 U	1.9
C-1I	3/18/2015	*C	4.5 J	0.32 NJ	<1 U	0.32 NJ
C-1I	6/30/2015	*	20.5	2.1	<1 U	2.1
C-1I	9/23/2015	*	23	2.1	<1 U	2.1
C-1I	12/17/2015	*	20.8	2.6	<1 U	2.6
C-1I	4/6/2016	*	20.8	2.2	<1 U	2.2
C-1I	6/23/2016	*	21.4	3.0	<1 U	3.0
C-1I	12/22/2016	*	20.6	2.0	<1 U	2.0
C-1I	6/1/2017	*	21.8	2.8	<1 U	2.8
C-1I	12/7/2017	*	22.9	3.5	<1.0 U	3.5
C-2S	12/7/1995	*	<1			<1
C-2S	9/12/1996	*	<1		<1	<1
C-2S	6/12/1997	*	<1			<1
C-2S	11/20/1997	*	<1			<1
C-2S	6/25/1998	*	<1			<1
C-2S	12/17/1998	*C	1UJ			1UJ
C-2S	6/24/1999	*	<1			<1
C-2S	12/2/1999	*	<1U			<1U
C-2S	12/7/2000	*	<1U			<1U
C-2S	11/29/2001	*	<1			<1
C-2S	6/4/2002	*	<1			<1
C-2S	12/4/2002	*	<1	<0.5	<0.5	<1
C-2S	6/3/2003	*	<1	<1	<1	<2
C-2S	12/10/2003	*	<1	<1	<1	<2
C-2S	6/9/2004	*	<1	<1	<1	<2
C-2S	12/1/2004	*	<0.37	<0.34	<0.63	<0.68

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-2S	6/15/2005	*	<1	<1	<1	<1
C-2S	12/7/2005	*	<0.15	<0.17	<0.28	<0.17
C-2S	6/7/2006	*	<1	<1	<1	<1
C-2S	12/6/2006	*	<1	<1	<1	<1
C-2S	6/7/2007	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/6/2007	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/25/2008	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/5/2008	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/5/2009	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/2/2009	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/3/2010	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/8/2010	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/15/2011	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/12/2011	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/20/2012	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/5/2012	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/26/2013	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/17/2014	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/30/2015	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/17/2015	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/23/2016	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/22/2016	*	<1 U	<1 U	<1 U	<1 U
C-2S	6/1/2017	*	<1 U	<1 U	<1 U	<1 U
C-2S	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-2I	12/7/1995	*	330			<25
C-2I	9/12/1996	*	170		<1	<25
C-2I	6/12/1997	*	84			<25
C-2I	11/20/1997	*	270			<50
C-2I	6/25/1998	*	190		<5	<5
C-2I	12/17/1998	*C	180 J			20UJ
C-2I	6/24/1999	*	150			<5
C-2I	12/2/1999	*	240			<5U
C-2I	12/7/2000	*	110		<2U	<2U
C-2I	6/5/2001	*	110			<5
C-2I	11/29/2001	*	100			<5
C-2I	6/4/2002	*	100			<5
C-2I	12/4/2002	*	170	<5	<5	<5
C-2I	6/3/2003	*	110	<10	<10	<20
C-2I	12/10/2003	*	110	<2	<2	<4
C-2I	6/9/2004	*	97	2.3	<2	<4

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-2I	12/2/2004	*	140	<0.68	<1.3	<1.4
C-2I	6/15/2005	*	111	1.5	<1	1.5
C-2I	12/7/2005	*	171	2.1	<0.28	2.1
C-2I	6/7/2006	*	125	2	<1	2
C-2I	12/6/2006	*	133	1.6	<1	1.6
C-2I	6/7/2007	*	119	2.6	<1 U	2.6
C-2I	12/6/2007	*	169	2.6	<1 U	2.6
C-2I	6/25/2008	*	120	4	<1 U	4
C-2I	12/5/2008	*	118	2.4	<1 U	2.4
C-2I	6/5/2009	*	80.6	1.5	<1 U	1.5
C-2I	12/1/2009	*	134	1.8	<1 U	1.8
C-2I	6/3/2010	*	86.3	2.1	<1 U	2.1
C-2I	12/8/2010	*	129	3.5	<1 U	3.5
C-2I	6/15/2011	*	85.8	4.7	0.78 J	5.5
C-2I	12/14/2011	*	104	1.9	<1 U	1.9
C-2I	6/20/2012	*	74.1	1.9	<1 U	1.9
C-2I	12/5/2012	*	111 J	2.1	<1 U	2.1
C-2I	6/26/2013	*	85.4	2.5	<1 U	2.5
C-2I	12/18/2013	*	87	1.9	<1 U	1.9
C-2I	6/17/2014	*	74.4	1.4	<1 U	1.4
C-2I	12/10/2014	*	68.2 J	1.4 J	<1 U	1.4
C-2I	6/30/2015	*	59.8	4.1	<1 U	4.1
C-2I	12/17/2015	*	79.6	2.4	<1 U	2.4
C-2I	6/23/2016	*C	6.2 J	<1 UJ	<1 U	<1 UJ
C-2I	12/22/2016	*C	72 J	1.6	<1 U	1.6
C-2I	6/1/2017	*C	81.5	1.5 J	<1 U	1.5
C-2I	12/6/2017	*	75.3	1.7	<1.0 U	1.7
C-2D	12/7/1995	*	91			200
C-2D	6/12/1997	*	43			78
C-2D	11/20/1997	*	94			120
C-2D	6/25/1998	*	30			300
C-2D	12/17/1998	*	<20		20UJ	34 UJ
C-2D	12/17/1998	*C	16 EJ			35 EJ
C-2D	6/24/1999	*	20			37
C-2D	12/2/1999	*	39			130
C-2D	12/7/2000	*	72			78
C-2D	6/5/2001	*	19			16
C-2D	11/29/2001	*	15			13
C-2D	6/4/2002	*	10			9.1
C-2D	12/4/2002	*	14	24	<0.5	24
C-2D	6/3/2003	*	10	28	<1	<2
C-2D	12/10/2003	*	33	110	<2	110

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ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-2D	6/9/2004	*	18	55	<2	55
C-2D	12/1/2004	*	21	34	<1.3	34
C-2D	6/15/2005	*	22.8	39.8	<1	39.8
C-2D	12/7/2005	*	42.3	61	<0.28	61
C-2D	6/7/2006	*	10.8	20.3	<1	20.3
C-2D	12/6/2006	*	5.9	8.9	<1	8.9
C-2D	6/7/2007	*	29.7	32.3	<1 U	32.3
C-2D	12/6/2007	*	11.8	16.5	<1 U	16.5
C-2D	6/25/2008	*	13	28.7	<1 U	29.4
C-2D	12/5/2008	*	29.5	18.3	<1 U	18.3
C-2D	6/4/2009	*	17.3	21.6	<1 U	21.6
C-2D	12/1/2009	*	26.3 U	23 U	<1 U	23 U
C-2D	6/7/2010	*	6.8	7.9	<1 U	7.9
C-2D	12/8/2010	*	18.4	42.3	<1 U	42.5
C-2D	6/15/2011	*	15.5	44.2	0.84 J	45
C-2D	12/14/2011	*	16.7	41.8	<1 U	41.8
C-2D	6/20/2012	*	11.1	24.1	0.22 J	24.3
C-2D	12/5/2012	*	15.2	28.7	<1 U	28.7
C-2D	6/26/2013	*C	23.7	38	0.64 NJ	38.7
C-2D	12/18/2013	*	10	15.8	<1 U	15.8
C-2D	6/17/2014	*	8.5	14.8	<1 U	14.8
C-2D	12/10/2014	*C	11.6 J	18 J	<1 U	18 J
C-2D	6/30/2015	*	8	14.9	<1 U	14.9
C-2D	12/17/2015	*	6.3	18.1	<1 U	18.1
C-2D	6/23/2016	*	13	20.8	<1 U	20.8
C-2D	12/22/2016	*	5.4	7.3	<1 U	7.3
C-2D	6/1/2017	*	6.0	7.4	<1 U	7.4
C-2D	12/6/2017	*	6.3	7.1	<1.0 U	7.1
C-3S	12/7/1995	*	<1			<1
C-3S	9/12/1996	*	<1		<1	<1
C-3S	6/12/1997	*	1.4			<1
C-3S	11/20/1997	*	<1		<1	<1
C-3S	6/25/1998	*	<1			<1
C-3S	12/17/1998	*C	1UJ			1UJ
C-3S	6/24/1999	*	<1			<1
C-3S	12/2/1999	*	<1U		<0.5U	<1U
C-3S	12/6/2000	*	<1U			<1U
C-3S	6/5/2001	*	<1			<1
C-3S	11/29/2001	*	<1			<1
C-3S	6/4/2002	*	<1			<1
C-3S	12/4/2002	*	<1	<0.5	<0.5	<1
C-3S	6/4/2003	*	<1	<1	<1	<2

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-3S	12/10/2003	*	<1	<1	<1	<2
C-3S	6/9/2004	*	<1	<1	<1	<2
C-3S	12/2/2004	*	<0.37	<0.34	<0.63	<0.68
C-3S	6/15/2005	*	<1	<1	<1	<1
C-3S	12/7/2005	*	<0.15	<0.17	<0.28	<0.17
C-3S	6/7/2006	*	<1	<1	<1	<1
C-3S	12/6/2006	*	<1	<1	<1	<1
C-3S	6/7/2007	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/6/2007	*C	<1 U	<1 U	<1 U	<1 U
C-3S	6/25/2008	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-3S	6/4/2009	*	<1 U	<1 U	<1 U	<1 U
C-3S	9/10/2009	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/1/2009	*	<1 U	<1 U	<1 U	<1 U
C-3S	6/7/2010	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/8/2010	*	0.44 J	<1 U	<1 U	<1 U
C-3S	6/16/2011	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/12/2011	*	<1 U	<1 U	<1 U	<1 U
C-3S	6/20/2012	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/5/2012	*	<1 U	<1 U	<1 U	<1 U
C-3S	6/26/2013	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-3S	6/17/2014	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
C-3S	6/30/2015	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/17/2015	*	<1 U	<1 U	<1 U	<1 U
C-3S	6/23/2016	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/22/2016	*	<1 U	<1 U	<1 U	<1 U
C-3S	6/1/2017	*	<1 U	<1 U	<1 U	<1 U
C-3S	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-3D	6/7/2007	*	<1 U	<1 U	<1 U	<1 U
C-3D	9/12/2007	*	<1 U	<1 U	<1 U	
C-3D	12/6/2007	*	<1 U	<1 U	<1 U	<1 U
C-3D	3/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-3D	6/25/2008	*	<1 U	<1 U	<1 U	<1 U
C-3D	9/3/2008	*	<1 U	<1 U	<1 U	<1 U
C-3D	12/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-3D	3/5/2009	*	<1 U	<1 U	<1 U	<1 U
C-3D	6/4/2009	*	<1 U	<1 U	<1 U	<1 U
C-3D	12/1/2009	*	<1	<1 U	<1 U	<1 U
C-3D	3/10/2010	*	<1 U	<1 U	<1 U	<1 U
C-3D	6/7/2010	*	<1 U	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-3D	9/9/2010	*	<1 U	<1 U	<1 U	<1 U
C-3D	12/8/2010	*	<1 U	0.41 J	<1 U	0.41 J
C-3D	3/2/2011	*	<1 U	<1 U	<1 U	<1 U
C-3D	6/16/2011	*	<1 U	0.27 J	<1 U	0.27 J
C-3D	9/14/2011	*	<1 U	<1 U	<1 U	<1 U
C-3D	12/14/2011	*	0.26 J	0.43 J	<1 U	0.43 J
C-3D	3/21/2012	*	0.21 J	0.39 J	<1 U	0.39 J
C-3D	6/20/2012	*	<1 U	<1 U	<1 U	<1 U
C-3D	9/11/2012	*C	0.27 NJ	0.25 NJ	<1 U	0.25 NJ
C-3D	12/5/2012	*	<1 U	0.38 J	<1 U	0.38 J
C-3D	3/13/2013	*C	0.23 NJ	0.51 NJ	0.39 NJ	0.9 J
C-3D	6/27/2013	*C	0.19 UJ	0.4 NJ	0.24 NJ	0.63 J
C-3D	9/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-3D	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-3D	3/26/2014	*	<1 U	<1 U	<1 U	<1 U
C-3D	6/17/2014	*	<1 U	<1 U	<1 U	<1 U
C-3D	9/9/2014	*	<1 U	<1 U	<1 U	<1 U
C-3D	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
C-3D	3/18/2015	*	1.4	<1 U	<1 U	<1 U
C-3D	6/30/2015	*C	0.22 NJ	<1 U	<1 U	<1 U
C-3D	9/23/2015	*	<1 U	<1 U	<1 U	<1 U
C-3D	12/17/2015	*	<1 U	<1 U	<1 U	<1 U
C-3D	4/6/2016	*C	<1 U	0.39 NJ	<1 U	0.39 NJ
C-3D	6/23/2016	*C	0.19 NJ	0.37 NJ	0.19 NJ	0.56 NJ
C-3D	12/22/2016	*	<1 U	<1 U	<1 U	<1 U
C-3D	6/1/2017	*	<1 U	<1 U	<1 U	<1 U
C-3D	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-3I	12/7/1995	*	<1			<1
C-3I	9/12/1996	*	<1		<1	<1
C-3I	6/12/1997	*	<1			<1
C-3I	11/20/1997	*	50			<5
C-3I	6/24/1998	*	<1			<1
C-3I	12/17/1998	*	29			<1
C-3I	6/24/1999	*	28		<1	<1
C-3I	12/2/1999	*	14			<1U
C-3I	12/6/2000	*	14			<1U
C-3I	6/5/2001	*	26			<1
C-3I	11/29/2001	*	22			<1
C-3I	6/4/2002	*	27			<1
C-3I	12/4/2002	*	29	<1	<1	<1
C-3I	6/4/2003	*	28	1.1	<1	<2
C-3I	12/10/2003	*	21	<1	<1	<2

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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-3I	6/9/2004	*	23	<1	<1	<2
C-3I	12/2/2004	*	20	<0.34	<0.63	<0.68
C-3I	6/15/2005	*	23.8	0.23 J	<1	0.23 J
C-3I	12/6/2005	*	36.7	0.43 J	<0.28	0.43 J
C-3I	6/7/2006	*	23	<1	<1	<1
C-3I	12/6/2006	*	28.1	<1	<1	<1
C-3I	6/7/2007	*	25	<1 U	<1 U	<1 U
C-3I	12/6/2007	*C	15.9	<1 U	<1 U	<1 U
C-3I	6/25/2008	*	19.1	<1 U	<1 U	<1 U
C-3I	12/4/2008	*	29	<1 U	<1 U	<1 U
C-3I	6/4/2009	*	12.3	<1 U	<1 U	<1 U
C-3I	12/1/2009	*	<28.7 U	<1 U	<1 U	<1 U
C-3I	6/7/2010	*	10.9	<1 U	<1 U	<1 U
C-3I	12/8/2010	*	26.5	0.26 J	<1 U	0.26 J
C-3I	6/16/2011	*	13	<1 U	<1 U	<1 U
C-3I	12/13/2011	*	22.1	<1 U	<1 U	<1 U
C-3I	6/20/2012	*	12.1	<1 U	<1 U	<1 U
C-3I	12/5/2012	*	20.6	0.35 J	<1 U	0.35 J
C-3I	6/27/2013	*C	15.5	0.72 NJ	<1 U	0.72 J
C-3I	12/18/2013	*	18.2	<1 U	<1 U	<1 U
C-3I	6/17/2014	*C	14.1	0.29 NJ	<1 U	0.29 NJ
C-3I	12/10/2014	*	13.8	<1 U	<1 U	<1 U
C-3I	6/30/2015	*	10.5	<1 U	<1 U	<1 U
C-3I	12/17/2015	*	16.4	<1 U	<1 U	<1 U
C-3I	6/23/2016	*C	12.6	0.44 NJ	<1 U	0.44 NJ
C-3I	12/22/2016	*C	15.6 J	2.5	<1 U	2.5
C-3I	6/1/2017	*	18.7	1.5	<1 U	1.5
C-3I	12/6/2017	*C	18.7	1.6 J	<1.0 U	1.6
C-5	11/20/1997	*	<1		<1	<1
C-5	6/25/1998	*	<1			<1
C-5	12/16/1998	*	<1			<1
C-5	6/24/1999	*	<1			<1
C-5	12/2/1999	*	<1U			<1U
C-5	12/6/2000	*	<1U			<1U
C-5	6/5/2001	*	<1			<1
C-5	11/29/2001	*	<1			<1
C-5	6/4/2002	*	<1			<1
C-5	12/4/2002	*	<1	<0.5	<0.5	<1
C-5	6/4/2003	*	<1	<1	<1	<2
C-5	12/10/2003	*	1.6	<1	<1	<2
C-5	6/9/2004	*	<1			<2
C-5	6/9/2004	*		<1	<1	

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-5	12/2/2004	*	<0.37	<0.34	<0.63	<0.68
C-5	6/15/2005	*	<1	<1	<1	<1
C-5	6/7/2006	*	<1	<1	<1	<1
C-5	12/6/2006	*	<1	<1	<1	<1
C-6	12/7/1995	*	16			<1
C-6	11/20/1997	*	6.9			<1
C-6	6/25/1998	*	14			<1
C-6	12/17/1998	*	4.8			<1
C-6	12/17/1998	*C	6.1 J			<1
C-6	6/24/1999	*	8			<1
C-6	12/2/1999	*	6.5			<1U
C-6	12/6/2000	*	9.3			<1U
C-6	6/5/2001	*	4.1			<1
C-6	11/29/2001	*	3.9			<1
C-6	6/4/2002	*	4.7			<1
C-6	12/4/2002	*	4.3	<0.5	<0.5	<1
C-6	6/4/2003	*	2.5	<1	<1	<2
C-6	12/10/2003	*	3.4	<1	<1	<2
C-6	6/9/2004	*	5.7	<1	<1	<2
C-6	12/2/2004	*	4.6	<0.34	<0.63	<0.68
C-6	6/15/2005	*	6.9	0.3 J	<1	0.3 J
C-6	12/7/2005	*	5	<0.17	<0.28	<0.17
C-6	6/7/2006	*	4.6	<1	<1	<1
C-6	12/6/2006	*	2.7	<1	<1	<1
C-6	6/8/2007	*	2.3	<1 U	<1 U	<1 U
C-6	9/12/2007	*	4.9	<1 U	<1 U	
C-6	12/7/2007	*	5	<1 U	<1 U	<1 U
C-6	3/4/2008	*	5.8	<1 U	<1 U	<1 U
C-6	6/24/2008	*	6.7	<1 U	<1 U	<1 U
C-6	9/3/2008	*	4.9	<1 U	<1 U	<1 U
C-6	12/4/2008	*	4.8	<1 U	<1 U	<1 U
C-6	3/5/2009	*	6	<1 U	<1 U	<1 U
C-6	6/4/2009	*	7	<1 U	<1 U	<1 U
C-6	9/10/2009	*	4.8	<1 U	<1 U	<1 U
C-6	12/2/2009	*	4.7	<1 U	<1 U	<1 U
C-6	3/10/2010	*	7	<1 U	<1 U	<1 U
C-6	6/7/2010	*	3.5	<1 U	<1 U	<1 U
C-6	9/9/2010	*	4	<1 U	<1 U	<1 U
C-6	12/8/2010	*	5.4	0.39 J	<1 U	0.39 J
C-6	3/2/2011	*	5.7	<1 U	<1 U	<1 U
C-6	6/16/2011	*	5.7	0.24 J	<1 U	0.24 J
C-6	9/15/2011	*	3.9	<1 U	<1 U	<1 U

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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-6	12/15/2011	*	4.7	0.28 J	<1 U	0.28 J
C-6	3/21/2012	*	6.1	0.54 J	<1 U	0.54 J
C-6	6/20/2012	*	5.9	0.22 J	<1 U	0.22 J
C-6	9/12/2012	*C	5.4	0.32 NJ	<1 U	0.32 NJ
C-6	12/5/2012	*	5.2	0.47 J	<1 U	0.47 J
C-6	3/13/2013	*C	6.8	0.44 NJ	<1 U	0.44 J
C-6	6/27/2013	*C	7.4	0.29 NJ	<1 U	0.29 J
C-6	9/18/2013	*	5.8	<1 U	<1 U	<1 U
C-6	12/19/2013	*	4.8	<1 U	<1 U	<1 U
C-6	3/26/2014	*	5.1	<1 U	<1 U	<1 U
C-6	6/17/2014	*C	6.4	0.37 NJ	<1 U	0.37 NJ
C-6	9/9/2014	*	6.1	<1 U	<1 U	<1 U
C-6	12/10/2014	*	5	<1 U	<1 U	<1 U
C-6	3/18/2015	*	1.2	<1 U	<1 U	<1 U
C-6	6/30/2015	*C	4.2	0.48 NJ	<1 U	0.48 NJ
C-6	9/23/2015	*C	4.6	0.28 NJ	<1 U	0.28 NJ
C-6	12/16/2015	*C	4	0.36 NJ	<1 U	0.36 NJ
C-6	4/6/2016	*C	4.4	0.40 NJ	<1 U	0.40 NJ
C-6	6/23/2016	*C	5.7	0.47 NJ	<1 U	0.47 NJ
C-6	12/22/2016	*C	4.4 J	<1 U	<1 U	<1 U
C-6	6/1/2017	*	5.3	<1 U	<1 U	<1 U
C-6	12/6/2017	*	4.8	<1.0 U	<1.0 U	<1.0 U
C-7	12/7/1995	*	93			11
C-7	11/20/1997	*	15			5.9
C-7	6/24/1998	*	3.4			1.5
C-7	12/17/1998	*C	140 J			1UJ
C-7	6/24/1999	*	170			24
C-7	12/2/1999	*	99			<10U
C-7	12/6/2000	*	110			<5U
C-7	6/5/2001	*	<1			<1
C-7	11/29/2001	*	230			35
C-7	12/4/2002	*	210	<5	<5	<5
C-7	6/4/2003	*	125	130	<10	
C-7	12/10/2003	*	200	24	<10	24
C-7	6/9/2004	*	24	<1	<1	<2
C-7	12/1/2004	*	60	2.7	<0.63	2.7
C-7	6/15/2005	*	11.6	<1	<1	<1
C-7	12/7/2005	*	28.1	1.5	<0.28	1.5
C-7	6/7/2006	*	8.3	<1	<1	<1
C-7	12/6/2006	*	39.3	10	<1	10
C-7	6/8/2007	*	4.3	<1 U	<1 U	<1 U
C-7	6/25/2008	*	10.1	1.5	<1 U	1.5

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ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-7	12/4/2008	*	104	17.6	<1 U	17.6
C-7	6/4/2009	*	17.5	<1 U	<1 U	<1 U
C-7	6/8/2010	*	43.2	6.2	<1 U	6.2
C-7	6/15/2011	*	4.4	<1 U	<1 U	<1 U
C-7	6/20/2012	*	4.8	<1 U	<1 U	<1 U
C-7	6/26/2013	*C	36.5	0.67 NJ	<1 U	0.67 J
C-7	6/17/2014	*	6	<1 U	<1 U	<1 U
C-7	6/30/2015	*	1.6	<1 U	<1 U	<1 U
C-7	6/23/2016	*	3.2	<1 U	<1 U	<1 U
C-7	6/1/2017	*	28.8	3.5	<1 U	3.5
C-8	12/7/1995	*	<1			<1
C-8	11/20/1997	*	<1			<1
C-8	6/24/1998	*	<1			<1
C-8	12/16/1998	*	<1			<1
C-8	6/24/1999	*	<1			<1
C-8	12/2/1999	*	<1U			<1U
C-8	12/6/2000	*	<1U			<1U
C-8	6/5/2001	*	<1			<1
C-8	11/29/2001	*	<1		<0.5	<1
C-8	6/4/2002	*	<1			<1
C-8	12/4/2002	*	<1	<0.5	<0.5	<1
C-8	6/4/2003	*	<1	<1	<1	<2
C-8	12/10/2003	*	<1	<1	<1	<2
C-8	6/9/2004	*	<1	<1	<1	<2
C-8	12/2/2004	*	<0.37	<0.34	<0.63	<0.68
C-8	6/15/2005	*	<1	<1	<1	<1
C-8	12/6/2005	*	<0.15	<0.17	<0.28	<0.17
C-8	6/7/2006	*	<1	<1	<1	<1
C-8	12/6/2006	*	<1	<1	<1	<1
C-8	6/8/2007	*	<1 U	<1 U	<1 U	<1 U
C-8	9/12/2007	*	<1 U	<1 U	<1 U	
C-8	12/7/2007	*	<1 U	<1 U	<1 U	<1 U
C-8	3/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-8	6/24/2008	*	<1 U	<1 U	<1 U	<1 U
C-8	9/3/2008	*	<1 U	<1 U	<1 U	<1 U
C-8	12/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-8	3/5/2009	*	<1 U	<1 U	<1 U	<1 U
C-8	6/4/2009	*	<1 U	<1 U	<1 U	<1 U
C-8	9/10/2009	*	<1 U	<1 U	<1 U	<1 U
C-8	12/2/2009	*	<1 U	<1 U	<1 U	<1 U
C-8	3/10/2010	*	<1 U	<1 U	<1 U	<1 U
C-8	6/8/2010	*	<1 U	<1 U	<1 U	<1 U

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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-8	9/9/2010	*	<1 U	<1 U	<1 U	<1 U
C-8	12/8/2010	*	<1 U	<1 U	<1 U	<1 U
C-8	6/15/2011	*	<1 U	<1 U	<1 U	<1 U
C-8	9/14/2011	*	<1 U	<1 U	<1 U	<1 U
C-8	12/16/2011	*	<1 U	<1 U	<1 U	<1 U
C-8	3/21/2012	*	<1 U	<1 U	<1 U	<1 U
C-8	6/19/2012	*	<1 U	<1 U	<1 U	<1 U
C-8	9/12/2012	*	<1 U	<1 U	<1 U	<1 U
C-8	12/5/2012	*	<1 U	<1 U	<1 U	<1 U
C-8	3/12/2013	*	<1 U	<1 U	<1 U	<1 U
C-8	6/27/2013	*	<1 U	<1 U	<1 U	<1 U
C-8	9/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-8	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-8	3/26/2014	*	<1 U	<1 U	<1 U	<1 U
C-8	6/17/2014	*	<1 U	<1 U	<1 U	<1 U
C-8	9/9/2014	*	<1 U	<1 U	<1 U	<1 U
C-8	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
C-8	9/23/2015	*	<1 U	<1 U	<1 U	<1 U
C-8	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
C-8	6/22/2016	*	<1 U	<1 U	<1 U	<1 U
C-8	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
C-8	6/1/2017	*	<1 U	<1 U	<1 U	<1 U
C-8	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-9	6/8/2007	*	<1 U	<1 U	<1 U	<1 U
C-9	9/12/2007	*	<1 U	<1 U	<1 U	
C-9	12/7/2007	*	<1 U	<1 U	<1 U	<1 U
C-9	3/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-9	6/24/2008	*	<1 U	<1 U	<1 U	<1 U
C-9	9/3/2008	*	<1 U	<1 U	<1 U	<1 U
C-9	12/5/2008	*	<1 U	<1 U	<1 U	<1 U
C-9	3/5/2009	*	<1 U	<1 U	<1 U	<1 U
C-9	6/4/2009	*	<1 U	<1 U	<1 U	<1 U
C-9	9/10/2009	*	<1 U	<1 U	<1 U	<1 U
C-9	12/2/2009	*	<1 U	<1 U	<1 U	<1 U
C-9	3/10/2010	*	<1 U	<1 U	<1 U	<1 U
C-9	6/8/2010	*	<1 U	<1 U	<1 U	<1 U
C-9	9/9/2010	*	<1 U	<1 U	<1 U	<1 U
C-9	12/8/2010	*	<1 U	<1 U	<1 U	<1 U
C-9	3/30/2011	*	<1 U	<1 U	<1 U	<1 U
C-9	6/15/2011	*	<1 U	<1 U	<1 U	<1 U
C-9	9/16/2011	*	<1 U	<1 U	<1 U	<1 U
C-9	12/15/2011	*	<1 U	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-9	3/21/2012	*	<1 U	<1 U	<1 U	<1 U
C-9	6/19/2012	*	<1 U	<1 U	<1 U	<1 U
C-9	9/12/2012	*	<1 U	<1 U	<1 U	<1 U
C-9	12/5/2012	*	<1 U	<1 U	<1 U	<1 U
C-9	3/12/2013	*	<1 U	<1 U	<1 U	<1 U
C-9	6/27/2013	*	<1 U	<1 U	<1 U	<1 U
C-9	9/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-9	12/19/2013	*	<1 U	<1 U	<1 U	<1 U
C-9	3/26/2014	*	<1 U	<1 U	<1 U	<1 U
C-9	6/17/2014	*	<1 U	<1 U	<1 U	<1 U
C-9	9/9/2014	*	<1 U	<1 U	<1 U	<1 U
C-9	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
C-9	6/30/2015	*	<1 U	<1 U	<1 U	<1 U
C-9	9/23/2015	*	<1 U	<1 U	<1 U	<1 U
C-9	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
C-9	3/15/2016	*	<1 U	<1 U	<1 U	<1 U
C-9	6/23/2016	*	<1 U	<1 U	<1 U	<1 U
C-9	12/21/2016	*	<1 U	<1 U	<1 U	<1 U
C-9	6/1/2017	*	<1 U	<1 U	<1 U	<1 U
C-9	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
I-1	9/30/1997	*	190			76
I-1	10/28/1997	*	100			57
I-1	11/20/1997	*	180			100
I-1	2/10/1998	*	82		<5	32
I-1	3/17/1998	*	140			49
I-1	9/8/1998	*	127.8			112.6
I-1	12/16/1998	*C	61 J		<2.5	33
I-1	3/3/1999	*	27		<2.5	27
I-1	3/24/1999	*	79		<12	<25
I-1	4/7/1999	*	56			24
I-1	5/26/1999	*	81			59
I-1	6/23/1999	*	44		<10	23
I-1	7/15/1999	*	120			48
I-1	8/24/1999	*	64			24
I-1	9/14/1999	*	270			120
I-1	10/20/1999	*	21			6.2
I-1	11/17/1999	*	55			21
I-1	12/3/1999	*	140			61
I-1	3/7/2000	*	39		<5U	10
I-1	9/13/2000	*	57			13
I-1	10/2/2000	*	53		<2U	14
I-1	1/11/2001	*	35			8.3

TABLE 6
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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-1	6/5/2001	*	36			19
I-1	9/11/2001	*	83			30
I-1	11/30/2001	*	75		<5	24
I-1	6/4/2002	*	47			27
I-1	3/5/2003	*	46	36	<1	36
I-1	6/2/2003	*	34	33	<1	33
I-1	9/9/2003	*	36	22	<1	22
I-1	12/8/2003	*	33	25	<1	25
I-1	12/11/2003	*	42	26	<1	26
I-1	3/2/2004	*	38	22	<1	22
I-1	6/8/2004	*	35	13	<1	13
I-1	9/1/2004	*	43	23	<0.63	23
I-1	12/1/2004	*	52	35	<0.63	35
I-1	3/3/2005	*	70.8	23.3	0.71 J	24
I-1	4/4/2005		77.7	24.7	<1 U	
I-1	6/13/2005	*	105	28	0.47 J	28.5
I-1	7/1/2005		97	24.8		
I-1	8/3/2005		118	32.6		
I-1	9/2/2005	*	97.6	35	<0.28	35
I-1	11/7/2005		101	25.6	<1 U	25.6
I-1	12/6/2005	*	85	20	0.29 J	20.3
I-1	1/4/2006		63.5	14.3	<1 U	14.3
I-1	2/2/2006		58.6	17.2	<1 U	17.2
I-1	3/6/2006	*	52.4	16.6	<0.38	16.6
I-1	4/7/2006		40.9	17.6	<1 U	17.6
I-1	5/4/2006		53	22.8	<1 U	22.8
I-1	6/6/2006	*	69.2	29	<1	29.4
I-1	9/6/2006	*	175	34.4	<1	34.9
I-1	9/7/2006	*	195	40.7	<1	40.7
I-1	11/6/2006		133	28.6	<1 U	28.6
I-1	12/5/2006	*	151	24.7	<1	24.7
I-1	1/8/2007		71.3	17	<1 U	17
I-1	2/2/2007		99.3	24.6	<1 U	25
I-1	3/14/2007	*	84.7	23.5	<1 U	
I-1	4/6/2007		73	17.8	<1 U	17.8
I-1	5/2/2007		70	18.3	<1 U	18.6
I-1	6/6/2007	*	78.3	19.3	<1 U	19.7
I-1	7/10/2007		76.4	19.4	<1 U	19.7
I-1	8/6/2007		115	29.8	<1 U	30.2
I-1	9/4/2007	*	136	34.4	<1 U	35
I-1	10/3/2007		188	28.9	<1 U	29.3
I-1	11/15/2007		134	30.5	<1 U	31.6
I-1	12/4/2007	*	137	27.5	<1 U	27.9

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-1	1/17/2008		116	21.7	<1 U	22.2
I-1	2/13/2008		99.9	24.4	<1 U	
I-1	3/12/2008	*	70.5	21	<1 U	
I-1	4/15/2008		55.8	16.4	<1 U	
I-1	5/7/2008		70.3	18.4	<1 U	
I-1	6/11/2008	*	62.2	20.1	<1 U	
I-1	6/24/2008	*	63.1	20.8	<1 U	21.4
I-1	7/8/2008		67.9	19	<1 U	19.4
I-1	8/1/2008		58.9		<1 U	16.1
I-1	9/3/2008	*	72.9		<1 U	23.6
I-1	10/7/2008		102	33.5	<1 U	
I-1	11/7/2008		131	29.8	<1 U	
I-1	12/3/2008	*	140	31.7	<1 U	32.3
I-1	1/8/2009		89	24.3	<1 U	24.7
I-1	2/12/2009		63.3	15.2	<1 U	15.2
I-1	3/4/2009	*	58.6	18.3	<1 U	18.6
I-1	3/31/2009		54.5	17.2	<1 U	17.5
I-1	5/8/2009		43.8	16.3	<1 U	16.5
I-1	6/10/2009	*	52.8	19	<1 U	19
I-1	7/9/2009		43	16.3	<1 U	16.8
I-1	8/4/2009		43.9	18	<1 U	18.2
I-1	9/10/2009	*	53.4	22.7	<1 U	22.9
I-1	9/11/2009	*	32	13.9	<1 U	13.9
I-1	10/9/2009		49.5	20.9	<1 U	21.1
I-1	11/3/2009		54.5	22.2	<1 U	22.7
I-1	11/30/2009	*	62.5	22.7	<1 U	23.1
I-1	12/3/2009	*	59.9	19.7	<1 U	19.7
I-1	1/8/2010		48.1	16.3	<1 U	16.5
I-1	2/2/2010		48.9	16.4	<1 U	16.6
I-1	3/8/2010	*	43.2	19.8	<1 U	20.2
I-1	4/1/2010		38.7	19.6	<1 U	20
I-1	5/4/2010		35.1	14.1	<1 U	14.4
I-1	6/4/2010	*	33.4	12.8	<1 U	12.8
I-1	7/1/2010		39.9	16	<1U	16.4
I-1	8/9/2010		40.8	14.7	<1U	15
I-1	9/7/2010	*	44	17.9	<1 U	18.1
I-1	10/5/2010		56.1	19.5	<1U	19.9
I-1	11/2/2010		64.4	24.3	<1U	24.7
I-1	12/6/2010	*	50.6	17.2	<1 U	17.2
I-1	1/5/2011		42.7	13.5	0.37 J	13.8
I-1	2/11/2011		37	12.9	<1U	12.9
I-1	3/2/2011	*	38.8	15.4	<1 U	15.4
I-1	4/13/2011		41.5	22.7	<1U	23.1

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-1	5/5/2011		38.6	20.4	<1U	20.8
I-1	6/9/2011	*	27	5		5.7
I-1	6/15/2011	*	37.4	22.3	0.47 J	22.8
I-1	7/7/2011		39.8	23.5	<1U	23.9
I-1	8/2/2011		35.8	22.3	<1 U	22.7
I-1	9/1/2011	*	34.6	21.3	<1 U	21.5
I-1	9/14/2011	*	42.8	22.1	<1 U	22.3
I-1	10/5/2011		42.2	21.2	<0.27 U	21.2
I-1	11/7/2011		59.2	37.8	0.5 J	38.3
I-1	12/14/2011	*	55.6	24	0.33 J	24.3
I-1	1/12/2012		41.2	20.2	<1 U	20.2
I-1	2/13/2012		40.5	22.6	0.3 J	22.9
I-1	3/2/2012	*	41.5	22.2	<1 U	22.6
I-1	4/3/2012		47	24.7	<1 U	24.9
I-1	5/3/2012		41.4	24.1	<1 U	24.4
I-1	6/1/2012	*	42.1	26.2	0.25 J	26.5
I-1	6/21/2012	*	42.9	21.8	0.36 J	22.2
I-1	7/5/2012		50.2		<1 U	27.7
I-1	8/3/2012		69.9	30	0.46 J	30.5
I-1	9/7/2012	*	94.6	27.8	0.25 NJ	28
I-1	9/12/2012	*	93.9	32.3	0.37 NJ	32.7
I-1	10/9/2012		92.9	43.4	<1 U	43.9
I-1	12/3/2012		103	32.6	<1 U	32.8
I-1	12/6/2012	*	86.9	33.2	0.32 J	33.6
I-1	1/4/2013		80.7	30.2	<1 U	30.6
I-1	2/4/2013		60.9	32.6	<1 U	32.9
I-1	3/12/2013		51.6	28.4	0.34 J	28.7
I-1	3/13/2013	*	54.5	32.2	0.31 NJ	32.5
I-1	4/2/2013	*	55.5	24.1	0.31 J	24.4
I-1	5/2/2013		61.8	36.1	<1 U	36.7
I-1	6/5/2013		46.4	35.8	<1 U	36.2
I-1	6/26/2013	*	48.5	34.9	0.71 NJ	35.6
I-1	9/17/2013	*	55.4	36.1	<1 U	36.8
I-1	12/18/2013	*	81.8	38.2	<1 U	38.2
I-1	6/3/2014	*	49.4	23.8	<1 U	24
I-1	9/10/2014	*	49.6	21.9	0.24 U	21.9
I-1	12/9/2014	*	59.9	20.7	0.24 U	20.7
I-1	3/10/2015		35.9	13.4	<1U	13.4
I-1	6/3/2015		40.1	32.4	<1 U	32.6
I-1	9/1/2015	*	52.5	38.6	0.28 J	38.8
I-1	12/9/2015	*	39.5	11.6	0.29 J	11.9
I-1	3/9/2016	*	60.5	33.6	<1 U	33.6
I-1	6/8/2016	*	45.3	27.2	<1 U	27.2

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-1	12/13/2016	*	84.2	26.2	<1 U	26.5
I-1	6/1/2017	*	52.1	20.1	<1 U	20.5
I-1	12/4/2017	*	96.3	33.8	<1.0 U	34.3
I-2	6/12/1997	*	69			23
I-2	9/30/1997	*	220			86
I-2	10/28/1997	*	110			49
I-2	11/20/1997	*	130			63
I-2	2/10/1998	*	70			36
I-2	3/17/1998	*				
I-2	9/8/1998	*	117.2			195.2
I-2	12/16/1998	*	110			<10
I-2	3/3/1999	*	82			38
I-2	4/7/1999	*	120			47
I-2	5/26/1999	*	76			36
I-2	6/23/1999	*	57			35
I-2	7/15/1999	*	190		<10	31
I-2	8/24/1999	*	79			31
I-2	9/14/1999	*	69			24
I-2	10/20/1999	*	68			24
I-2	11/17/1999	*	95			32
I-2	12/3/1999	*	120			53
I-2	3/7/2000	*	150			57
I-2	9/13/2000	*	110			34
I-2	10/2/2000	*	60		<5U	13
I-2	6/5/2001	*	62			25
I-2	9/11/2001	*	75			23
I-2	11/30/2001	*	59			26
I-2	3/5/2003	*	74	56	<2.5	56
I-2	6/2/2003	*	69	36	<2	36
I-2	9/9/2003	*	110	42	<2	42
I-2	12/8/2003	*	73	34	<2	34
I-2	12/11/2003	*	93	45	<2	45
I-2	3/2/2004	*	98	51	<2	51
I-2	6/8/2004	*	71	30	<2	30
I-2	9/1/2004	*	120	50	<1.3	50
I-2	12/1/2004	*	96	33	<1.3	33
I-2	3/3/2005	*	44.2	15.6	0.51 J	16.1
I-2	4/4/2005		42.6	18	<1 U	
I-2	6/13/2005	*	35.7	12.5	<1	12.5
I-2	7/1/2005		20.1	10.6		
I-2	8/3/2005		42.8	15.6		
I-2	9/2/2005	*	73.4	23.4	<0.28	23.4

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-2	11/7/2005		168	40.1	<1 U	40.1
I-2	12/6/2005	*	154	37.6	0.38 J	38
I-2	1/4/2006		141	31.5	<1 U	31.5
I-2	2/2/2006		117	31.2	0.54 J	31.7
I-2	3/6/2006	*	105	29.4	<0.38	29.4
I-2	4/7/2006		61.7	21.7	<1 U	21.7
I-2	5/4/2006		65.6	20	<1 U	20
I-2	6/6/2006	*	54.3	17.4	<1	17.4
I-2	9/6/2006	*	65.1	17	<1	17
I-2	9/7/2006	*	65.1	19.4	<1	19.4
I-2	11/6/2006		45.8	18.7	<1 U	18.7
I-2	12/5/2006	*	53.4	19.6	<1	19.6
I-2	1/8/2007		33.4	12.1	<1 U	12.1
I-2	2/2/2007		33.3	14.9	<1 U	14.9
I-2	3/14/2007	*	36	15.3	<1 U	
I-2	4/6/2007		28.5	10.7	<1 U	10.7
I-2	5/2/2007		27.5	10.2	<1 U	10.2
I-2	6/6/2007	*	25.5	9.9	<1 U	9.9
I-2	7/10/2007		<1 U	<1 U	<1 U	<1 U
I-2	8/6/2007		31.3	11.2	<1 U	11.2
I-2	9/4/2007	*	33.2	10.6	<1 U	10.6
I-2	10/3/2007		40.3	8.9	<1 U	8.9
I-2	11/15/2007		31.2	12.2	<1 U	12.4
I-2	12/4/2007	*	26.4	12.5	<1 U	12.5
I-2	1/17/2008		24.7	11.7	<1 U	11.7
I-2	2/13/2008		19.5	14.1	<1 U	
I-2	3/12/2008	*	14.7	13.4	<1 U	
I-2	4/15/2008		13.4	8.2	<1 U	
I-2	5/7/2008		15	7.8	<1 U	
I-2	6/11/2008	*	13.4	11.4	<1 U	
I-2	6/24/2008	*	15.4	10.5	<1 U	10.5
I-2	7/8/2008		16.1	11	<1 U	11
I-2	8/1/2008		15		<1 U	6.9
I-2	9/3/2008	*	18.1		<1 U	8.6
I-2	10/7/2008		19.8	13.5	<1 U	
I-2	11/7/2008		24.2	9.7	<1 U	
I-2	12/3/2008	*	27.6	13.1	<1 U	13.1
I-2	1/8/2009		19.1	13.6	<1 U	13.6
I-2	2/12/2009		17.5	10.7	<1 U	10.7
I-2	3/4/2009	*	14.5	10.3	<1 U	10.3
I-2	3/31/2009		13.3	9	<1 U	9
I-2	5/8/2009		10.6	7	<1 U	7
I-2	6/10/2009	*	12.9	9.4	<1 U	9.4

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-2	7/9/2009		11.8	8.8	<1 U	8.8
I-2	8/4/2009		14.6	11.9	<1 U	11.9
I-2	9/10/2009	*	20.7	13.7	<1 U	13.7
I-2	9/11/2009	*	19.1	11.9	<1 U	11.9
I-2	10/9/2009		20.7	14.2	<1 U	14.2
I-2	11/3/2009		21.8	17.9	<1 U	18.4
I-2	11/30/2009	*	29.2	20.4	<1 U	20.8
I-2	12/3/2009	*	26.3	19.1	<1 U	19.1
I-2	1/8/2010		29.6	24.3	<1 U	24.6
I-2	2/2/2010		31.1	23	<1 U	23.3
I-2	3/8/2010	*	28	18.8	<1 U	19.1
I-2	4/1/2010		22.3	18.7	<1 U	18.9
I-2	5/4/2010		18.2	11.9	<1 U	12.1
I-2	6/4/2010	*	16.6	11.8	<1 U	11.8
I-2	7/1/2010		22.2	14.9	<1U	15.2
I-2	8/9/2010		24.7	14.3	<1U	14.5
I-2	9/7/2010	*	25.5	17.1	<1 U	17.1
I-2	10/5/2010		26.8	17.8	<1U	17.8
I-2	11/2/2010		27.1	16.2	<1U	16.2
I-2	12/6/2010	*	28.5	18.1	<1 U	18.1
I-2	1/5/2011		29.6	19.6	<1U	19.6
I-2	2/11/2011		29.2	18.5	<1U	18.5
I-2	3/2/2011	*	28.8	23	<1 U	23
I-2	4/13/2011		22.5	16.2	<1U	16.2
I-2	5/5/2011		20.1	13	<1U	13
I-2	6/15/2011	*	23.6	11.2	0.39 J	11.6
I-2	7/7/2011		22.3	10.7	<1U	10.8
I-2	8/2/2011		17.9	9.6	<1 U	9.6
I-2	9/1/2011	*	16.6	8	<1 U	8
I-2	9/14/2011	*	20.6	8.8	<1 U	8.8
I-2	10/5/2011		22.1	10	<0.27 U	10
I-2	11/7/2011		27.1	14.5	<1 U	14.5
I-2	12/14/2011	*	17.5	10.7	<1 U	10.7
I-2	1/12/2012		15.9	9.4	<1 U	9.4
I-2	2/13/2012		16.2	11.5	<1 U	11.5
I-2	3/2/2012	*	15.7	10.7	<1 U	10.7
I-2	4/3/2012		16.6	12.8	<1 U	12.8
I-2	5/3/2012		15.1	12.1	<1 U	12.1
I-2	6/1/2012	*	14.7	10.1	<1 U	10.1
I-2	6/21/2012	*	15.4	8.6	<1 U	8.6
I-2	7/5/2012		13.7		<1 U	7.8
I-2	8/3/2012		21.2	13.4	<1 U	13.4
I-2	9/7/2012	*	29.1	11.4	<1 U	11.4

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-2	9/11/2012	*	31.5	12.6	<1 U	12.6 J
I-2	10/9/2012		29.1	13.6	<1 U	13.6
I-2	12/3/2012		27.5	11.9	<1 U	11.9
I-2	12/6/2012	*	26.3	12.3	<1 U	12.3
I-2	1/4/2013		23.4	10.3	<1 U	10.3
I-2	2/4/2013		19.4	11.1	<1 U	11.1
I-2	3/12/2013		15.1	9.2	<1 U	9.2
I-2	3/13/2013	*	14.7	8.2	<1 U	8.2
I-2	4/2/2013		15.4	6.7	<1 U	6.7
I-2	5/2/2013		16.3	9.9	<1 U	9.9
I-2	6/5/2013		14.9	9.6	<1 U	9.6
I-2	6/26/2013	*	17.3	11.7	0.32 NJ	12
I-2	9/17/2013	*	16.7	9.7	<1 U	9.7
I-2	12/18/2013	*	22	11.7	<1 U	11.7
I-2	6/3/2014	*	14.4	6.2	<1 U	6.2
I-2	9/10/2014	*	14.3	5.8	0.24 U	5.8
I-2	12/9/2014	*	24.7	9.6	0.24 U	9.6
I-2	3/10/2015		47	19	<1U	19
I-2	6/3/2015		18.8	7.9	<1 U	7.9
I-2	9/1/2015	*	24.2	10.5	<1 U	10.5
I-2	12/8/2015	*	33.4	11.9		11.9
I-2	3/9/2016	*	18.7	8.8	<1 U	8.8
I-2	6/8/2016	*	14.2	6.0	<1 U	6.0
I-2	12/13/2016	*	24.7	8.0	<1 U	8.0
I-2	6/1/2017	*	11.4	4.8	<1 U	4.8
I-2	12/4/2017	*	19.2	8.3	<1.0 U	8.3
I-3	6/12/1997	*	25			16
I-3	9/30/1997	*	41		44	15
I-3	10/28/1997	*	50			16
I-3	11/20/1997	*	38			16
I-3	2/10/1998	*	44			18
I-3	3/17/1998	*				
I-3	9/8/1998	*	112.4			69.4
I-3	12/16/1998	*	92			32
I-3	3/3/1999	*	21			16
I-3	3/24/1999	*	25			13
I-3	4/7/1999	*	34			17
I-3	6/23/1999	*	32			8.8
I-3	7/15/1999	*	37			13
I-3	10/20/1999	*	28			3.4
I-3	11/17/1999	*	25			4.2
I-3	12/3/1999	*	55		<2U	17

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-3	3/7/2000	*	29			16
I-3	10/2/2000	*	25			4.4
I-3	11/30/2000	*	40			23
I-3	12/7/2000	*	41		<2U	22
I-3	1/11/2001	*	57			27
I-3	6/5/2001	*	21			6.1
I-3	9/11/2001	*	34			7.5
I-3	11/30/2001	*	31			4.5
I-3	6/4/2002	*	24			10
I-3	3/5/2003	*	24	9.1	<1	9.1
I-3	6/2/2003	*	19	5.1	<1	5.1
I-3	9/9/2003	*	27	10	<1	10
I-3	12/8/2003	*	23	11	<1	11
I-3	12/11/2003	*	28	13	<1	13
I-3	3/2/2004	*	18	13	<1	13
I-3	6/8/2004	*	13	5.5	<1	5.5
I-3	9/1/2004	*	22	8.4	<1.6	8.4
I-3	12/1/2004	*	17	4	<0.63	4
I-3	3/3/2005	*	16.4	3.4	<1	3.4
I-3	4/4/2005		16.5	3.1	<1 U	
I-3	6/13/2005	*	15.1	2.6	<1	2.6
I-3	7/1/2005		16.5	2.5		
I-3	8/3/2005		17.1	1.9		
I-3	9/2/2005	*	3.5	1.6	<0.28	1.6
I-3	11/7/2005		27.9	6.7	<1 U	6.7
I-3	12/6/2005	*	30.4	9.1	<0.28	9.1
I-3	1/4/2006		26.3	7.2	<1 U	7.2
I-3	2/2/2006		24.2	7.7	<1 U	7.7
I-3	3/6/2006	*	19.9	5.8	<0.38	5.8
I-3	4/7/2006		14.9	4.9	<1 U	4.9
I-3	5/4/2006		17.9	4.7	<1 U	4.7
I-3	6/6/2006	*	15.5	4.9	<1	4.9
I-3	9/6/2006	*	22	4.9	<1	4.9
I-3	9/7/2006	*	35.9	9.8	<1	9.8
I-3	11/6/2006		22.6	4.6	<1 U	4.6
I-3	12/5/2006	*	25.8	4.5	<1	4.5
I-3	1/8/2007		16	3.1	<1 U	3.1
I-3	2/2/2007		19.2	3.9	<1 U	3.9
I-3	3/14/2007	*	18	4.9	<1 U	
I-3	4/6/2007		13.3	2.4	<1 U	2.4
I-3	5/2/2007		12.9	2.8	<1 U	2.8
I-3	6/6/2007	*	14.5	2.7	<1 U	2.7
I-3	7/10/2007		15.6	2.8	<1 U	2.8

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-3	8/6/2007		16.3	3.1	<1 U	3.1
I-3	9/4/2007	*	16.4	3.1	<1 U	3.1
I-3	10/3/2007		18.4	2.2	<1 U	2.2
I-3	11/15/2007		17.8	3.1	<1 U	3.1
I-3	12/4/2007	*	16.4	2.9	<1 U	2.9
I-3	1/17/2008		21.4	2.8	<1 U	2.8
I-3	2/13/2008		20.7	3.5	<1 U	
I-3	3/12/2008	*	18	2.9	<1 U	
I-3	4/15/2008		10.9	2.2	<1 U	
I-3	5/7/2008		12.9	2.3	<1 U	
I-3	6/11/2008	*	11.8	1.8	<1 U	
I-3	6/24/2008	*	12.5	2	<1 U	2
I-3	7/8/2008		14.1	2.3	<1 U	2.3
I-3	8/1/2008		11		<1 U	2
I-3	9/3/2008	*	12.8		<1 U	2.1
I-3	10/7/2008		20.1	13.8	<1 U	
I-3	11/7/2008		13.5	1.5	<1 U	
I-3	12/3/2008	*	15.1	2.1	<1 U	2.1
I-3	1/8/2009		15.7	2.6	<1 U	2.6
I-3	2/12/2009		15.3	3	<1 U	3
I-3	3/4/2009	*	14.6	2.9	<1 U	2.9
I-3	3/31/2009		14.7	3.1	<1 U	3.1
I-3	5/8/2009		13.1	3.3	<1 U	3.3
I-3	6/10/2009	*	14.6	2.7	<1 U	2.7
I-3	7/9/2009		12	2.6	<1 U	2.6
I-3	8/4/2009		13.4	3.1	<1 U	3.1
I-3	9/10/2009	*	14	3.7	<1 U	3.7
I-3	9/11/2009	*	14.1	3.6	<1 U	3.6
I-3	10/9/2009		14.1	4.4	<1 U	4.4
I-3	11/3/2009		14.9	4.6	<1 U	4.6
I-3	11/30/2009	*	17.1	5.3	<1 U	5.3
I-3	12/3/2009	*	15.5	4.4	<1 U	4.4
I-3	1/8/2010		15.5	6.5	<1 U	6.5
I-3	2/2/2010		14	6.3	<1 U	6.3
I-3	3/8/2010	*	12.4	4.6	<1 U	4.6
I-3	4/1/2010		13.1	4.8	<1 U	4.8
I-3	5/4/2010		10.6	3.1	<1 U	3.1
I-3	6/4/2010	*	10.2	2.5	<1 U	2.5
I-3	7/1/2010		10.6	2.8	<1U	2.8
I-3	8/9/2010		10.1	3.1	<1U	3.1
I-3	9/7/2010	*	10.5	3.1	<1 U	3.1
I-3	10/5/2010		11.1	2.6	<1U	2.6
I-3	11/2/2010		7.4	1.2	<1U	1.2

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-3	12/6/2010	*	13.8	3.9	<1 U	3.9
I-3	1/5/2011		12.8	3.5	<1U	3.5
I-3	2/11/2011		11.9	3.5	<1U	3.5
I-3	3/2/2011	*	12.6	4.2	<1 U	4.2
I-3	4/13/2011		9.3	3	<1U	3
I-3	5/5/2011		9	2.7	<1U	2.7
I-3	6/9/2011	*	9.7	3.1		3.1
I-3	6/15/2011	*	9.2	2.7	<1 U	2.7
I-3	7/7/2011		10	2.5	<1U	2.5
I-3	8/2/2011		10	2.4	<1 U	2.4
I-3	9/1/2011	*	8.9	2.1	<1 U	2.1
I-3	9/14/2011	*	11.1	2.2	<1 U	2.2
I-3	10/5/2011		11.3	2.2	<1 U	2.2
I-3	11/7/2011		13.7	3.2	<1 U	3.2
I-3	12/14/2011	*	10.8	1.8	<1 U	1.8
I-3	1/12/2012		11.6	2.4	<1 U	2.4
I-3	2/13/2012		10.8	2.9	<1 U	2.9
I-3	3/2/2012	*	10.7	3.1	<1 U	3.1
I-3	4/3/2012		11.3	2.7	<1 U	2.7
I-3	5/3/2012		10.2	2.3	<1 U	2.3
I-3	6/1/2012	*	9.2	1.9	<1 U	1.9
I-3	6/21/2012	*	11.5	2.2	<1 U	2.2
I-3	7/5/2012		9		<1 U	1.3
I-3	8/3/2012		8.9	1.9	<1 U	1.9
I-3	9/7/2012	*	12	1.7	<1 U	1.7
I-3	9/11/2012	*	12.2	2	<1 U	2
I-3	10/9/2012		13.1	3	<1 U	3
I-3	12/3/2012		13.9	2.2	<1 U	2.2
I-3	12/6/2012	*	14.1	2.3	<1 U	2.3
I-3	1/4/2013		14.2	2.2	<1 U	2.2
I-3	2/4/2013		12.9	2.5	<1 U	2.5
I-3	3/12/2013		11.8	2.2	<1 U	2.2
I-3	3/13/2013	*	11.8	2.6	<1 U	2.6
I-3	4/2/2013		11.4	1.6	<1 U	1.6
I-3	5/2/2013		11.2	1.7	<1 U	1.7
I-3	6/5/2013		11	1.9	<1 U	1.9
I-3	6/26/2013	*	13.1	2.2	<1 U	2.2
I-3	9/17/2013	*	9.4	2.1	<1 U	2.1
I-3	12/18/2013	*	11.5	2	<1 U	2
I-3	6/3/2014	*	8.6	1.3	<1 U	1.3
I-3	9/10/2014	*	8.9	1.3	0.24 U	1.3
I-3	12/9/2014	*	9.1	1.4	0.24 U	1.4
I-3	3/10/2015		9.7	2.2	<1U	2.2

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-3	6/3/2015		7	1.6	<1 U	1.6
I-3	9/1/2015	*	7.8	1.7	<1 U	1.7
I-3	12/8/2015	*	8.4	1.8		1.8
I-3	3/9/2016	*	8.1	1.5	<1 U	1.5
I-3	6/8/2016	*	6.6	1.1	<1 U	1.1
I-3	12/13/2016	*	12.3	1.6	<1 U	1.6
I-3	6/1/2017	*	8.5	1.1	<1 U	1.1
I-3	12/4/2017	*	9.6	<1.0 U	<1.0 U	<1.0 U
I-4	6/12/1997	*	540			110
I-4	9/30/1997	*	1100			220
I-4	10/28/1997	*	920			110
I-4	11/20/1997	*	760			<100
I-4	2/10/1998	*	690			120
I-4	3/17/1998	*				
I-4	9/8/1998	*	1577.1			886.1
I-4	12/16/1998	*	680			150
I-4	3/3/1999	*	990			320
I-4	3/24/1999	*	730			160
I-4	4/7/1999	*	1300			340
I-4	5/26/1999	*	150			72
I-4	8/24/1999	*	720			170
I-4	9/14/1999	*	430			87
I-4	10/20/1999	*	550			110
I-4	11/17/1999	*	720			150
I-4	12/3/1999	*	570		<20U	140
I-4	3/7/2000	*	440			120
I-4	10/2/2000	*	430			66
I-4	11/30/2000	*	480			140
I-4	12/7/2000	*	470			160
I-4	1/11/2001	*	450			130
I-4	6/5/2001	*	590		<20	150
I-4	9/11/2001	*	540			160
I-4	11/30/2001	*	340			97
I-4	6/4/2002	*	650			190
I-4	3/5/2003	*	370	140	<20	140
I-4	6/2/2003	*	640	200	<20	200
I-4	9/9/2003	*	520	140	<20	140
I-4	12/8/2003	*	510	190	<20	190
I-4	12/11/2003	*	640	190	<20	190
I-4	3/2/2004	*	620	200	<20	200
I-4	6/8/2004	*	430	180	<20	180
I-4	9/1/2004	*	540	200	<13	200

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-4	12/1/2004	*	380	140	<13	140
I-4	3/3/2005	*	315	84.1	1.7 J	85.8
I-4	4/4/2005		416	123	4.7	
I-4	6/13/2005	*	486	85.3	1.2	86.6
I-4	7/1/2005		448	131		
I-4	8/3/2005		537	111		
I-4	9/2/2005	*	359	111	<0.7	111
I-4	11/7/2005		412	115	1.4 J	117
I-4	12/6/2005	*	497	129	<0.7	129
I-4	1/4/2006		548	128	0.82 J	129
I-4	2/2/2006		510	138	1.4	140
I-4	3/6/2006	*	574	127	8.3	136
I-4	4/7/2006		288	115	<1 U	116
I-4	5/4/2006		400	108	2.2	111
I-4	6/6/2006	*	298	89.8	1.1	90.9
I-4	9/6/2006	*	395	95.9	1.6	97.5
I-4	9/7/2006	*	384	116	<1	117
I-4	11/6/2006		300	75.1	<2 U	76.6
I-4	12/5/2006	*	403	118	1.6	119
I-4	1/8/2007		410	102	<2.5 U	102
I-4	2/2/2007		359	93.8	1.5	95.3
I-4	3/14/2007	*	332	105	2.4	
I-4	4/6/2007		266	72.1	1.3	73.4
I-4	5/2/2007		267	78.8	<2 U	79.7
I-4	6/7/2007	*	323	81.2	3.1	84.2
I-4	7/10/2007		372	92.9	2.3	95.3
I-4	8/6/2007		403	117	2.1	119
I-4	9/4/2007	*	347	74.9	<2.5 U	74.9
I-4	10/3/2007		507	98.5	4.6	103
I-4	11/15/2007		437	86.1	1.8	87.9
I-4	12/4/2007	*	379	73.3	5.4	78.7
I-4	1/17/2008		503	100	2.6	103
I-4	2/13/2008		482	101	<2.5 U	
I-4	3/12/2008	*	241	131	1.7	
I-4	4/15/2008		198	86.5	1.5	
I-4	5/7/2008		286	101	1.9	
I-4	6/11/2008	*	250	114	2	
I-4	6/24/2008	*	271	106	2.3	108
I-4	7/8/2008		251	95.7	3.1	98.7
I-4	8/1/2008		260		1.4	77.9
I-4	9/3/2008	*	295		1.3	97.5
I-4	10/7/2008		230	92.7	1.4	
I-4	11/7/2008		291	98.5	1.7	

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HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-4	12/3/2008	*	268	99.1	1.8	101
I-4	1/8/2009		251	104	1.6	106
I-4	2/12/2009		291	110	1.4	111
I-4	3/4/2009	*	309	106	1.4	107
I-4	3/31/2009		287	111	1.9	113
I-4	5/8/2009		31.5	10.2	<1 U	11
I-4	6/10/2009	*	212	150	2.5	152
I-4	7/9/2009		244	102	1.7	104
I-4	8/4/2009		206	101	1.8	102
I-4	9/10/2009	*	162	121	15.8	136
I-4	9/11/2009	*	42.5	15.4	2.6	18.1
I-4	10/9/2009		155	123	1.5	125
I-4	11/3/2009		233	122	2.9	125
I-4	11/30/2009	*	266	117	2	119
I-4	12/3/2009	*	273	103	1.9	105
I-4	1/8/2010		255	120	2.3	122
I-4	2/2/2010		229	126	2.3	128
I-4	3/8/2010	*	195	117	2.6	120
I-4	4/1/2010		214	117	2.1	119
I-4	5/4/2010		212	90.7	1.8	92.5
I-4	6/4/2010	*	216	87.4	3.8	91.3
I-4	7/1/2010		220	97	2.2	99.1
I-4	8/9/2010		233	92.3	2.8	95.1
I-4	9/7/2010	*	236	100	3.2	104
I-4	10/5/2010		296	104	1.6	106
I-4	11/2/2010		64.3	27.8	<1U	28.1
I-4	12/7/2010	*	260	133	3.6	136
I-4	1/5/2011		293	106	1.2	107
I-4	2/11/2011		355	158	4	162
I-4	3/2/2011	*	378	156	2.7	159
I-4	4/13/2011		346	131	2.4	134
I-4	5/5/2011		331	114	2.2	116
I-4	6/9/2011	*	262	132		134
I-4	6/15/2011	*	272	131	3.1	134
I-4	7/7/2011		383	159	2.6	161
I-4	8/2/2011		359	142	2.7	145
I-4	9/1/2011	*	276	108	4	112
I-4	9/14/2011	*	281	131	3	134
I-4	10/5/2011		312	142	1.1	143
I-4	11/7/2011		329	156	2.8	158
I-4	12/14/2011	*	224	94.7	0.99 J	95.7
I-4	1/12/2012		212	105	1.6	107
I-4	2/13/2012		245	140	1.5	141

TABLE 6
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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
I-4	3/2/2012	*	264	116	1.7	117
I-4	4/3/2012		261	99.6	1.2	101
I-4	5/3/2012		345	136	2.7	138
I-4	6/1/2012	*	356	126	1.2	128
I-4	6/21/2012	*	383	127	3.3	131
I-4	7/5/2012		415		<1 U	95.5
I-4	8/3/2012		359	133	1.2	134
I-4	9/7/2012	*	365	89.8	0.59 NJ	90.4
I-4	9/11/2012	*	379	96.9	1.1 J	98
I-4	10/9/2012		386	94.6	<1 U	95.5
I-4	12/3/2012		342	111	5.1	116
I-4	12/6/2012	*	383	139	1.4	140
I-4	1/4/2013		449	79.4	9.8	89.2
I-4	2/4/2013		631	86	1.8	87.9
I-4	3/12/2013		307	94.3	1.3	95.6
I-4	3/13/2013	*	417	123	1.1	125
I-4	4/2/2013		398	136	1.5	137
I-4	5/2/2013		339	87.6	1.4	89
I-4	6/5/2013		249	106	1.4	107
I-4	6/26/2013	*	312 J	126	1.8	128
I-4	9/17/2013	*	258	110	3.3	113
I-4	6/3/2014	*	244	102	<2 U	103
I-4	9/10/2014	*	226	96	1.4	97.3
I-4	12/9/2014	*	233	99.6	1.1	101
I-4	3/10/2015		243	53.5	1.4	55
I-4	6/3/2015		260	140	<1 U	141
I-4	9/1/2015	*	312	137	0.96 J	138
I-4	12/8/2015	*	251	116	0.83 J	117
I-4	3/9/2016	*	176	82.3	<1 U	82.3
I-4	6/8/2016	*	184	91.3	<1 U	92
I-4	12/13/2016	*	282	127	1.5	128
I-4	6/1/2017	*	175	83.3	3.6	86.9
I-4	12/4/2017	*	196	103	1.1	104
S-2DB	3/14/2007	*	21.3	<1 U	<1 U	
S-2DB	12/3/2008	*	18	<1 U	<1 U	<1 U
S-2DB	3/3/2009	*	19.5	<1 U	<1 U	<1 U
S-2DB	6/2/2009	*	16	<1 U	<1 U	<1 U
S-2DB	9/9/2009	*	15.2	<1 U	<1 U	<1 U
S-2DB	12/4/2009	*	28.2	<1 U	<1 U	<1 U
S-2DB	3/9/2010	*	57	<1 U	<1 U	<1 U
S-2DB	6/9/2010	*	32	0.38 J	<1 U	0.38 J
S-2DB	9/8/2010	*	27.4	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
S-2DB	12/9/2010	*	23.8	0.24 J	<1 U	0.24 J
S-2DB	3/1/2011	*	9.9	<1 U	<1 U	<1 U
S-2DB	6/16/2011	*	25.7	0.48 J	<1 U	0.48 J
S-2DB	9/16/2011	*	0.51 J	<1 U	<1 U	<1 U
S-2DB	3/22/2012	*	16.3	<1 U	<1 U	<1 U
S-2DB	9/11/2012	*	24.5	0.23 NJ	<1 U	0.23 NJ
S-2DB	12/5/2012	*	22.2	0.24 J	<1 U	0.24 J
S-2DB	3/12/2013	*	15	0.3 NJ	<1 U	0.3 J
S-2DB	6/27/2013	*	10.8	0.29 NJ	<1 U	0.29 J
S-2DB	9/17/2013	*	14.5	<1 U	<1 U	<1 U
S-2DB	12/17/2013	*	20.5	<1 U	<1 U	<1 U
S-2DB	3/26/2014	*	13.5	<1 U	<1 U	<1 U
S-2DB	6/18/2014	*C	7.6	0.46 NJ	<1 U	0.46 NJ
S-2DB	9/9/2014	*	8.4	<1 U	<1 U	<1 U
S-2DB	12/9/2014	*	11.6	<1 U	<1 U	<1 U
S-2DB	3/19/2015	*C	26.4 J	0.22 NJ	<1 U	0.22 NJ
S-2DB	7/23/2015	*	3.8	<1 U	<1 U	<1 U
S-2DB	9/23/2015	*	4.5	<1 U	<1 U	<1 U
S-2DB	12/15/2015	*	4	<1 U	<1 U	<1 U
S-2DB	3/15/2016	*C	7.5	0.26 NJ	<1 U	0.26 NJ
S-2DB	6/22/2016	*	77.2	2.2	<1 U	2.2
S-2DB	12/21/2016	*	6.4	<1 U	<1 U	<1 U
S-2DB	6/21/2017	*	5.1	<1 U	<1 U	<1 U
S-2DB	1/9/2018	*	2.7	<1.0 U	<1.0 U	<1.0 U
SM-1	9/10/1996	*	1700		<1	<250
SM-1	10/29/1996	*	1400			<250
SM-1	9/3/1997	*	1400			100
SM-1	3/17/1998	*				
SM-1	6/24/1998	*	850			81
SM-1	9/10/1998	*	1800			<500
SM-1	12/16/1998	*	1100			<100
SM-1	3/23/1999	*	1400			<500
SM-1	6/23/1999	*	1800			<100
SM-1	9/14/1999	*	1400			<100U
SM-1	12/2/1999	*	1600			<100U
SM-1	3/7/2000	*	870			<100U
SM-1	9/13/2000	*	2400			<100U
SM-1	12/6/2000	*	840			<20U
SM-1	3/13/2001	*	480			<20U
SM-1	6/5/2001	*	170			<20
SM-1	9/11/2001	*	190			<20
SM-1	11/29/2001	*	410			<20

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
SM-1	9/5/2002	*	110			<5
SM-1	12/5/2002	*	330	<10	<10	<10
SM-1	3/5/2003	*	200	<5	<5	<10
SM-1	6/3/2003	*	220	<5	<5	<10
SM-1	9/9/2003	*	320	<10	<10	<20
SM-1	12/11/2003	*	240	<10	<10	<20
SM-1	3/2/2004	*	210	18	<10	18
SM-1	6/9/2004	*	590	22	<10	22
SM-1	9/1/2004	*	700	<3.4	<6.3	<6.8
SM-1	12/2/2004	*	350	<3.4	<6.3	<6.8
SM-1	3/3/2005	*	239	1.6 J	<1	1.6 J
SM-1	6/13/2005	*	254	1.5	<1	1.5
SM-1	9/2/2005	*	362	1.4	<0.7	1.4
SM-1	12/6/2005	*	340	0.92 J	<0.56	0.92 J
SM-1	3/7/2006	*	464	4.3	<0.38	4.3
SM-1	6/6/2006	*	563	1.9	<1	1.9
SM-1	9/6/2006	*	943	<2	<2	<2
SM-1	12/5/2006	*	967	<2	<2	<2
SM-1	6/6/2007	*	874	<1 U	<1 U	<1 U
SM-1	12/6/2007	*	740	<5 U	<5 U	<5 U
SM-1	6/24/2008	*	450	<1 U	<1 U	<1 U
SM-1	9/3/2008	*	224	<1 U	<1 U	<1 U
SM-1	12/2/2008	*	204	<1 U	<1 U	<1 U
SM-1	6/2/2009	*	67.1	<1 U	<1 U	<1 U
SM-1	12/3/2009	*	108	1.1	<1 U	1.1
SM-1	6/2/2010	*	167	17.3	<1 U	17.3
SM-1	12/10/2010	*	163	6.7	<1 U	6.7
SM-1	6/16/2011	*	71.8	5.6	0.7 J	6.3
SM-1	12/13/2011	*	79.5	2.2	<1 U	2.2
SM-1	6/22/2012	*	177	60.8	0.92 J	61.7
SM-1	12/4/2012	*	569	27.1	0.29 J	27.4
SM-1	6/25/2013	*	300	37.3	0.84 NJ	38.1
SM-1	12/18/2013	*	272	1.1	<1 U	1.1
SM-1	6/19/2014	*	79.6	1.7	<1 U	1.7
SM-1	12/9/2014	*C	59.8 J	<1 U	<1 U	<1 U
SM-1	7/2/2015	*	56.5	4	<1 U	4
SM-1	12/16/2015	*C	75.5	0.42 NJ	<1 U	0.42 NJ
SM-1	6/21/2016	*	76.5	3.1	<1 U	3.1
SM-1	12/21/2016	*	78.4	<1 U	<1 U	<1 U
SM-1	6/1/2017	*	98.3	1.1	<1 U	1.1
SM-1	12/5/2017	*	68.4	<1.0 U	<1.0 U	<1.0 U
SM-2	9/10/1996	*	1500		<50	370

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
SM-2	10/29/1996	*	980			360
SM-2	9/3/1997	*	1500		<50	260
SM-2	11/18/1997	*	160			16
SM-2	3/17/1998	*				
SM-2	6/24/1998	*	1900			470
SM-2	9/10/1998	*	1800		<120	<250
SM-2	12/16/1998	*	1100		<50	150
SM-2	3/23/1999	*	1200		<250	<500
SM-2	6/23/1999	*	1600			110
SM-2	9/14/1999	*	1400			<100U
SM-2	12/2/1999	*	840			<100U
SM-2	3/7/2000	*	1500			210
SM-2	9/13/2000	*	1100			<100U
SM-2	12/6/2000	*	1100			130
SM-2	3/13/2001	*	970			52
SM-2	6/5/2001	*C	620			68
SM-2	9/11/2001	*	1500			63
SM-2	11/29/2001	*	1200			31
SM-2	6/4/2002	*	360			17
SM-2	9/5/2002	*	790			21
SM-2	12/5/2002	*	360	<5	<5	<5
SM-2	6/3/2003	*	530	<25	<25	<50
SM-2	9/9/2003	*C	750	180	<20	180
SM-2	9/9/2003	*C	360	120	<20	120
SM-2	12/11/2003	*	790	240	<20	240
SM-2	3/2/2004	*	870	290	<20	290
SM-2	6/9/2004	*	1100	340	<20	340
SM-2	9/1/2004	*	1200	270	<13	270
SM-2	12/1/2004	*	760	190	<13	190
SM-2	3/3/2005	*	1220	118	3.7	122
SM-2	6/13/2005	*	1900	120	15.4	135
SM-2	9/2/2005	*	1600	104	<2.8	104
SM-2	12/6/2005	*	1160	113	<2.8	113
SM-2	3/7/2006	*	1350	163	18.3	181
SM-2	6/7/2006	*	1400	140	<10	140
SM-2	9/6/2006	*	1360	80.9	3.7	84.6
SM-2	12/5/2006	*	1710	65.8	<10	65.8
SM-2	6/6/2007	*	1540	44.4	<10 U	44.4
SM-2	12/6/2007	*	1660	11.7	<5 U	11.7
SM-2	6/24/2008	*	1280	11.1	<1 U	11.6
SM-2	12/2/2008	*C	989 J	6.5 J	<5 UJ	6.5 J
SM-2	6/2/2009	*	1260	126	2.8	129
SM-2	12/2/2009	*	1190	198	<10 U	198

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
SM-2	6/2/2010	*	906	206	2.3	208
SM-2	12/10/2010	*	991	138	4.9 J	143
SM-2	6/16/2011	*	574	210	5.6	219
SM-2	12/13/2011	*	712	196	2.1	198
SM-2	6/22/2012	*	907	173	3.1 J	176
SM-2	12/4/2012	*	1240	189	3	192
SM-2	6/25/2013	*	947	121	3.2	124
SM-2	12/18/2013	*	667	37.4	<5 U	37.4
SM-2	6/19/2014	*C	326	57.4	0.43 NJ	57.8
SM-2	12/9/2014	*	394	50.6	<1 U	51.2
SM-2	7/2/2015	*C	570	<1	<1 NJ	72
SM-2	12/16/2015	*C	449	39.5	0.43 NJ	39.9
SM-2	6/21/2016	*	571	57.8	0.54 NJ	58.3
SM-2	12/21/2016	*C	534 J	56.4	<1 U	56.8
SM-2	6/1/2017	*	573	40.1	<1 U	40.9
SM-2	12/5/2017	*	579	24.3	<4.0 U	24.3
SM-3	9/11/1996	*	610		<1	650
SM-3	10/29/1996	*	830			760
SM-3	9/3/1997	*	1600		<50	910
SM-3	11/18/1997	*	600			810
SM-3	3/17/1998	*	1600			700
SM-3	6/24/1998	*	1400			480
SM-3	9/10/1998	*	1100			970
SM-3	12/16/1998	*	<1			<1
SM-3	3/23/1999	*	1100			660
SM-3	6/23/1999	*	1700			740
SM-3	9/14/1999	*	1000			770
SM-3	12/2/1999	*	940			640
SM-3	3/7/2000	*	920			220
SM-3	9/13/2000	*	330			160
SM-3	12/6/2000	*	990			400
SM-3	3/13/2001	*	990			520
SM-3	6/5/2001	*	180			51
SM-3	9/11/2001	*	1200			520
SM-3	11/29/2001	*	220			32
SM-3	9/5/2002	*C	900		<20	340
SM-3	12/5/2002	*	1200	550	<20	550
SM-3	6/3/2003	*	600	210	<10	210
SM-3	12/11/2003	*	520	180	<10	180
SM-3	3/2/2004	*	690	200	<10	200
SM-3	6/9/2004	*	680	200	<10	200
SM-3	9/1/2004	*	140	64	<6.3	64

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
SM-3	12/1/2004	*	300	110	<6.3	110
SM-3	3/3/2005	*	239	70	1.1	71.1
SM-3	6/13/2005	*	159	113	1.4	114
SM-3	9/2/2005	*	240	68.8	<0.56	68.8
SM-3	12/6/2005	*	479	136	<0.7	136
SM-3	3/7/2006	*	643	156	1.5	157
SM-3	6/6/2006	*	580	49.3	<1	50.2
SM-3	9/6/2006	*	768	140	1.2	141
SM-3	12/5/2006	*	621	106	<2	106
SM-3	6/6/2007	*	785	195	11.2	206
SM-3	6/24/2008	*	209	40.6	<1 U	41.1
SM-3	12/2/2008	*	101	15.9	<1 U	15.9
SM-3	6/2/2009	*	127	32.5	<1 U	32.5
SM-3	6/2/2010	*	87	7.5	<1 U	7.5
SM-3	6/16/2011	*	519	13.6	0.41 J	14
SM-3	6/22/2012	*	498	39	0.71 J	39.7
SM-3	6/25/2013	*	501	51.2	<1	52.2
SM-3	6/19/2014	*	311	37.1	<2.5 U	37.1
SM-3	7/2/2015	*C	275	52.9	0.48 NJ	53.4
SM-3	6/21/2016	*	282	124	1.0	125
SM-3	6/1/2017	*	244	47.9	<1 U	48.7
SM-4	9/11/1996	*	1400		<1	130
SM-4	10/29/1996	*	1600			<200
SM-4	9/4/1997	*	2700		<100	110
SM-4	11/18/1997	*C	3000 J			130 J
SM-4	3/17/1998	*	970			140
SM-4	6/24/1998	*	2700			<100
SM-4	9/10/1998	*	<1			<1
SM-4	12/16/1998	*	1300			<50
SM-4	3/23/1999	*	3700			<500
SM-4	6/23/1999	*	2200			<200
SM-4	9/14/1999	*	2200			<200U
SM-4	12/1/1999	*	1700			<200U
SM-4	3/7/2000	*	1700			<200U
SM-4	9/13/2000	*	160			<5U
SM-4	12/6/2000	*	200			<5U
SM-4	3/13/2001	*	1000			<50U
SM-4	6/5/2001	*	310			<50
SM-4	9/11/2001	*C	830			<25
SM-4	11/29/2001	*	290			<10
W-1	7/29/1998	*	<1			<1

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
W-1	6/4/2002	*	7.8			1.8
W-1	6/8/2007	*	<1 U	<1 U	<1 U	<1 U
W-1	6/25/2008	*	<1 U	<1 U	<1 U	<1 U
W-1	6/4/2009	*	<1 U	<1 U	<1 U	<1 U
W-1	6/3/2010	*	<1 U	<1 U	<1 U	<1 U
W-1	6/15/2011	*	<1 U	<1 U	<1 U	<1 U
W-1	6/21/2012	*	0.21 J	<1 U	<1 U	<1 U
W-1	6/19/2014	*	<1 U	<1 U	<1 U	<1 U
W-1	7/1/2015	*	<1 U	<1 U	<1 U	<1 U
W-1	6/23/2016	*	<1 U	<1 U	<1 U	<1 U
W-2	6/10/1997	*	<1			<1
W-2	11/18/1997	*	<1			<1
W-2	7/29/1998	*	<1		<0.5	<1
W-2	12/17/1998	*C	1UJ			1UJ
W-2	6/23/1999	*	<1			<1
W-2	12/3/1999	*	<1U			<1U
W-2	12/7/2000	*	<1U			<1U
W-2	11/30/2001	*	<1			<1
W-2	6/4/2002	*	<1			<1
W-2	12/4/2002	*	<1	<0.5	<0.5	<1
W-2	6/4/2003	*	<1	<1	<1	<2
W-2	6/9/2004	*	<1	<1	<1	<2
W-2	12/6/2004	*	<0.37	<0.34	<0.63	<0.68
W-2	6/15/2005	*	<1	<1	<1	<1
W-2	6/7/2006	*	<1	<1	<1	<1
W-2	12/6/2006	*	<1	<1	<1	<1
W-3	6/10/1997	*	<1			<1
W-3	11/18/1997	*	<1			<1
W-3	7/29/1998	*	<1			<1
W-3	12/17/1998	*	<1			<1
W-3	6/23/1999	*	<1			<1
W-3	12/7/2000	*	<1U			<1U
W-3	6/5/2001	*	<1			<1
W-3	11/30/2001	*	<1			<1
W-3	6/4/2002	*	<1			<1
W-3	12/4/2002	*	<1	<0.5	<0.5	<1
W-3	6/4/2003	*	<1	<1	<1	<2
W-3	12/10/2003	*	<1	<1	<1	<2
W-3	6/9/2004	*	<1	<1	<1	<2
W-3	12/6/2004	*	<0.37	<0.34	<0.63	<0.68
W-3	6/15/2005	*	<1	<1	<1	<1

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
W-3	12/7/2005	*	<0.15	<0.17	<0.28	<0.17
W-3	6/7/2006	*	<1	<1	<1	<1
W-3	12/6/2006	*	<1	<1	<1	<1
W-6	3/19/1997	*	16			4
W-6	6/10/1997	*	4.9			2.9
W-6	9/3/1997	*	20			12
W-6	11/18/1997	*	24			12
W-6	9/10/1998	*C	14			12
W-6	12/17/1998	*C	13 J			16 J
W-6	3/24/1999	*	17			23
W-6	6/23/1999	*	16			18
W-6	9/14/1999	*	16			19
W-6	12/3/1999	*	20			24
W-6	3/7/2000	*	18			18
W-6	9/13/2000	*	14			12
W-6	12/7/2000	*	16			20
W-6	3/13/2001	*	16			18
W-6	6/5/2001	*	14			12
W-6	6/5/2001	*C	12	12	<1	12
W-6	9/11/2001	*	13			15
W-6	11/30/2001	*	22			20
W-6	6/4/2002	*	13			10
W-6	9/5/2002	*C	21			15
W-6	12/4/2002	*	23	17	<0.5	17
W-6	3/5/2003	*	15	9.4	<1	9.4
W-6	6/2/2003	*	16	12	<1	12
W-6	6/4/2003	*	<1	<1	<1	<2
W-6	9/9/2003	*	13	9.4	<1	9.4
W-6	12/8/2003	*	14	16	<1	16
W-6	12/10/2003	*	16	14	<1	14
W-6	6/9/2004	*	12	11	<1	11
W-6	9/1/2004	*	13	12	<0.63	12
W-6	12/1/2004	*	12	16	<0.63	16
W-6	3/3/2005	*	14.7	13.1	<1	13.1
W-6	6/15/2005	*	12.1	10.7	<1	10.7
W-6	9/2/2005	*	2.5	7.3	<0.28	7.3
W-6	12/6/2005	*	11	11.9	<0.28	11.9
W-6	3/6/2006	*	12	13.2	<0.38	13.2
W-6	6/7/2006	*	13.6	16.3	<1	16.3
W-6	9/6/2006	*	10.3	11.7	<1	11.7
W-6	12/6/2006	*	9.2	13.8	<1	13.8
W-6	3/14/2007	*	12.4	20.6	<1 U	

TABLE 6
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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
W-6	6/5/2007	*	9.7			12.5
W-6	9/12/2007	*	8.8	10.7	<1 U	
W-6	12/6/2007	*	7.3 J	11.6 J	<1 UJ	11.9 J
W-6	6/25/2008	*	10.1	16.6	<1 U	16.6
W-6	9/3/2008	*	8		<1 U	9.1
W-6	12/3/2008	*	9.9	13.4	<1 U	13.4
W-6	1/8/2009		9.8	14.4	<1 U	14.4
W-6	3/5/2009	*	10.2	13.2	<1 U	13.2
W-6	6/3/2009	*	9.9	9.2	<1 U	9.2
W-6	9/11/2009	*	7.7	8.2	<1 U	8.2
W-6	12/1/2009	*	8.8	8.8	<1 U	8.8
W-6	1/8/2010		8.3	9	<1 U	9
W-6	3/8/2010	*	10.5	10.6	<1 U	10.6
W-6	4/1/2010		10.2	3.2	<1 U	3.2
W-6	6/3/2010	*	9.8	9.5	<1 U	9.5
W-6	9/7/2010	*	7.1	7.1	<1 U	7.1
W-6	10/5/2010		7.3	7.7	<1U	7.7
W-6	12/8/2010	*	8.7	11.1	<1 U	11.1
W-6	3/2/2011	*	9.3	11.5	<1 U	11.5
W-6	4/13/2011		8.8	10.4	<1U	10.4
W-6	5/11/2011		4.3	3.8	<1U	3.8
W-6	6/9/2011	*	6.6	6.2		6.2
W-6	6/15/2011	*	7.4	6.7	<1 U	6.7
W-6	7/7/2011		6.9	6.4	<1U	6.4
W-6	8/2/2011		6.4	6.1	<1 U	6.1
W-6	9/1/2011	*	5.4	5	<1 U	5
W-6	9/14/2011	*	6.9	6.1	<1 U	6.1
W-6	10/5/2011		5.6	5.4	<1 U	5.4
W-6	11/7/2011		2.9	3.3	<1 U	3.3
W-6	12/14/2011	*	5.7	6.9	<1 U	6.9
W-6	12/15/2011	*	6.8	8.7	<1 U	8.7
W-6	1/12/2012		6.7	7.3	<1 U	7.3
W-6	2/13/2012		6.5	9.1	<1 U	9.1
W-6	3/20/2012	*	7.4	11.3	<1 U	11.3
W-6	4/3/2012		6.9	9.5	<1 U	9.5
W-6	6/20/2012	*	7.1	8.6	<1 U	8.6
W-6	7/5/2012		5.7		<1 U	6.3
W-6	8/3/2012		6.1	8.3	<1 U	8.3
W-6	9/7/2012	*	6.2	7.7	<1 U	7.7
W-6	9/11/2012	*	6.7	8.9	<1 U	8.9
W-6	10/9/2012		5.2	6.1	<1 U	6.1
W-6	12/3/2012	*	6.8	9.9	0.21 U	9.9
W-6	1/4/2013		6.4	11.5	<1 U	11.5

TABLE 6
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ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
W-6	2/4/2013		8.4	3	<1 U	3
W-6	3/12/2013	*	7.8	13.5	<1 U	13.5
W-6	6/27/2013	*	7.3	10.5	<1 U	10.5
W-6	9/17/2013	*	5.9	7.2	<1 U	7.2
W-6	12/18/2013	*	6.8	9.1	<1 U	9.1
W-6	3/27/2014	*	5.9	7.4	<1 U	7.4
W-6	6/17/2014	*	5.8	7.9	<1 U	7.9
W-6	9/9/2014	*	5.8	6.8	<1 U	6.8
W-6	9/10/2014		5.6	7.2	0.24 U	7.2
W-6	12/10/2014	*	5.3	5.6	<1 U	5.6
W-6	3/18/2015	*C	4.8 J	6.4	<1 U	6.4
W-6	7/1/2015	*	4.3	6.1	<1 U	6.1
W-6	9/23/2015	*	5.2	6.7	<1 U	6.7
W-6	12/17/2015	*	5	6.5	<1 U	6.5
W-6	6/21/2016	*	5.5	10.8	<1 U	10.8
W-6	12/22/2016	*	4.8	7.1	<1 U	7.1
W-6	6/1/2017	*	6.2	11.9	<1 U	11.6
W-6	12/6/2017	*C	5.6 J	9.4	<1.0 U	9.4
W-7	6/10/1997	*	<1			<1
W-7	11/18/1997	*	<1			<1
W-7	12/17/1998	*C	1UJ			1UJ
W-7	6/23/1999	*	<1			<1
W-7	12/3/1999	*	<1U			<1U
W-7	12/7/2000	*	<1U			<1U
W-7	6/5/2001	*	<1			<1
W-7	11/30/2001	*	<1			<1
W-7	6/4/2002	*	<1			<1
W-7	12/4/2002	*	<1	<0.5	<0.5	<1
W-7	6/4/2003	*	<1	<1	<1	<2
W-7	12/10/2003	*	<1	<1	<1	<2
W-7	6/9/2004	*	<1	<1	<1	<2
W-7	12/2/2004	*	<0.37	<0.34	<0.63	<0.68
W-7	6/15/2005	*	0.53 J	0.3 J	<1	0.3 J
W-7	12/7/2005	*	0.44 J	<0.17	<0.28	<0.17
W-7	6/7/2006	*	<1	<1	<1	<1
W-7	12/6/2006	*	<1	<1	<1	<1
W-7	3/14/2007	*	<1 U	<1 U	<1 U	
W-7	6/12/2007	*	<1 U	<1 U	<1 U	<1 U
W-7	9/12/2007	*	<1 U	<1 U	<1 U	
W-7	3/4/2008	*	<1 U	<1 U	<1 U	<1 U
W-7	6/25/2008	*	<1 U	<1 U	<1 U	<1 U
W-7	3/12/2009	*	<1 U	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
W-7	6/3/2009	*	<1 U	<1 U	<1 U	<1 U
W-7	9/11/2009	*	<1 U	<1 U	<1 U	<1 U
W-7	12/1/2009	*	<1 U	<1 U	<1 U	<1 U
W-7	3/8/2010	*	<1 U	<1 U	<1 U	<1 U
W-7	6/3/2010	*	<1 U	<1 U	<1 U	<1 U
W-7	9/7/2010	*	<1 U	<1 U	<1 U	<1 U
W-7	12/10/2010	*	0.53 J	<1 U	<1 U	<1 U
W-7	3/2/2011	*	0.8 J	<1 U	<1 U	<1 U
W-7	6/15/2011	*	0.56 J	<1 U	<1 U	<1 U
W-7	9/14/2011	*	<1 U	<1 U	<1 U	<1 U
W-7	12/15/2011	*	0.42 J	<1 U	<1 U	<1 U
W-7	3/21/2012	*	0.62 J	<1 U	<1 U	<1 U
W-7	6/21/2012	*	0.43 J	<1 U	<1 U	<1 U
W-7	9/11/2012	*C	0.25 NJ	<1 U	<1 U	<1 U
W-7	12/5/2012	*	0.27 J	<1 U	<1 U	<1 U
W-7	3/12/2013	*C	0.37 NJ	0.23 NJ	<1 U	0.23 J
W-7	6/27/2013	*C	0.6 NJ	0.29 NJ	<1 U	0.29 J
W-7	9/17/2013	*	<1 U	<1 U	<1 U	<1 U
W-7	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
W-7	3/27/2014	*	<1 U	<1 U	<1 U	<1 U
W-7	6/19/2014	*C	<1 J	<1 U	<1 U	<1 U
W-7	9/9/2014	*	<1 U	<1 U	<1 U	<1 U
W-7	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
W-7	3/18/2015	*C	0.31 NJ	<1 U	<1 U	<1 U
W-7	7/1/2015	*C	0.25 NJ	<1 U	<1 U	<1 U
W-7	9/23/2015	*	<1 U	<1 U	<1 U	<1 U
W-7	12/17/2015	*	<1 U	<1 U	<1 U	<1 U
W-7	4/6/2016	*C	0.22 NJ	<1 U	<1 U	<1 U
W-7	6/23/2016	*	0.42 NJ	<1 U	<1 U	<1 U
W-7	12/22/2016	*	<1 U	<1 U	<1 U	<1 U
W-7	6/1/2017	*	<1 U	<1 U	<1 U	<1 U
W-7	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
W-12	3/19/1997	*	46			21
W-12	6/10/1997	*	7			6.1
W-12	9/3/1997	*	33			17
W-12	11/18/1997	*	39		<5	27
W-12	9/10/1998	*	24			15
W-12	12/17/1998	*	14			7.7
W-12	3/24/1999	*	9.2			3.3
W-12	6/24/1999	*	12			4
W-12	9/14/1999	*	17			5.5
W-12	12/3/1999	*	19			6.8

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
W-12	3/7/2000	*	27			13
W-12	9/13/2000	*	17			4.2
W-12	12/7/2000	*	21			7.3
W-12	3/13/2001	*	32			8.9
W-12	6/5/2001	*	19	3.3	<1	4.3
W-12	9/11/2001	*	14			4
W-12	11/30/2001	*	<1			<1
W-12	9/5/2002	*	11			2.4
W-12	12/5/2002	*	13	2.8	<0.5	2.8
W-12	3/5/2003	*	15	3.2	<1	3.2
W-12	6/2/2003	*	14	3.4	<1	3.4
W-12	9/9/2003	*	12	3	<1	3
W-12	12/8/2003	*	12	4.4	<1	4.4
W-12	12/10/2003	*	12	3.2	<1	3.2
W-12	3/2/2004	*	10	8.2	<1	8.2
W-12	6/9/2004	*	12	5.7	<1	5.7
W-12	9/1/2004	*	15	6	<0.63	6
W-12	12/1/2004	*	9.7	4	<0.63	4
W-12	3/3/2005	*	14.5	5.5	<1	5.5
W-12	6/15/2005	*	13.1	5.2	<1	5.2
W-12	12/7/2005	*	10.9	3.7	<0.28	3.7
W-12	3/6/2006	*	13.3	6	<0.38	6
W-12	6/7/2006	*	11.1	5.5	<1	5.5
W-12	9/7/2006	*	7	4	<1	4
W-12	12/6/2006	*	9.9	3.2	<1	3.2
W-12	3/14/2007	*	38.3	2.6	<1 U	
W-12	6/8/2007	*	9.8			4.8
W-12	9/12/2007	*	8.4	2.9	<1 U	
W-12	12/6/2007	*	9.4	2.7	<1 U	2.7
W-12	3/4/2008	*	12.2	4.4	<1 U	4.4
W-12	6/25/2008	*	10.8	4.5	<1 U	4.5
W-12	9/3/2008	*	7.2		<1 U	2.3
W-12	12/3/2008	*	8.4	2.7	<1 U	2.7
W-12	1/8/2009		8	2.7	<1 U	2.7
W-12	3/5/2009	*	9.5	2.7	<1 U	2.7
W-12	6/3/2009	*	12.2	3.8	<1 U	3.8
W-12	9/11/2009	*	7	2	<1 U	2
W-12	12/1/2009	*	8.9	2.2	<1 U	2.2
W-12	1/8/2010		8.7	2.5	<1 U	2.5
W-12	3/8/2010	*	13.1	3.9	<1 U	3.9
W-12	4/1/2010		9.1	11.6	<1 U	11.8
W-12	6/3/2010	*	13	4	<1 U	4
W-12	9/7/2010	*	7.9	2.4	<1 U	2.4

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
W-12	10/5/2010		6.8	1.9	<1U	1.9
W-12	12/10/2010	*	10.8	2.8	<1 U	2.8
W-12	3/2/2011	*	12.4	3.6	<1 U	3.6
W-12	4/13/2011		12.8	5.2	<1U	5.2
W-12	6/9/2011	*	12.3	4.8		4.8
W-12	6/15/2011	*	14.6	5.6	<1 U	5.6
W-12	7/7/2011		9.9	3.8	<1U	3.8
W-12	8/2/2011		9.7	4.2	<1 U	4.2
W-12	9/1/2011	*	8.8	2.7	<1 U	2.7
W-12	9/14/2011	*	9.7	3.4	<1 U	3.4
W-12	10/5/2011		7.9	2.7	<1 U	2.7
W-12	11/7/2011		9.5	3.1	<1 U	3.1
W-12	12/14/2011	*	6.8	2	<1 U	2
W-12	12/15/2011	*	9.5	3.1	<1 U	3.1
W-12	1/12/2012		7.3	2.3	<1 U	2.3
W-12	2/13/2012		8	3.2	<1 U	3.2
W-12	3/20/2012	*	10.8	4.3	<1 U	4.3
W-12	4/3/2012		9.2	4	<1 U	4
W-12	6/20/2012	*	12.2	5	<1 U	5
W-12	7/20/2012		9.6	3.3	<1 U	3.3
W-12	8/3/2012		7.8	2.5	<1 U	2.5
W-12	10/9/2012		6.2	1.8	<1 U	1.8
W-12	12/3/2012	*	8.6	2.7	<1 U	2.7
W-12	1/4/2013		6.7	2.2	<1 U	2.2
W-12	2/4/2013		6.1	11.2	<1 U	11.2
W-12	3/13/2013	*	10.4	3.8	<1 U	3.8
W-12	6/27/2013	*	9.8	3.3	<1 U	3.3
W-12	9/17/2013	*	9.3	3.3	<1 U	3.3
W-12	12/18/2013	*	7.4	2.4	<1 U	2.4
W-12	3/27/2014	*	7.2	1.9	<1 U	1.9
W-12	6/17/2014	*	7.4	2.1	<1 U	2.1
W-12	9/9/2014	*	6.9	1.8	<1 U	1.8
W-12	9/10/2014		6.6	2.2	0.24 U	2.2
W-12	12/10/2014	*	6.7	2.1	<1 U	2.1
W-12	3/18/2015	*	6.6	2.9	<1 U	2.9
W-12	7/1/2015	*	7	3	<1 U	3
W-12	9/23/2015	*	7	3.6	<1 U	3.6
W-12	4/4/2016	*	6.6	2.5	<1 U	2.5
W-12	6/21/2016	*	7.8	3.1	<1 U	3.1
W-12	12/22/2016	*	5.4	1.8	<1 U	1.8
W-12	6/1/2017	*	8.3	2.7	<1 U	2.7
W-12	12/6/2017	*	6.5	1.8	<1.0 U	1.8

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-10D	12/7/2007	*	<1 U	<1 U	<1 U	<1 U
C-10D	3/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-10D	6/24/2008	*	<1 U	<1 U	<1 U	<1 U
C-10D	9/3/2008	*	<1 U	<1 U	<1 U	<1 U
C-10D	12/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-10D	3/5/2009	*	<1 U	<1 U	<1 U	<1 U
C-10D	6/4/2009	*	<1 U	<1 U	<1 U	<1 U
C-10D	9/10/2009	*	<1 U	<1 U	<1 U	<1 U
C-10D	12/3/2009	*	<1 U	<1 U	<1 U	<1 U
C-10D	3/10/2010	*	<1 U	<1 U	<1 U	<1 U
C-10D	6/7/2010	*	0.25 J	<1 U	<1 U	<1 U
C-10D	9/9/2010	*	<1 U	<1 U	<1 U	<1 U
C-10D	12/8/2010	*	0.25 J	<1 U	<1 U	<1 U
C-10D	3/2/2011	*	<1 U	<1 U	<1 U	<1 U
C-10D	6/15/2011	*	0.25 J	<1 U	<1 U	<1 U
C-10D	9/14/2011	*	<1 U	<1 U	<1 U	<1 U
C-10D	12/15/2011	*	<1 U	<1 U	<1 U	<1 U
C-10D	3/21/2012	*	0.27 J	<1 U	<1 U	<1 U
C-10D	6/20/2012	*	0.3 J	<1 U	<1 U	0.21 J
C-10D	9/12/2012	*C	0.31 NJ	<1 U	<1 U	<1 U
C-10D	12/5/2012	*	0.2 J	<1 U	<1 U	<1 U
C-10D	3/13/2013	*C	0.33 NJ	0.31 NJ	<1 U	0.31 J
C-10D	6/27/2013	*C	0.35 NJ	<1 U	<1 U	<1 U
C-10D	6/27/2013		0.3 J	<1 U	<1 U	<1 U
C-10D	9/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-10D	12/19/2013	*	<1 U	<1 U	<1 U	<1 U
C-10D	3/26/2014	*	<1 U	<1 U	<1 U	<1 U
C-10D	6/17/2014	*C	0.25 NJ	<1 U	<1 U	<1 U
C-10D	9/9/2014	*	<1 U	<1 U	<1 U	<1 U
C-10D	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
C-10D	3/18/2015	*C	0.29 NJ	0.2 NJ	<1 U	0.2 NJ
C-10D	6/30/2015	*C	0.33 NJ	<1 U	<1 U	<1 U
C-10D	9/23/2015	*C	0.21 NJ	<1 U	<1 U	<1 U
C-10D	12/16/2015	*	<1 U	<1 U	<1 U	<1 U
C-10D	3/15/2016	*C	0.36 NJ	0.20 NJ	<1 U	0.20 NJ
C-10D	6/23/2016	*	0.39 NJ	<1 U	<1 U	<1 U
C-10D	12/22/2016	*	<1 U	<1 U	<1 U	<1 U
C-10D	6/1/2017	*	<1 U	<1 U	<1 U	<1 U
C-10D	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-11I	12/7/2007	*	<1 U	<1 U	<1 U	<1 U
C-11I	3/4/2008	*	<1 U	<1 U	<1 U	<1 U
C-11I	6/25/2008	*	<1 U	<1 U	<1 U	<1 U

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
C-11I	9/3/2008	*	<1 U	<1 U	<1 U	<1 U
C-11I	3/5/2009	*	<1 U	<1 U	<1 U	<1 U
C-11I	6/4/2009	*	<1 U	<1 U	<1 U	<1 U
C-11I	9/10/2009	*	0.53 J	<1 U	<1 U	<1 U
C-11I	12/3/2009	*	1.1	<1 U	<1 U	<1 U
C-11I	6/7/2010	*	1.3	<1 U	<1 U	<1 U
C-11I	9/9/2010	*	1.7	<1 U	<1 U	<1 U
C-11I	12/8/2010	*	2.8	<1 U	<1 U	<1 U
C-11I	3/2/2011	*	2.7	<1 U	<1 U	<1 U
C-11I	6/15/2011	*	1.8	<1 U	<1 U	<1 U
C-11I	9/14/2011	*	1.8	<1 U	<1 U	<1 U
C-11I	12/12/2011	*	2.6	<1 U	<1 U	<1 U
C-11I	3/21/2012	*	3.6	<1 U	<1 U	<1 U
C-11I	6/20/2012	*	2	<1 U	<1 U	<1 U
C-11I	9/12/2012	*	1.5 J	<1 U	<1 U	<1 U
C-11I	12/5/2012	*	1.8	<1 U	<1 U	<1 U
C-11I	3/13/2013	*	2.2	<1 U	<1 U	<1 U
C-11I	6/27/2013	*	1.8	<1 U	<1 U	<1 U
C-11I	9/17/2013	*	<1 U	<1 U	<1 U	<1 U
C-11I	12/18/2013	*	<1 U	<1 U	<1 U	<1 U
C-11I	3/26/2014	*	1.4	<1 U	<1 U	<1 U
C-11I	6/17/2014	*	1.1	<1 U	<1 U	<1 U
C-11I	9/9/2014	*	<1 U	<1 U	<1 U	<1 U
C-11I	12/10/2014	*	<1 U	<1 U	<1 U	<1 U
C-11I	3/18/2015	*C	1.2 J	<1 UJ	<1 UJ	<1 UJ
C-11I	6/30/2015	*	1.2	<1 U	<1 U	<1 U
C-11I	9/23/2015	*C	0.99 NJ	<1 U	<1 U	<1 U
C-11I	12/17/2015	*	1.4	<1 U	<1 U	<1 U
C-11I	4/6/2016	*	1.6	<1 U	<1 U	<1 U
C-11I	6/23/2016	*	1.0	<1 U	<1 U	<1 U
C-11I	12/22/2016	*	<1 U	<1 U	<1 U	<1 U
C-11I	6/1/2017	*	<1 U	<1 U	<1 U	<1.0
C-11I	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-11S	12/22/2008	*	<1 U	<1 U	<1 U	<1 U

NOTES

* = The Analytical results presented in this table have been validated.

*C = The Analytical results shown have been modified in accordance with the above described validation procedures, where appropriate.

J = The analyte was positively identified; the associated numerical value reported is the approximate concentration of the analyte in the sample.

U = The analyte was not positively identified above the reported sample quantitation lim it.

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and m eet quality control criteria. The presence or absence of the analyte cannot be verified.

B = Compound detected in the method blank associated with this sample.

TABLE 6
HISTORICAL GROUNDWATER SAMPLING RESULTS - VOCs
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)

N = The analysis indicated the presence of an analyte for which there is presum ptive evidence to make a "tenative identification".

NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

NDB = The analyte was not detected in the sample but was detected in an associated blank analysis.

Revised naming convention includes a suffix of S, I, or D to indicate a Shallow, Intermediate or a Deep screened interva

TABLE 7
FOURTH QUARTER 2017 GROUNDWATER VOC ANALYTICAL DATA
ZANESVILLE WELL FIELD SITE
Zanesville, Ohio

Location	Date	Validated and/or Changed	TCE (ug/L)	cis 1,2 DCE (ug/L)	trans 1,2 DCE (ug/L)	Total 1,2 DCE (ug/L)
B-2D	12/5/2017		-	-	-	-
B-2I	12/5/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-2S	12/5/2017		-	-	-	-
B-4D	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-4I	12/6/2017	*C	<1.0 U	1.2 J	<1.0 U	1.2
B-4S	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-5D	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-5I	12/6/2017	*	1.4	<1.0 U	<1.0 U	<1.0 U
B-6I	12/6/2017	*	2.6	<1.0 U	<1.0 U	<1.0 U
B-6S	12/6/2017	*C	1.1 J	<1.0 U	<1.0 U	<1.0 U
B-8S	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-8D	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-8I	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-9S	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-13D	12/5/2018	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-16	12/6/2017	*C	220	78.4	<1.0 UJ	78.4
B-18	12/5/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
B-23I-D	12/7/2017	*	3.3	<1.0 U	<1.0 U	<1.0 U
C-1S	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-1I	12/7/2017	*	22.9	3.5	<1.0 U	3.5
C-1D	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-2S	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-2I	12/6/2017	*	75.3	1.7	<1.0 U	1.7
C-2D	12/6/2017	*	6.3	7.1	<1.0 U	7.1
C-3S	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-3I	12/6/2017	*C	18.7	1.6 J	<1.0 U	1.6
C-3D	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-6	12/6/2017	*	4.8	<1.0 U	<1.0 U	<1.0 U
C-8	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-9	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-10D	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
C-11I	12/7/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
I-1	12/4/2017		96.3	33.8	<1.0 U	34.3
I-2	12/4/2017		19.2	8.3	<1.0 U	8.3
I-3	12/4/2017		9.6	<1.0 U	<1.0 U	<1.0 U
I-4	12/4/2017		196	103	1.1	104
S-2DB	1/9/2018	*	2.7	<1.0 U	<1.0 U	<1.0 U
SM-1	12/5/2017	*	68.4	<1.0 U	<1.0 U	<1.0 U
SM-2	12/5/2017	*	579	24.3	<4.0 U	24.3
W-6	12/6/2017	*C	5.6 J	9.4	<1.0 U	9.4
W-7	12/6/2017	*	<1.0 U	<1.0 U	<1.0 U	<1.0 U
W-12	12/6/2017	*	6.5	1.8	<1.0 U	1.8

NOTES
cis-1,2-DCE = cis-1,2-Dichloroethylene
trans-1,2-DCE = trans-1,2-Dichloroethylene

TABLE 7
FOURTH QUARTER 2017 GROUNDWATER VOC ANALYTICAL DATA
ZANESVILLE WELL FIELD SITE
Zanesville, Ohio

Total 1,2-DCE = Total 1,2-Dichloroethylene

TCE = Trichloroethylene

- = Not Sampled

* = The Analytical results presented in this table have been validated.

*C = The Analytical results shown have been modified in accordance with the above described validation procedures, where appropriate.

J = The analyte was positively identified; the associated numerical value reported is the approximate concentration of the analyte in the sample.

U = The analyte was not positively identified above the reported sample quantitation limit.

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and m eet quality control criteria. The presence or absence of the analyte cannot be verified.

B = Compound detected in the method blank associated with this sample.

N = The analysis indicated the presence of an analyte for which there is presum ptive evidence to make a "tenative identification".

NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

NDB = The analyte was not detected in the sample but was detected in an associated blank analysis.

Revised naming convention includes a suffix of S, I, or D to indicate a Shallow, Intermediate or a Deep screened interval.

TABLE 8
OUTLIER STATISTICAL ANALYSIS RESULTS
ZANESVILLE, WELL FIELD SITE
ZANESVILLE, OHIO

	TCE		DCE	
WELL ID	**DISTRIBUTION NORMAL/LOG NORMAL**	**OUTLIERS**	**DISTRIBUTION NORMAL/LOG NORMAL**	**OUTLIERS**
B-1I	Log Normal		---	
B-2S	---		---	
B-2I	---		---	
B-2D	---		---	
B-3I	Log Normal	6/8/2010, 5/31/2017	---	
B-4S	---		---	
B-4I	---		---	
B-4D	---		---	3/7/2006
B-5I	Log Normal		---	
B-5D	---		---	
B-6S	---		---	
B-6I	---		---	
B-8S	---		---	
B-8I	---		---	9/5/2002; 12/5/2002
B-8D	---		---	
B-9S	---		---	
B-9D	---		---	
B-10S	---		---	
B-11D	---		---	
B-13D	---		---	
B-16	---		Log Normal	12/10/2010
B-17	---		Log Normal	12/16/1998
B-18	---		---	
B-23I/D	Log Normal		---	
B-24D	---		---	
C-1S	---		---	
C-1I	---	12/7/1995; 9/12/1996; 3/18/2015	---	
C-1D	---		---	
C-2S	---		---	
C-2I	Log Normal	6/23/2016	---	
C-2D	Log Normal		Log Normal	6/3/2003
C-3S	---		---	
C-3I	Log Normal	12/7/1995; 9/12/1996; 6/12/97; 6/24/1998	---	
C-3D	---		---	
C-6	Normal	12/7/1995; 6/25/1998; 3/18/2015	---	
C-7	Log Normal		---	
C-8	---		---	
C-9	---		---	
C-10D	---		---	

TABLE 8
OUTLIER STATISTICAL ANALYSIS RESULTS
ZANESVILLE, WELL FIELD SITE
ZANESVILLE, OHIO

	TCE		DCE	
WELL ID	**DISTRIBUTION NORMAL/LOG NORMAL**	**OUTLIERS**	**DISTRIBUTION NORMAL/LOG NORMAL**	**OUTLIERS**
C-11I	---		---	
I-1	---		---	
I-2	---		---	8/9/1998
I-3	---		---	
I-4	Log Normal	8/5/2009	---	8/9/1998; 8/5/2009
S-2DB	Log Normal	9/16/2011	---	
SM-1	Log Normal		---	
SM-2	Normal	11/18/1997	Log Normal	12/5/2002
SM-3	---		---	
W-6	Log Normal	6/14/2003	Log Normal	6/4/2003
W-7	---		---	
W-12	---	3/19/1997; 11/8/1997; 11/30/2001	---	11/18/1997; 11/30/2001

NOTES:

[---] Signifies the distribution is neither normal or log normal

Annual Monitoring Well - Data reported from the June 2016 monitoring event.

TABLE 9
SEN'S SLOPE STATISTICAL ANALYSIS RESULTS
(ALL AND 5/8 YEAR FOR TCE AND DCE DATA)
ZANESVILLE, WELL FIELD SITE
ZANESVILLE, OHIO

	TCE		DCE	
	ALL	5/8 YEARS	ALL	5/8 YEARS
WELL ID	TRENDING SLOPE (µg/L per year)	TRENDING SLOPE (µg/L per year)	TRENDING SLOPE (µg/L per year)	TRENDING SLOPE (µg/L per year)
B-1I	**-3.842**	-0.3272	**-0.818**	0
B-2S	0	---	0	---
B-2I	0	0	0	0
B-2D*	0	---	0	---
B-3I	**-1.61**	-0.2811	**-0.1964**	0
B-4S	**-0.3705**	-0.1542	**0**	0
B-4I*	**-0.3113**	0	**-2.942**	-0.739
B-4D	0	0	0	0
B-5I	**-0.7622**	-1.376	0	0
B-5D	0	0	0	0
B-6S	0	-0.1633	**0**	0
B-6I	**-1.867**	**-2.499**	**0**	0
B-8S	0	0	0	0
B-8I	0	0	**0**	0
B-8D	0	0	0	0
B-9S	0	0	0	0
B-9D	0	0	0	0
B-10S*	0	---	0	---
B-11D	0	0	0	0
B-13D	0	0	0	0
B-15	**-41.56**	-4.323*	**-18.78**	-5.094*
B-16	**-48.88**	-82.36	**-13.41**	-9.204
B-17	**-18.84**	-0.3237	-10.95	6.234
B-18	**-0.2798**	0	0	0
B-23I/D	**-1.552**	0.008575	0	0
B-24D	0	0	0	0
C-1S	0	0	0	0
C-1I	**-1.352**	0	**0.0685**	0.2517
C-1D	0	0	0	0
C-2S	0	0	0	0
C-2I	**-5.198**	-1.273	**-0.06347**	-0.02519
C-2D	**-1.228**	-0.986	**-2.494**	-2.204
C-3S	0	0	0	0
C-3I	-0.4129	1.025	0	0.2356
C-3D	0	0	0	0
C-6	-0.05498	-0.2236	0	0
C-7	-2.889	-0.8747	**-0.1787**	0

NOTES:
1) Bolded values represent a slope trend significant at 95% confidence level
2) Revised naming convention includes a suffix of S, I, or D to indicate a shallow, intermediate or deep screened interval.

TABLE 9
SEN'S SLOPE STATISTICAL ANALYSIS RESULTS
(ALL AND 5/8 YEAR FOR TCE AND DCE DATA)
ZANESVILLE, WELL FIELD SITE
ZANESVILLE, OHIO

	TCE		DCE	
	ALL	5/8 YEARS	ALL	5/8 YEARS
WELL ID	TRENDING SLOPE (µg/L per year)	TRENDING SLOPE (µg/L per year)	TRENDING SLOPE (µg/L per year)	TRENDING SLOPE (µg/L per year)
C-8	0	0	0	0
C-9	0	0	0	0
C-10D	0	0	0	0
C-11I	0	0	0	0
I-1	-0.889	3.407	-0.2566	-1.326
I-2	**-4.482**	-0.2495	**-1.686**	-0.9155
I-3	**-1.283**	-0.2075	**-0.6005**	-0.1784
I-4	**-24.82**	-10.16	**-2.7**	-5.687
S-2DB	**-2.092**	-2.555	0	0
SM-1	**-50.09**	-1.011	**-1.483**	-0.07562
SM-2	**-30.08**	39.23	-4.303	-3.73
SM-3	**-43**	-28.73	**-38.42**	**8.415**
W-1	0	0	0	0
W-6	**-0.6897**	-0.3104	**-0.4685**	0.3892
W-7	0.000	0	**0.000**	0
W-12	**-0.5417**	**-0.6386**	**-0.2074**	-0.0899

--- = Not sampled during 2nd Half 2017

Bold = Significant at the 98% confidence level.

Annual Monitoring Well - Data reported from the June 2017 monitoring event.

* = 5-year analysis less than 8 data points.

NOTES:
1) Bolded values represent a slope trend significant at 95% confidence level
2) Revised naming convention includes a suffix of S, I, or D to indicate a shallow, intermediate or deep screened interval.

APPENDICES

Appendix A SECOND HALF 2017 OPERATIONS & MAINTENANCE

Second Half 2017 Operations and Maintenance Report for July through December 2017

Zanesville Well Field Site
Zanesville, Ohio

Prepared for:
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December 28, 2018

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1.0 INTRODUCTION

On behalf of United Technologies Corporation (UTC), Stantec is submitting this 2017 Second Semi-Annual Operations and Maintenance Report for July through December 2017 (Semi-Annual Report) for the Zanesville Well Field Site located in Zanesville, Ohio (Site). The Operations and Maintenance (O & M) activities were conducted in accordance with the August 1996 Operation and Maintenance Plan for Aquifer Sparging/Soil Vapor Extraction System (O & M Plan). Section 2.0 details the O & M activities conducted at the Site.

2.0 OPERATIONS AND MAINTENANCE PROGRESS REPORT

The following sections cover O & M activities conducted during the Third and Fourth Quarters of 2017. This section is in accordance with Section XI of the Consent Decree for this Site.

2.1 O & M SAMPLE COLLECTION

O & M samples were collected during the first or second week of every month. Groundwater samples are collected from the interceptor wells (I-1, I-2, I-3, and I-4) and the influent and effluent of the air stripper. The samples are collected and analyzed for trichloroethylene (TCE) and 1, 2 dichloroethylene (1, 2-DCE) by SW-846 Method 624. Table 1 presents the analytical results for the interceptor wells and air stripper influent and effluent samples collected during this reporting period.

Discharge samples were collected on a monthly basis from Outfalls 001 (air stripper discharge to river), 002 and 003 (City of Zanesville Well Field pumping wells[1] W-6 and W-12, respectively) and analyzed for TCE, 1, 2-DCE, copper, iron, mercury, silver, zinc, cyanide, oil and grease, total non-filterable residue, and pH in accordance with the Ohio Environmental Protection Agency (OEPA) "Authorization to Discharge to the Muskingum River." The laboratory analytical parameters results and field pH measurement are provided in Tables 2 through 7. These results are provided to the OEPA and the U.S. EPA on a monthly basis.

Due to the short hold time for pH (<15 minutes), pH is measured in the field with a calibrated pH meter in accordance with ASTM D1293-99. The pH sampling procedure is included in Appendix A. Sample field sheets are included in Appendix B.

Samples collected for analytical analysis were submitted to SGS in Dayton, New Jersey under chain-of-custody and the analytical data packages have been included as Appendix A.

2.2 O & M AS/SVE PERFORMANCE AND GROUNDWATER CONTAINMENTS SYSTEM

Air Sparge/Soil Vapor Extraction (AS/SVE) system monitoring was performed during this semi-annual reporting period in accordance with the AS/SVE system monitoring schedule presented in the O&M Plan, dated August 12, 1996. The results of the system monitoring are presented in Table 8 and include the estimated total pounds of VOCs removed to date in 2017.

The following actions were conducted during this reporting period:

- Monthly chemical cleaning of the air stripper;

[1] UTC maintains pumping wells W-6 and W-12.

- The air sparge system compressor was serviced in November 2017; and,
- Interceptor Well I-2 was cleaned and the pumps were serviced and repaired in July 2017.

2.3 ANTICIPATED EVENTS

Anticipated activities for the next 120 days include the following:

- The AS/SVE system will continue to be monitored in accordance with the O & M Plan and system performance will be evaluated;
- Balancing of the AS/SVE system;
- Annual maintenance on AS/SVE system;
- Monthly acid cleaning of the air stripper tower;
- Interceptor well cleaning;
- Monitoring and sampling of the interceptor wells and air stripper system on a monthly basis; and
- Sample collection of the discharges to the Muskingum River from Outfalls 001, 002 and 003.

3.0 O & M CONCLUSIONS FOR THIRD AND FOURTH QUARTERS 2017

Based on the information from the O&M reporting period, the following conclusions are presented:

- The discharge samples collected from the interceptor wells and the influent and effluent of the air stripper reported concentrations below the Remedial Action Wastewater Discharge Standards[2].
- The outfall samples collected from Outfalls 001, 002 and 003 were below the Remedial Action Wastewater Discharge Standards.
- O&M activities were conducted in accordance with the O & M Plan, dated August 12, 1996.

During this reporting period, there have been no changes in personnel or communication with the local community or state government. The AS/SVE system operations will continue and adjustments may be made to maximize efficiency. O & M activities will continue in accordance with the August 12, 1996 O & M Plan.

[2] The Remedial Action Wastewater Discharge Standards are presented as Attachment II of the Statement of Work for the Remedial Design and Remedial Action Work Plan at Zanesville Well Field Site, Zanesville, Ohio

TABLES

TABLE 1 - YEAR 2017 SUMMARY OF GROUNDWATER VOC CONCENTRATIONS ZANESVILLE WELL FIELD SITE ZANESVILLE, OHIO

MONTH	UTA - LINDEN INTERCEPT WELLS								AIR STRIPPING TOWER DATA						CITY WELLS			
	WELL 1		WELL 2		WELL 3		WELL 4		INFLUENT		EFFLUENT		RIVER DISCHARGE		WELL #6		WELL #12	
	TCE (ug/l)	DCE (ug/l)	TCE (ug/l)	DCE (ug/l)	TCE (ug/l)	DCE (ug/l)	TCE (ug/l)	DCE (ug/l)	TCE (ug/l)	DCE (ug/l)	TCE (ug/l)	DCE (ug/l)	TCE (ug/l)	DCE (ug/l)	TCE (ug/l)	DCE (ug/l)	TCE (ug/l)	DCE (ug/l)
JANUARY	72.0	22.0	20.8	7.5	10.3	1.7	216	101	57.8	20.1	3.2	3.3	3.0	3.2	4.3	6.7	4.3	1.6
FEBRUARY	46.3	20.5	14.5	6.9	9.4	1.6	200	101	38.5	16.2	2.6	2.9	1.9	2.3	4.0	8.3	3.9	1.5
MARCH [1]	57.3	22.2	14.6	6.1	10.8	1.7	640	44.6	31.0	12.2	2.1	2.1	1.5	1.8	5.0	8.0	7.0	2.4
APRIL	56.2	24.6	12.5	7.7	11.0	1.5	172	123.0	85.8	43.4	20.6	19.3	17.4	18.6	6.2	12.9	5.1	1.4
MAY	53.9	24.9	11.3	6.4	10.0	1.3	188	111	70.5	35.2	2.1	2.4	1.6	1.9	5.9	12.8	7.0	2.5
JUNE	52.1	20.5	11.4	4.8	8.5	1.1	175	86.9	65.1	29.1	5.5	4.0	4.9	3.8	4.9	9.3	5.9	1.9
July [2]	39.2	21.9	13.6	0.6	7.6	1.6	141	83.4	61.7	29.5	2.8	2.6	2.2	2.2	4.8	9.7	5.8	2.2
AUGUST	29.0	16.1	11.8	7.7	8.5	2.4	171	85.5	43.2	22.1	5.4	4.8	4.7	4.3	4.8	9.1	5.6	2.4
SEPTEMBER	36.7	22.3	11.7	7.0	8.0	1.4	183	92.6	50.1	25.5	3.5	3.4	2.8	3.0	4.5	8.0	5.5	2.2
OCTOBER	45.6	26.3	16.0	7.1	8.4	<1.0	177	87.1	50.7	23.3	4.8	4.1	4.2	3.8	4.4	7.3	5.5	2.3
NOVEMBER	68.8	32.1	18.2	9.4	8.2	0.94 J	179	100	56.3	25.4	3.2	2.7	2.4	2.3	4.2	7.8	5.7	2.0
DECEMBER	96.3	34.3	19.2	8.3	9.6	<1.0	196	104	62.4	21.9	3.2	2.3	2.4	2.0	4.8	8.0	6.1	1.7

Notes:

1: I-4 was down for routine service during the March 2017 discharge sampling event. A grab sample was collected from I-4 using a bailer.

2: I-1 was down for routine service during the scheduled sampling event. The I-1 sample weas collected on July 26, 2017.

J = Indicates an estimated value

TABLE 2 - LABORATORY RESULTS FOR OUTFALLS 001, 002 AND 003
July 2017
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

PARAMETER	UNITS	Discharge Limits		OUTFALL CONCENTRATION		
		30-day	Daily Max.	001	002	003
TCE	ug/l	26	69	2.2	4.8	5.8
1,2-DCE	ug/l	25	66	2.2	9.7	2.2
Copper	ug/l	-	-	<10	<10	<10
Iron	ug/l	-	-	783	269	249
Mercury	ug/l	-	-	<0.20	<0.20	<0.20
Silver	ug/l	-	-	<10	<10	<10
Zinc	ug/l	-	535	<20	<20	<20
Cyanide	mg/l	-	-	<0.010	<0.010	<0.010
Oil & Grease	mg/l	15	20	<5.2	<5.0	<5.0
pH	S.U.	6.5 - 9.0	6.5 - 9.0	8.18	7.44	7.59
Residue	mg/l	30	45	4.8	<4.0	<4.0

Outfall 001 = River discharge on West Side of Muskingum River from Air Stripper.
Outfall 002 = River Discharge from Extraction Well W-6.
Outfall 003 = River Discharge from Extraction Well W-12.
- = No discharge limit.

TABLE 3 - LABORATORY RESULTS FOR OUTFALLS 001, 002 AND 003
August 2017
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

		Discharge Limits		OUTFALL CONCENTRATION		
PARAMETER	**UNITS**	**30-day**	**Daily Max.**	**001**	**002**	**003**
TCE	ug/l	26	69	4.7	4.8	5.6
1,2-DCE	ug/l	25	66	4.3	9.1	2.4
Copper	ug/l	-	-	<10	<10	<10
Iron	ug/l	-	-	738	252	238
Mercury	ug/l	-	-	<0.20	<0.20	<0.20
Silver	ug/l	-	-	<10	<10	<10
Zinc	ug/l	-	535	36.7	<20	<20
Cyanide	mg/l	-	-	<0.010	<0.010	<0.010
Oil & Grease	mg/l	15	20	<5.2	<5.1	<5.1
pH	S.U.	6.5 - 9.0	6.5 - 9.0	8.16	7.66	7.84
Residue	mg/l	30	45	12.3	<4.0	<4.0

Outfall 001 = River discharge on West Side of Muskingum River from Air Stripper.
Outfall 002 = River Discharge from Extraction Well W-6.
Outfall 003 = River Discharge from Extraction Well W-12.
- = No discharge limit.

TABLE 4 - LABORATORY RESULTS FOR OUTFALLS 001, 002 AND 003
September 2017
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

PARAMETER	UNITS	Discharge Limits		OUTFALL CONCENTRATION		
		30-day	Daily Max.	001	002	003
TCE	ug/l	26	69	2.8	4.5	5.5
1,2-DCE	ug/l	25	66	3.0	8.0	2.2
Copper	ug/l	-	-	<10	<10	<10
Iron	ug/l	-	-	1,800	260	242
Mercury	ug/l	-	-	<0.20	<0.20	<0.20
Silver	ug/l	-	-	<10	<10	<10
Zinc	ug/l	-	535	<20	<20	<20
Cyanide	mg/l	-	-	<0.010	<0.010	<0.010
Oil & Grease	mg/l	15	20	<5.2	<5.1	<5.0
pH	S.U.	6.5 - 9.0	6.5 - 9.0	8.22	7.70	7.73
Residue	mg/l	30	45	<4.0	<4.0	<4.0

Outfall 001 = River discharge on West Side of Muskingum River from Air Stripper.
Outfall 002 = River Discharge from Extraction Well W-6.
Outfall 003 = River Discharge from Extraction Well W-12.
- = No discharge limit.

TABLE 5 - LABORATORY RESULTS FOR OUTFALLS 001, 002 AND 003
October 2017
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

PARAMETER	UNITS	Discharge Limits		OUTFALL CONCENTRATION		
		30-day	Daily Max.	001	002	003
TCE	ug/l	26	69	4.2	4.4	5.5
1,2-DCE	ug/l	25	66	3.8	7.3	2.3
Copper	ug/l	-	-	<10	<10	<10
Iron	ug/l	-	-	1,660	238	229
Mercury	ug/l	-	-	<0.20	<0.20	<0.20
Silver	ug/l	-	-	<10	<10	<10
Zinc	ug/l	-	535	<20	<20	<20
Cyanide	mg/l	-	-	<0.010	<0.010	<0.010
Oil & Grease	mg/l	15	20	<5.0	<5.0	<5.0
pH	S.U.	6.5 - 9.0	6.5 - 9.0	8.20	7.60	7.54
Residue	mg/l	30	45	5.2	<4.0	<4.0

Outfall 001 = River discharge on West Side of Muskingum River from Air Stripper.
Outfall 002 = River Discharge from Extraction Well W-6.
Outfall 003 = River Discharge from Extraction Well W-12.
- = No discharge limit.

TABLE 6 - LABORATORY RESULTS FOR OUTFALLS 001, 002 AND 003
November 2017
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

PARAMETER	UNITS	Discharge Limits		OUTFALL CONCENTRATION		
		30-day	Daily Max.	001	002	003
TCE	ug/l	26	69	2.4	4.2	5.7
1,2-DCE	ug/l	25	66	2.3	7.8	2.0
Copper	ug/l	-	-	<10	<10	<10
Iron	ug/l	-	-	4,630	249	271
Mercury	ug/l	-	-	<0.20	<0.20	<0.20
Silver	ug/l	-	-	<10	<10	<10
Zinc	ug/l	-	535	<20	<20	<20
Cyanide	mg/l	-	-	<0.010	<0.010	<0.010
Oil & Grease	mg/l	15	20	<5.0	<5.0	<5.0
pH	S.U.	6.5 - 9.0	6.5 - 9.0	8.29	7.71	7.63
Residue	mg/l	30	45	<4.0	<4.0	<4.0

Outfall 001 = River discharge on West Side of Muskingum River from Air Stripper.
Outfall 002 = River Discharge from Extraction Well W-6.
Outfall 003 = River Discharge from Extraction Well W-12.
- = No discharge limit.

TABLE 7 - LABORATORY RESULTS FOR OUTFALLS 001, 002 AND 003
December 2017
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

PARAMETER	UNITS	Discharge Limits		OUTFALL CONCENTRATION		
		30-day	Daily Max.	001	002	003
TCE	ug/l	26	69	2.4	7.8	6.1
1,2-DCE	ug/l	25	66	2.0	8.0	1.7
Copper	ug/l	-	-	<10	<10	<10
Iron	ug/l	-	-	2,070	351	227
Mercury	ug/l	-	-	<0.20	<0.20	<0.20
Silver	ug/l	-	-	<10	<10	<10
Zinc	ug/l	-	535	<20	<20	<20
Cyanide	mg/l	-	-	<0.010	<0.010	<0.010
Oil & Grease	mg/l	15	20	<5.5	<5.3	<5.2
pH	S.U.	6.5 - 9.0	6.5 - 9.0	8.22	7.75	7.82
Residue	mg/l	30	45	6.0	<4.0	<4.0

Outfall 001 = River discharge on West Side of Muskingum River from Air Stripper.
Outfall 002 = River Discharge from Extraction Well W-6.
Outfall 003 = River Discharge from Extraction Well W-12.
- = No discharge limit.

TABLE 8 - YEAR 2017 INTERCEPTOR WELLS, AIR STRIPPER & AS/SVE SYSTEM PERFORMANCE
ZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

	INTERCEPTOR WELLS				AIR STRIPPER	CITY WELLS		SMF SVE		SS SVE		DEEP SVE	
MONTH	WELL 1 Million Gal.	WELL 2 Million Gal.	WELL 3 Million Gal.	WELL 4 Million Gal.	VOCS Removed lb. /month	WELL #6 Million Gal.	WELL #12 Million Gal.	VOCs ppm	VOCS Removed lb. /month	VOCs ppm	VOCS Removed lb. /month	VOCs ppm	VOCS Removed lb. /month
JANUARY	7.48	5.40	5.61	1.26	11.78	18.22	18.11	0.1	0.69	0.0	0.00	0.1	1.44
FEBRUARY	6.45	4.33	4.60	0.56	6.54	16.57	18.00	0.3	1.91	0.2	0.38	0.4	5.22
MARCH	7.72	4.86	5.59	4.17	7.27	18.37	11.49 [1]	0.2	1.27	0.0	0.00	0.1	1.20
APRIL	4.30	2.68	4.17	1.17	9.17	11.19	11.42	0.2	1.23	0.2	0.48	0.1	1.20
MAY	6.89	4.29	4.50	4.94	17.41	14.72	20.41	0.2	1.41	0.0	0.00	0.1	1.21
JUNE	1.91 [2]	3.45	4.42	2.79	8.88	15.72	15.95	0.0	0.0	0.0	0.0	0.0	0.00
JULY	4.20	0.35 [3]	4.68	2.67	8.56	15.03 [4]	11.48 [5]	0.1	0.67	0.0	0.0	0.2	2.42
AUGUST	5.79	4.22	4.10	2.66	7.71	17.60 [6]	15.71	0.2	1.39	0.0	0.0	0.0	0.00
SEPTEMBER	5.71	4.59	4.25	2.49	9.77	14.64	16.61	0.0	0.0	0.0	0.0	0.2	2.96
OCTOBER	6.31	5.84	4.84	2.38	10.51	17.83	19.95	0.1	0.75	0.0	0.0	0.2	2.85
NOVEMBER	4.41	4.29	3.48	1.43	8.60	13.88	16.40	0.1	0.66	0.0	0.0	0.4	4.68
DECEMBER	5.31	5.59	4.46	1.45	11.05	5.00 [7]	17.56	0.1	0.68	0.0	0.0	0.4	5.92
YEAR TO-DATE	66.48	49.89	54.71	27.97	117.25	178.77	193.09		10.66		0.86		29.10

Notes:

1: W-12 was down for routine service and maintenance during March 2017 and on March 22 went down due to a power outage and was restarted on March 23, 2017.

2: I-1 was down for routine service and maintenance during June 2017.

3: I-2 was down for routine service and maintenance during July 2017.

4: The July flow for W-6 is estimated. The flow meter was damaged during a severe weather event. However, the well did not shut down.

5: W-12 was down due to a severe weather event. It has been returned to operation with no damage.

6: The W-6 flow meter was replaced on September 6, 2017. The August flow was estimated based on run-time and flow rate measured at the time of maintenance.

7: W-6 experienced pumping issues during this period. Issues will be addressed in January/February 2018.

APPENDIX A
DISCHARGE SAMPLING pH PROCEDURE

Second Half 2017 Operations and Maintenance Report for July through December for the Zanesville Well Field Site in Zanesville, OH

Zanesville Well Field Site Discharge Sampling pH Procedure

(For compliance with SOW Authorization to Discharge Reporting Code 00400)

pH & Temperature

Supplies:

- Extech ExStik pH100 Meter or equivalent
- Single Packet Calibration Solutions: 4, 7, 10
- Container to bring calibration solution to sample temperature
- Container for Calibration
- Container for sample collection
- Tap or Distilled water
- Nitrile gloves
- Calibration Form
- Discharge Sample Form
- Chain-of-Custody (COC)

Calibration:

1) Calibrate the meter daily or with each use according to the manufacturer's instructions using the pH 4, 7, and 10 buffers.

2) Soak the meter in pH 4 solution for about 10 minutes prior to use.

3) Prepare a cooling bath for pH buffers using the stripper effluent water to bring buffer temperature near the sample temperature prior to calibration or at a minimum of 25° C (77° F) for more accurate calibration.

4) Follow manufacturer's instructions on calibration

5) Record data on pH Calibration Log

Analysis:

1) Rinse the probe thoroughly with the water or probe specific solution and blot dry

2) Place sample in clean container and collect data within 15 minutes or less from time of sample collection.

3) Wait for the pH reading to stabilize and record data.

4) Record the temperature of the sample next to the pH reading in the on Discharge Sampling form and note on the COC. **Notify S. Hall or J. McInnes immediately if reading is <6.5 or >9.0.**

5) Rinse the probe thoroughly with the DI water and blot dry

6) When not in use store the electrode according to the manufacturer's instructions, usually in the electrode storage solution.

Zanesville Well Field Site Discharge Sampling pH Procedure

(For compliance with SOW Authorization to Discharge Reporting Code 00400)

References:

- Extech Intruments, ExStik™ Waterproof pH Meters, Users Guide, Models PH100 and PH110
- USEPA Method 150.1

Zanesville Well Field Site Discharge Sampling pH Procedure

(For compliance with SOW Authorization to Discharge Reporting Code 00400)

EXTECH - ExStik™ pH Meter – Quick Use Guide – Please refer to full Users Guide for full instructions.

Getting Started

- Remove the cap from the bottom of the ExStikTM to expose the electrode glass surface and reference junction
- Before first use or after extended storage, soak the electrode (with its cap removed) in a pH 4 solution for about 10 minutes
- White KCL crystals may be present in the cap. These crystals will dissolve in the soak or they can be simply rinsed with tap or DI water
- Always calibrate close to the expected measurement value
- A sponge is located in the electrode protective cap.
- Keep this sponge soaked with a pH 4 solution to preserve Electrode life during storage

pH Calibration (1, 2, or 3 points)

A two point calibration with a buffer of 7 plus 4 or 10 (whichever is nearest to the expected sample value) is always recommended. A one point calibration (choose the value closest to the expected sample value) is also valid. For best accuracy, always calibrate at the sample temperature.

1. Place the electrode into a buffer solution (4, 7, or 10) and momentarily press the CAL key. pH 7 should be calibrated first, then 4 and/or 10 pH.
2. The ExStik™ automatically recognizes the solution and calibrates itself to that value. Note: If the solution is more than 1pH off from the 4, 7, or 10pH standard, the ExStik™ will assume an error and abort the calibration. CAL and END will be displayed.
3. During calibration, the pH reading flashes on the main display.
4. When calibration is complete, the ExStik™ automatically displays 'END' and returns to normal operation mode.
5. The appropriate circled indicator ④ ,⑦ , or ⑩ will appear on the LCD when a calibration has been completed. The calibration data is stored until a new calibration is performed.
6. For a two or three point calibration, repeat steps 1-4.

Note: Always turn the meter off and then on before calibrating to allow sufficient time to complete the calibrations during one power cycle. If the meter auto powers off during calibration the calibrations remain valid, but new calibrations will turn the circled indicators off.

Zanesville Well Field Site Discharge Sampling pH Procedure

(For compliance with SOW Authorization to Discharge Reporting Code 00400)

Note: The Automatic Temperature Compensation (ATC) circuit is not active during calibration. To ensure a more accurate calibration, make sure that the calibration buffers are at 25°C (77°F).

RESET

If the meter will not calibrate or displays a -1, reset the meter and attempt to re-calibrate.

1. Turn off the meter.
2. Remove the battery cartridge from the top of the meter.
3. Press the On/Off button for 10 seconds to bleed off all charges within the meter.
4. Re-insert the batteries and power on the meter.
5. Attempt to re-calibrate the meter.

Zanesville Well Field Site
Discharge Sampling pH Calibration Log

Site Name: Zanesville Well Field Site **pH Meter Model Number:** EXTECH ExStik pH100

Year:

Date	Time	Analyst	Fresh Buffer (yes/no)	Buffer Temp (Degrees C or F)	pH 4 Result	pH 7 Result	pH 10 Result

Submit Calibration Log Monthly to Project Manager or Designee

Discharge Monitoring Sampling Form

Stantec

Client: UTC	Site Zanesville Well Field	Project Number 182602727	
Field Staff	**Date**	**Time**	**Temp**
Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (Circle)		**Wind** (vel/dir)	

Well ID	Time Sampled	Comments
I-1		
I-2		
I-3		
I-4		
Tower INF		
Tower EFF		

(Above sampling locations are analyzed for cis-1,2-DCE, trans-1,2-DCE, and TCE only)

Document pH on COC

River Out		pH
W-6 Out		pH
W-12 Out		pH

(Note: River Out, W-6 Out & W-12 Out are also analyzed for: O&G, TSS, Cn)

Sample Information

Analysis	VOC 624	Metals (Ag,Cu,Fe,Hg,Zn)	TSS	O&G 1664	CN (cyanide)
Preservative	HCl	HNO3	None	HCL	NaOH with Ascorbic Acid
Container type and Contenance	Glass 40mL	Plastic 500 mL	Poly 1 Liter	Glass 1 Liter	Glass 60 mL
# of Cont.	3	1	2	2	1

Notes:

Monitoring Points

	yes	no
Free and Clear of vegetation?	☐	☐
Signs intact, visible, and in good condition?	☐	☐

Comments/Needed Repairs:

Trip Blank (yes/no): **(If no, explain.)**

Cooler FedEx Tracking Number:

Custody Seals (yes/no):

Samplers Signature:

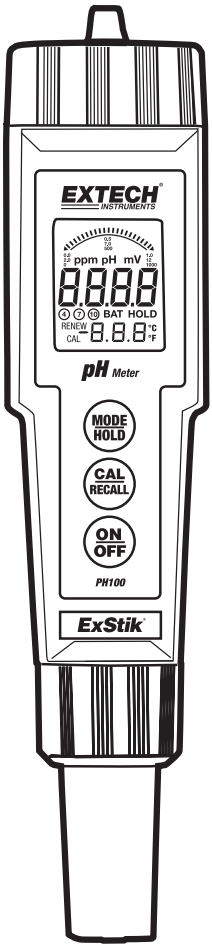
EXTECH INSTRUMENTS

USER GUIDE

ExStik™ Waterproof pH Meters

Models PH100 and PH110

Patent Pending



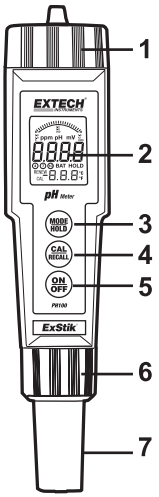
CE

Introduction

Thank you for selecting the Extech Model PH100 and/or the model PH110 (refillable) meter. This instrument is designed for high accuracy pH testing. This device is shipped fully tested and calibrated and, with proper use, will provide years of reliable service. Please visit our website (www.extech.com) to check for the latest version of this User Guide, Product Updates, Product Registration, and Customer Support.

ExStik™ Description

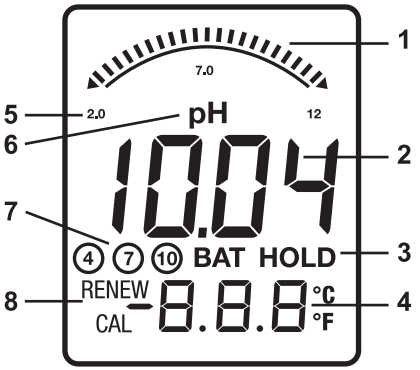
Front Panel Controls



1. Battery compartment cap
2. LCD Display
3. MODE / HOLD button
4. CAL / RECALL button
5. ON/OFF button
6. Electrode collar
7. Electrode (refillable)

(Electrode cap is not shown)

Display



1. Bargraph reading
2. Measurement reading
3. BAT (low battery) and HOLD (data hold) indicators
4. Temperature display
5. Bargraph scale designations
6. Units of measure
7. Calibration indicators
8. RENEW and CAL indicators

CAUTIONS

- This device is not a toy and must not reach children's hands. It contains hazardous objects as well as small parts that the children could swallow. In case a child swallows any of them, please contact a physician immediately
- Do not leave batteries and packing material lying around unattended; they can be dangerous for children if they use them as toys
- In case the device is going to be unused for an extended period of time, remove the batteries to prevent them from draining
- Expired or damaged batteries can cause cauterization on contact with the skin. Always, use suitable hand gloves in such cases
- See that the batteries are not short-circuited. Do not throw batteries into the fire.

Overview

pH Overview

pH is a unit of measure (ranging from 0 to 14pH) indicating the degree of acidity or alkalinity of a solution. pH tests are the most commonly performed measurements in water analysis and reports the negative log of the hydrogen ion activity of a solution which is an indicator of acidity or alkalinity. Solutions with a pH less than 7 are considered acidic, solutions with a pH higher than 7 are known as bases, and solutions with a pH of exactly 7 are neutral.

The pH scale is logarithmic so, for example, if sample A is 1 pH less than Sample B, this means that Sample A is 10 times more acidic then Sample B. A difference of 1 pH represents a ten-fold difference in acidity.

Getting Started

- For new meters, remove the battery cap and then remove the battery insulating strip.
- Remove the cap from the bottom of the ExStik™ to expose the electrode glass surface and reference junction
- Before first use or after extended storage, soak the electrode (with its cap removed) in a pH 4 solution for about 10 minutes
- White KCL crystals may be present in the cap. These crystals will dissolve in the soak or they can be simply rinsed with tap water
- Always calibrate close to the expected measurement value
- A sponge is located in the electrode protective cap. Keep this sponge soaked with a pH 4 solution to preserve Electrode life during storage

Replacing Electrodes

The ExStik™ is shipped with an electrode attached. Electrode life is limited and is dependent on (among other factors) frequency of use and care. If the electrode needs to be replaced, follow these steps for removing and connecting electrodes. Note that the PH110 has a refillable electrode.

1. To remove an electrode, unscrew and completely remove the electrode retaining collar.
2. Gently rock the electrode from side to side, pulling it away from the meter, until it disconnects.
3. To attach an electrode, carefully plug the electrode into the meter socket (note that the electrode connector is keyed, ensuring proper connection).
4. Secure the electrode in place by tightly turning the collar in place. (a rubber gasket seals the electrode with the meter).

Automatic Electrode Recognition

When the ExStik™ is turned on, it recognizes the type of electrode that is connected and displays the appropriate unit of measure. Attach electrode before turning the ExStik™ on.

Powering the ExStik™

If the batteries are weak, the 'BAT' indicator appears on the LCD. Press the ON/OFF key to turn the ExStik™ on or off. The auto power off feature shuts the ExStik™ off automatically after 10 minutes of inactivity to preserve battery life.

Operation

Overview

When the electrode is placed in a solution, the main display and bargraph indicate the pH reading while the lower display reads temperature (readings flash until they have stabilized). The bargraph is 'center zero', i.e. at pH 7 there is no display. As the pH rises, the bar moves from the center to the right. If the pH drops, the bar moves from the center to the left.

pH Calibration (1, 2, or 3 points)

A two point calibration with a buffer of 7 plus 4 or 10 (whichever is nearest to the expected sample value) is always recommended. A one point calibration (choose the value closest to the expected sample value) is also valid. For best accuracy, always calibrate at the sample temperature.

1. Place the electrode into a buffer solution (4, 7, or 10) and momentarily press the CAL key. pH 7 should be calibrated first, then 4 and/or 10 pH.
2. The ExStik™ automatically recognizes the solution and calibrates itself to that value. Note: If the solution is more than 1pH off from the 4, 7, or 10pH standard, the ExStik™ will assume an error and abort the calibration. CAL and END will be displayed.
3. During calibration, the pH reading flashes on the main display.
4. When calibration is complete, the ExStik™ automatically displays 'END' and returns to normal operation mode.
5. The appropriate circled indicator ④ ,⑦ , or ⑩ will appear on the LCD when a calibration has been completed. The calibration data is stored until a new calibration is performed.
6. For a two or three point calibration, repeat steps 1-4.

Note: Always turn the meter off and then on before calibrating to allow sufficient time to complete the calibrations during one power cycle. If the meter auto powers off during calibration the calibrations remain valid, but new calibrations will turn the circled indicators off.

Note: The Automatic Temperature Compensation (ATC) circuit is not active during calibration. To ensure a more accurate calibration, make sure that the calibration buffers are at 25°C (77°F).

RESET

If the meter will not calibrate or displays a -1, reset the meter and attempt to re-calibrate.

1. Turn off the meter.
2. Remove the battery cartridge from the top of the meter.
3. Press the On/Off button for 10 seconds to bleed off all charges within the meter.
4. Re-insert the batteries and power on the meter.
5. Attempt to re-calibrate the meter.

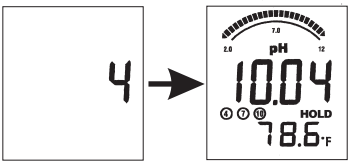
Changing the Displayed Temperature Units

Press and hold the CAL button for approx. 3 seconds. The °C or °F icon will change first and the numerical temperature value will change *after* the button is released. If the Calibration mode is accidentally accessed 'CAL' appears on the LCD. Simply turn the ExStik™ off and start again.

Data Hold

Momentarily press the MODE button to freeze the current reading. The HOLD display icon will appear along with the held reading. The held reading will also be stored in memory. Momentarily press the MODE key to return to normal operation.

15-Storing Readings into Memory



1. Momentarily press the MODE button to store a reading. The LCD will briefly display the memory location number and then the value stored (Data Hold will activate).
2. Momentarily press MODE again to return to normal operation.
3. Repeat step 1 to store the next reading and so on.
4. After 15 readings are stored the ExStik™ will return to memory location 1 and start overwriting existing data with newly stored data.

Recalling Stored Readings

Note: Check that the HOLD symbol is not displayed. If it is, exit the HOLD function by momentarily pressing the MODE button.

1. Momentarily press the CAL button and then press the MODE button immediately after CAL is displayed; the storage location number (1 through 15) will flash. If the CAL mode is accidentally accessed (display flashing), press the CAL button again to exit.
2. The last reading stored will be displayed first. To advance through the stored readings, momentarily press the MODE button. The location number is displayed first, followed by the reading stored in that location.
3. To exit the recall mode, momentarily press the CAL button and the ExStik™ will return to normal operation.

CAL Reminder Display

When the ExStik™ is turned on in the pH mode for the 15th time without recalibration, the 'CAL' icon appears on the LCD indicating that the ExStik™ may require calibration. Some applications may require recalibration of the electrode more frequently than others. The CAL display is simply a reminder and will turn off when the pH electrode is recalibrated.

RENEW Display

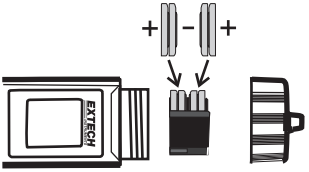
A flashing 'RENEW' warning indicates that the probe may be nearing the end of its useful life. If cleaning or recalibration does not cause the RENEW icon to disappear, replace the electrode. The RENEW display appears when the output of the pH electrode fails a diagnostic test.

Considerations

- If the unit appears to be locked (display frozen) it is possible that the Data Hold mode has been inadvertently accessed by pressing the MODE button. Simply press the MODE button again or turn the meter off and restart if the display appears frozen.
- If the meter does latch up and no button presses revive it, remove the batteries, push the ON button for 10 seconds and then reinsert the batteries.
- Note that if the batteries are removed, any stored readings will be discarded. Also, the user calibration data for pH will be cleared. New user pH calibration data is required. Factory calibration data for all models will be retained, however.

Battery Replacement

1. Twist off the battery compartment cap
2. Replace the four (4) 2032 batteries observing polarity.
3. Replace the battery compartment cap



Never dispose of used batteries or rechargeable batteries in household waste. As consumers, users are legally required to take used batteries to appropriate collection sites, the retail store where the batteries were purchased, or wherever batteries are sold.

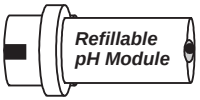
Disposal: Do not dispose of this instrument in household waste. The user is obligated to take end-of-life devices to a designated collection point for the disposal of electrical and electronic equipment.

Other Battery Safety Reminders

- Never dispose of batteries in a fire. Batteries may explode or leak.
- Never mix battery types. Always install new batteries of the same type.

pH Electrode Refilling (pH110/115 refillable electrode only)

The refillable electrode does not need to be detached from the body of the ExStik™ in order to perform the refilling procedure. Refillable electrodes (PH115) have a removable reference junction (slotted) and the word REFILLABLE on the side of the electrode housing.

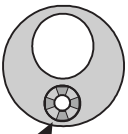


Removing the Reference Junction

The removal tool supplied with the PH113 Refill Kit is used to remove the reference junction from the sensing surface of the electrode. If the reference junction does not have slots for the 'teeth' of the removal tool to lock onto, the electrode is NOT refillable.

Holding the electrode upside down, unscrew and remove the reference junction using the removal tool.

Junction removal tool



Reference junction

Filling the Electrode

1. Once the reference junction is removed, fill the cavity with the refill solution supplied in the Refill Kit.
2. Replace the reference junction using the removal/installation tool. (Spare junctions are provided if needed).

Filling Solution

The supplied container includes 15ml of filling solution. There is enough solution for 4 to 5 refills. Use only the supplied solution for refilling the electrode.

Specifications

Display	Multifunction LCD with Bargraph
Operating conditions	32 to 122°F (0 to 50°C) / < 80% RH
Range and Accuracy	0.00 to 14.00 / ± 0.01pH typical
Temp. Compensation	Automatic from 32 to 194°F (0 to 90°C)
Temperature Range	23 to 194°F (-5 to 90°C)
Temperature Resolution	0.1° up to 99.9 then 1° thereafter
Temperature Accuracy	± 1°C/1.8°F [from -5 to 50°C (23 to 122°F)]
	± 3°C/5.4°F [from 50 to 90°C (122 to 194°F)]
Measurement storage	15 tagged (numbered) readings
Power	Four (4) CR2032 button batteries
Low battery indication	'BAT' appears on the LCD
Auto power off	After 10 minutes of inactivity
Dimensions	1.4x6.8x1.6"(35.6x172.7x40.6mm); 3.85oz (110g)

Optional Accessories

- Tripak buffers with 4, 7 & 10 pH capsules (6 each) plus two rinsing solutions (Part Number: PH103)
- pH 4.01 buffer, pint, (Part Number PH4-P)
- pH 7.00 buffer, pint, (Part Number PH7-P)
- pH 10.00 buffer, pint, (Part Number PH10-P)
- Spare pH Electrode – non-refillable (Part Number: PH105)
- Spare pH Electrode - refillable (Part number PH115)
- Electrode Refill solution (Part number PH113)
- Spare ORP electrode (Part Number: RE305)
- Spare Chlorine electrode (Part Number: CL205)
- Weighted base with 5 solution cups (Part Number: EX006)

Note: If the unit is to be converted for ORP or Chlorine use by attaching the proper electrode, please visit www.extech.com to download the proper User Guide

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APPENDIX B
DISCHARGE SAMPLING FIELD FORMS

Second Half 2017 Operations and Maintenance Report forJuly through December for the Zanesville Well Field Site in Zanesville, OH

Stantec

Discharge Monitoring Sampling Form

Client LTC	Site Zanesville	Project Number 182602727	
Field Staff Eric Cain	Date 7-10-17	Time 15:10	Temp 80°
Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (Circle)		Wind (vel/dir)	

Well ID	Time Sampled	Comments
I-1	OFF	Performing maint. Lane Drilling
I-2	14:00	
I-3	14:05	
I-4	14:10	
Tower INF	14:15	
Tower EFF	14:20	

(Above sampling locations are analyzed for cis-1,2-DCE, trans-1,2-DCE, and TCE only)

River Out	14:30	PH = 8.18
W-6 Out	14:45	PH = 7.44
W-12 Out	15:00	PH = 7.59

(Note: River Out, W-6 Out & W-12 Out are also analyzed for: O&G, pH, TSS, Cn, Hardness, and Alkalinity)

Sample Information

Analysis	VOC 624	Metals (Ag,Cu,Fe,Hg,Zn)	Cn	~~pH~~, TSS	O&G 1664
Preservative	HCl	HNO3	NaOH	None	~~None~~ HCL
Container type and Contenance	Glass 40mL	Plastic 500 mL	Plastic 250 mL	Plastic 250 mL	~~Glass~~ 1 Plastic Liter
# of Cont.	3	1	1	2	2

Notes:

Monitoring Well Integrity Checklist:

	yes	no
Well identification number clearly marked?	☒	☐
Are soils surrounding the well pad eroded?	☒	☐

Comments/Needed Repairs: I-1 Sink Hole Lane Drilling will Back Fill

Trip Blank (yes/no): (If no, explain.)

Cooler FedEx Tracking Number: 670 9740 4367

Custody Seals (yes/no):

Samplers Signature:

Discharge Monitoring Sampling Form

Stantec

Client LTC	Site Zanesville	Project Number/ 8260227	
Field Staff Eric Cain	Date 8-9-17	Time 9:30	Temp 79
Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (Circle)		Wind (vel/dir)	

Well ID	Time Sampled	Comments
I-1	8-8-17 2030	
I-2	8-8-17 2035	
I-3	8-8-17 2040	
I-4	8-8-17 2045	
Tower INF	8-8-17 2050	
Tower EFF	8-8-17 2055	

(Above sampling locations are analyzed for cis-1,2-DCE, trans-1,2-DCE, and TCE only)

River Out	8-9-17 0830	
W-6 Out	8-9-17 0900	
W-12 Out	8-9-17 0915	

(Note: River Out, W-6 Out & W-12 Out are also analyzed for: O&G, pH, TSS, Cn, Hardness, and Alkalinity)

Sample Information

Analysis	VOC 624	Metals (Ag,Cu,Fe,Hg,Zn)	Cn	pH, TSS	O&G 1664
Preservative	HCl	HNO3	NaOH	None	None
Container type and Contenance	Glass 40mL	Plastic 500 mL	Plastic 250 mL	Plastic 250 mL	Glass 1 Liter
# of Cont.	3	1	1	1	2

Notes:

Monitoring Well Integrity Checklist:

	yes	no
Well identification number clearly marked?	☒	☐
Are soils surrounding the well pad eroded?	☐	☒

Comments/Needed Repairs:

Trip Blank (yes/no): (If no, explain.)

Cooler FedEx Tracking Number: 7255 6932 3840

Custody Seals (yes/no):

Samplers Signature: Eric Cain

Discharge Monitoring Sampling Form

Stantec

Client: UTC	**Site** Zanesville Well Field		**Project Number** 182602727
Field Staff E.C	**Date** 9-5-17	**Time** 15:50	**Temp** 71
Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (Circle)		**Wind** (vel/dir) WSW 8 MPH	

Well ID	Time Sampled	Comments
I-1	15:30	
I-2	15:35	
I-3	15:40	
I-4	15:45	
Tower INF	15:50	
Tower EFF	15:55	

(Above sampling locations are analyzed for cis-1,2-DCE, trans-1,2-DCE, and TCE only)

		Document pH on COC	
River Out	16:00	pH	8.22
W-6 Out	16:25	pH	7.70
W-12 Out	16:45	pH	7.73

(Note: River Out, W-6 Out & W-12 Out are also analyzed for: O&G, TSS, Cn)

Sample Information

Analysis	VOC 624	Metals (Ag,Cu,Fe,Hg,Zn)	TSS	O&G 1664	CN (cyanide)
Preservative	HCl	HNO3	None	HCL	NaOH with Ascorbic Acid
Container type and Contenance	Glass 40mL	Plastic 500 mL	Poly 1 Liter	Glass 1 Liter	Glass 60 mL
# of Cont.	3	1	2	2	1

Notes: _____

Monitoring Points

	yes	no
Free and Clear of vegetation?	☒	☐
Signs intact, visible, and in good condition?	☒	☐

Comments/Needed Repairs: _____

Trip Blank (yes/no): _____ **(If no, explain.)**

Cooler FedEx Tracking Number: _____

Custody Seals (yes/no): _____

Samplers Signature: _____

Discharge Monitoring Sampling Form

Stantec

Client	UTC	**Site**	10/4/17	**Project Number**	182602777
Field Staff	Jake Reldsen	**Date**	UTC-Zanesville	**Time**	1600 **Temp** 79°F
Weather	sunny - Part.Cldy - OverCast - fog - Rain - Snow (Circle)			**Wind** (vel/dir)	3 mph SSE

Well ID	Time Sampled	Comments
I-1	1730	
I-2	1735	
I-3	1740	
I-4	1745	
Tower INF	1750	
Tower EFF	~~1755~~ 1725	

(Above sampling locations are analyzed for cis-1,2-DCE, trans-1,2-DCE, and TCE only)

River Out	1720	PH = 8.20
W-6 Out	1640	PH = 7.60
W-12 Out	1620	PH = 7.54

(Note: River Out, W-6 Out & W-12 Out are also analyzed for: O&G, pH, TSS, Cn, Hardness, and Alkalinity)

Sample Information

Analysis	VOC 624	Metals (Ag,Cu,Fe,Hg,Zn)	Cn	pH, TSS	O&G 1664
Preservative	HCl	HNO3	NaOH	None	None
Container type and Contenance	Glass 40mL	Plastic 500 mL	Plastic 250 mL	Plastic 250 mL	Glass 1 Liter
# of Cont.	3	1	1	1 → 2	2

Notes:

Monitoring Well Integrity Checklist:

	yes	no
Well identification number clearly marked?	☒	☐
Are soils surrounding the well pad eroded?	☐	☒

Comments/Needed Repairs:

Trip Blank (yes/no): **(If no, explain.)**

Cooler FedEx Tracking Number: 7750 6931 2501

Custody Seals (yes/no): 302, 304

Samplers Signature:

Discharge Monitoring Sampling Form

Stantec

Client: UTC	Site Zanesville Well Field	Project Number 182602727
Field Staff D. Miller	Date 11/9/17	Time 8:00	Temp 33°
Weather ~~Sunny~~ - Part.Cldy - OverCast - fog - Rain - Snow (Circle)		Wind (vel/dir) 0-5 NE

Well ID	Time Sampled	Comments
I-1	9:04	
I-2	9:10	
I-3	9:16	
I-4	9:22	
Tower INF	9:31	
Tower EFF	9:37	

(Above sampling locations are analyzed for cis-1,2-DCE, trans-1,2-DCE, and TCE only)

		Document pH on COC
River Out	10:05	pH 8.29
W-6 Out	10:50	pH 7.71
W-12 Out	11:11	pH 7.63 Sampled from port. Outlet Submerged in River.

(Note: River Out, W-6 Out & W-12 Out are also analyzed for: O&G, TSS, Cn)

Sample Information

Analysis	VOC 624	Metals (Ag,Cu,Fe,Hg,Zn)	TSS	O&G 1664	CN (cyanide)
Preservative	HCl	HNO3	None	HCL	NaOH with Ascorbic Acid
Container type and Contenance	Glass 40mL	Plastic 500 mL	Poly 1 Liter	Glass 1 Liter	Glass 60 mL
# of Cont.	3	1	2	2	1

Notes: Sampled W-12 from port because outlet was under water.

Monitoring Points

	yes	no
Free and Clear of vegetation?	☐	☐
Signs intact, visible, and in good condition?	☐	☐

Comments/Needed Repairs:

Trip Blank (yes/no): Yes (If no, explain.)

Cooler FedEx Tracking Number: 4107730913311

Custody Seals (yes/no): Yes

Samplers Signature: Dave Miller

Discharge Monitoring Sampling Form

Stantec

Client VIC	Site ZANESVILLE	Project Number 182602721	
Field Staff Eric Cash	Date 12-4-17	Time 14:45	Temp 60
Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (Circle)		Wind (vel/dir) S 9 MPH	

Well ID	Time Sampled	Comments
I-1	13:30	
I-2	13:35	
I-3	13:40	
I-4	13:45	
Tower INF	13:50	
Tower EFF	13:55	

(Above sampling locations are analyzed for cis-1,2-DCE, trans-1,2-DCE, and TCE only)

River Out	14:10	pH = 8.22
W-6 Out	14:25	7.75
W-12 Out	14:40	7.82

(Note: River Out, W-6 Out & W-12 Out are also analyzed for: O&G, pH, TSS, Cn, Hardness, and Alkalinity)

Sample Information

Analysis	VOC 624	Metals (Ag,Cu,Fe,Hg,Zn)	Cn	pH, TSS	O&G 1664
Preservative	HCl	HNO3	NaOH	None	None
Container type and Contenance	Glass 40mL	Plastic 500 mL	Plastic 250 mL	Plastic 250 mL	Glass 1 Liter
# of Cont.	3	1	1	1	2

Notes:

Monitoring Well Integrity Checklist:

	yes	no
Well identification number clearly marked?	☑	☐
Are soils surrounding the well pad eroded?	☐	☒

Comments/Needed Repairs:

Trip Blank (yes/no): YES (If no, explain.)

Cooler FedEx Tracking Number: 7950 6934 0773

Custody Seals (yes/no): YES

Samplers Signature:

APPENDIX C
ANALYTICAL DATA PACKAGES

Second Half 2017 Operations and Maintenance Report for July through December for the Zanesville Well Field Site in Zanesville, OH

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

e-Hardcopy 2.0
Automated Report

Technical Report for

United Technologies Corporation

SECORINI: Zanesville OH, Monthly

182602727

SGS Accutest Job Number: JC46773

Sampling Date: 07/10/17

Report to:

Stantec Consulting Corporation
8770 Guion Road Suite B
Indianapolis, IN 46268
susan.hall@stantec.com

ATTN: Susan Hall

Total number of pages in report: **160**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Sample Summary

United Technologies Corporation

Job No: JC46773

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC46773-1	07/10/17	14:00	EC	07/12/17	AQ	Ground Water	I-2
JC46773-2	07/10/17	14:05	EC	07/12/17	AQ	Ground Water	I-3
JC46773-3	07/10/17	14:10	EC	07/12/17	AQ	Ground Water	I-4
JC46773-4	07/10/17	14:15	EC	07/12/17	AQ	Influent	INFLUENT
JC46773-5	07/10/17	14:20	EC	07/12/17	AQ	Effluent	EFFLUENT
JC46773-6	07/10/17	14:30	EC	07/12/17	AQ	Ground Water	RIVOUT
JC46773-6A	07/10/17	14:30	EC	07/12/17	AQ	Ground Water	RIVOUT
JC46773-7	07/10/17	14:45	EC	07/12/17	AQ	Ground Water	W-6
JC46773-7A	07/10/17	14:45	EC	07/12/17	AQ	Ground Water	W-6
JC46773-8	07/10/17	15:00	EC	07/12/17	AQ	Ground Water	W-12
JC46773-8A	07/10/17	15:00	EC	07/12/17	AQ	Ground Water	W-12
JC46773-9	07/10/17	15:00	EC	07/12/17	AQ	Trip Blank Water	TRIP BLANKS

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: United Technologies Corporation **Job No** JC46773

Site: SECORINI: Zanesville OH, Monthly **Report Date** 7/14/2017 5:49:24 PM

On 07/12/2017, 8 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 3.5 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC46773 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method EPA 624

Matrix: AQ **Batch ID:** VT9259

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC46604-1MS, JC46729-1DUP were used as the QC samples indicated.
- VT9259-MB for Trichloroethene: MDL from current instrument.

Metals By Method EPA 200.7

Matrix: AQ **Batch ID:** MP1887

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC46773-7AMS, JC46773-7AMSD, JC46773-7ASDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Copper, Zinc are outside control limits for sample MP1887-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals By Method EPA 245.1

Matrix: AQ **Batch ID:** MP1888

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC46773-6AMS, JC46773-6AMSD were used as the QC samples for metals.

Wet Chemistry By Method EPA 1664A

Matrix: AQ **Batch ID:** GP6516

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC46703-3MS, JC46713-6DUP were used as the QC samples for HEM Oil and Grease.
- RPD(s) for Duplicate for HEM Oil and Grease are outside control limits for sample GP6516-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method EPA 335.4/LACHAT

Matrix:	AQ	Batch ID:	GP6532

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC46651-1DUP, JC46651-1MS were used as the QC samples for Cyanide.
- Matrix Spike Recovery(s) for Cyanide are outside control limits. Spike recovery indicates possible matrix interference.

Wet Chemistry By Method SM2540 D-11

Matrix:	AQ	Batch ID:	GN66808

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC46766-1DUP were used as the QC samples for Solids, Total Suspended.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC46773
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 07/10/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC46773-1	**I-2**					
cis-1,2-Dichloroethene		5.8	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		5.8	1.0		ug/l	EPA 624
Trichloroethene		13.6	1.0		ug/l	EPA 624
JC46773-2	**I-3**					
cis-1,2-Dichloroethene		1.6	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		1.6	1.0		ug/l	EPA 624
Trichloroethene		7.6	1.0		ug/l	EPA 624
JC46773-3	**I-4**					
cis-1,2-Dichloroethene		81.8	1.0		ug/l	EPA 624
trans-1,2-Dichloroethene		1.6	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		83.4	1.0		ug/l	EPA 624
Trichloroethene		141	1.0		ug/l	EPA 624
JC46773-4	**INFLUENT**					
cis-1,2-Dichloroethene		29.5	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		29.5	1.0		ug/l	EPA 624
Trichloroethene		61.7	1.0		ug/l	EPA 624
JC46773-5	**EFFLUENT**					
cis-1,2-Dichloroethene		2.6	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		2.6	1.0		ug/l	EPA 624
Trichloroethene		2.8	1.0		ug/l	EPA 624
JC46773-6	**RIVOUT**					
cis-1,2-Dichloroethene		2.2	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		2.2	1.0		ug/l	EPA 624
Trichloroethene		2.2	1.0		ug/l	EPA 624
JC46773-6A	**RIVOUT**					
Iron		783	100		ug/l	EPA 200.7
Solids, Total Suspended		4.8	4.0		mg/l	SM2540 D-11
JC46773-7	**W-6**					
cis-1,2-Dichloroethene		9.7	1.0		ug/l	EPA 624

Summary of Hits

Job Number: JC46773
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 07/10/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
1,2-Dichloroethene (total)		9.7	1.0		ug/l	EPA 624
Trichloroethene		4.8	1.0		ug/l	EPA 624
JC46773-7A	**W-6**					
Iron		269	100		ug/l	EPA 200.7
JC46773-8	**W-12**					
cis-1,2-Dichloroethene		2.2	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		2.2	1.0		ug/l	EPA 624
Trichloroethene		5.8	1.0		ug/l	EPA 624
JC46773-8A	**W-12**					
Iron		249	100		ug/l	EPA 200.7
JC46773-9	**TRIP BLANKS**					

No hits reported in this sample.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID:	I-2		
Lab Sample ID:	JC46773-1	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225523.D	1	07/12/17 17:19	PR	n/a	n/a	VT9259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	5.8	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	5.8	1.0	ug/l	
79-01-6	Trichloroethene	13.6	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	100%		76-122%
2037-26-5	Toluene-D8 (SUR)	106%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	97%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-3		
Lab Sample ID:	JC46773-2	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225524.D	1	07/12/17 17:50	PR	n/a	n/a	VT9259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	1.6	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	1.6	1.0	ug/l	
79-01-6	Trichloroethene	7.6	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	99%		76-122%
2037-26-5	Toluene-D8 (SUR)	106%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	96%		80-120%
1868-53-7	Dibromofluoromethane (S)	99%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-4		
Lab Sample ID:	JC46773-3	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225525.D	1	07/12/17 18:20	PR	n/a	n/a	VT9259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	81.8	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.6	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	83.4	1.0	ug/l	
79-01-6	Trichloroethene	141	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	95%		76-122%
2037-26-5	Toluene-D8 (SUR)	106%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	102%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: INFLUENT
Lab Sample ID: JC46773-4
Matrix: AQ - Influent
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 07/10/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225527.D	1	07/12/17 19:21	PR	n/a	n/a	VT9259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	29.5	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	29.5	1.0	ug/l	
79-01-6	Trichloroethene	61.7	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	102%		76-122%
2037-26-5	Toluene-D8 (SUR)	105%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	94%		80-120%
1868-53-7	Dibromofluoromethane (S)	99%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: EFFLUENT
Lab Sample ID: JC46773-5
Matrix: AQ - Effluent
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 07/10/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225531.D	1	07/12/17 21:22	PR	n/a	n/a	VT9259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.6	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.6	1.0	ug/l	
79-01-6	Trichloroethene	2.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	98%		76-122%
2037-26-5	Toluene-D8 (SUR)	105%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	100%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC46773-6	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225528.D	1	07/12/17 19:51	PR	n/a	n/a	VT9259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.2	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.2	1.0	ug/l	
79-01-6	Trichloroethene	2.2	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	99%		76-122%
2037-26-5	Toluene-D8 (SUR)	106%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	94%		80-120%
1868-53-7	Dibromofluoromethane (S)	100%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RIVOUT
Lab Sample ID: JC46773-6A
Matrix: AQ - Ground Water
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 07/10/17
Date Received: 07/12/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]
Iron	783	100	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	07/13/17	07/13/17	JA	EPA 245.1 [1]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42405
(2) Instrument QC Batch: MA42410
(3) Prep QC Batch: MP1887
(4) Prep QC Batch: MP1888

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC46773-6A	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	07/14/17 10:43	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.2	5.2	mg/l	1	07/13/17 09:50	TT	EPA 1664A
Solids, Total Suspended	4.8	4.0	mg/l	1	07/12/17 18:10	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-6		
Lab Sample ID:	JC46773-7	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225529.D	1	07/12/17 20:22	PR	n/a	n/a	VT9259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	9.7	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	9.7	1.0	ug/l	
79-01-6	Trichloroethene	4.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	99%		76-122%
2037-26-5	Toluene-D8 (SUR)	106%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	95%		80-120%
1868-53-7	Dibromofluoromethane (S)	99%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: W-6
Lab Sample ID: JC46773-7A
Matrix: AQ - Ground Water
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 07/10/17
Date Received: 07/12/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]
Iron	269	100	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	07/13/17	07/13/17	JA	EPA 245.1 [1]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42405
(2) Instrument QC Batch: MA42410
(3) Prep QC Batch: MP1887
(4) Prep QC Batch: MP1888

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-6		
Lab Sample ID:	JC46773-7A	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	07/14/17 10:44	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.0	5.0	mg/l	1	07/13/17 09:50	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	07/12/17 18:10	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-12		
Lab Sample ID:	JC46773-8	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225530.D	1	07/12/17 20:52	PR	n/a	n/a	VT9259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.2	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.2	1.0	ug/l	
79-01-6	Trichloroethene	5.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	100%		76-122%
2037-26-5	Toluene-D8 (SUR)	105%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	95%		80-120%
1868-53-7	Dibromofluoromethane (S)	97%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-12		
Lab Sample ID:	JC46773-8A	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]
Iron	249	100	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	07/13/17	07/13/17	JA	EPA 245.1 [1]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	07/13/17	07/13/17	ND	EPA 200.7 [2]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42405
(2) Instrument QC Batch: MA42410
(3) Prep QC Batch: MP1887
(4) Prep QC Batch: MP1888

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-12		
Lab Sample ID:	JC46773-8A	**Date Sampled:**	07/10/17
Matrix:	AQ - Ground Water	**Date Received:**	07/12/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	07/14/17 10:45	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.0	5.0	mg/l	1	07/13/17 09:50	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	07/12/17 18:10	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	TRIP BLANKS		
Lab Sample ID:	JC46773-9	**Date Sampled:**	07/10/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	07/12/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225522.D	1	07/12/17 16:49	PR	n/a	n/a	VT9259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	99%		76-122%
2037-26-5	Toluene-D8 (SUR)	107%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	99%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

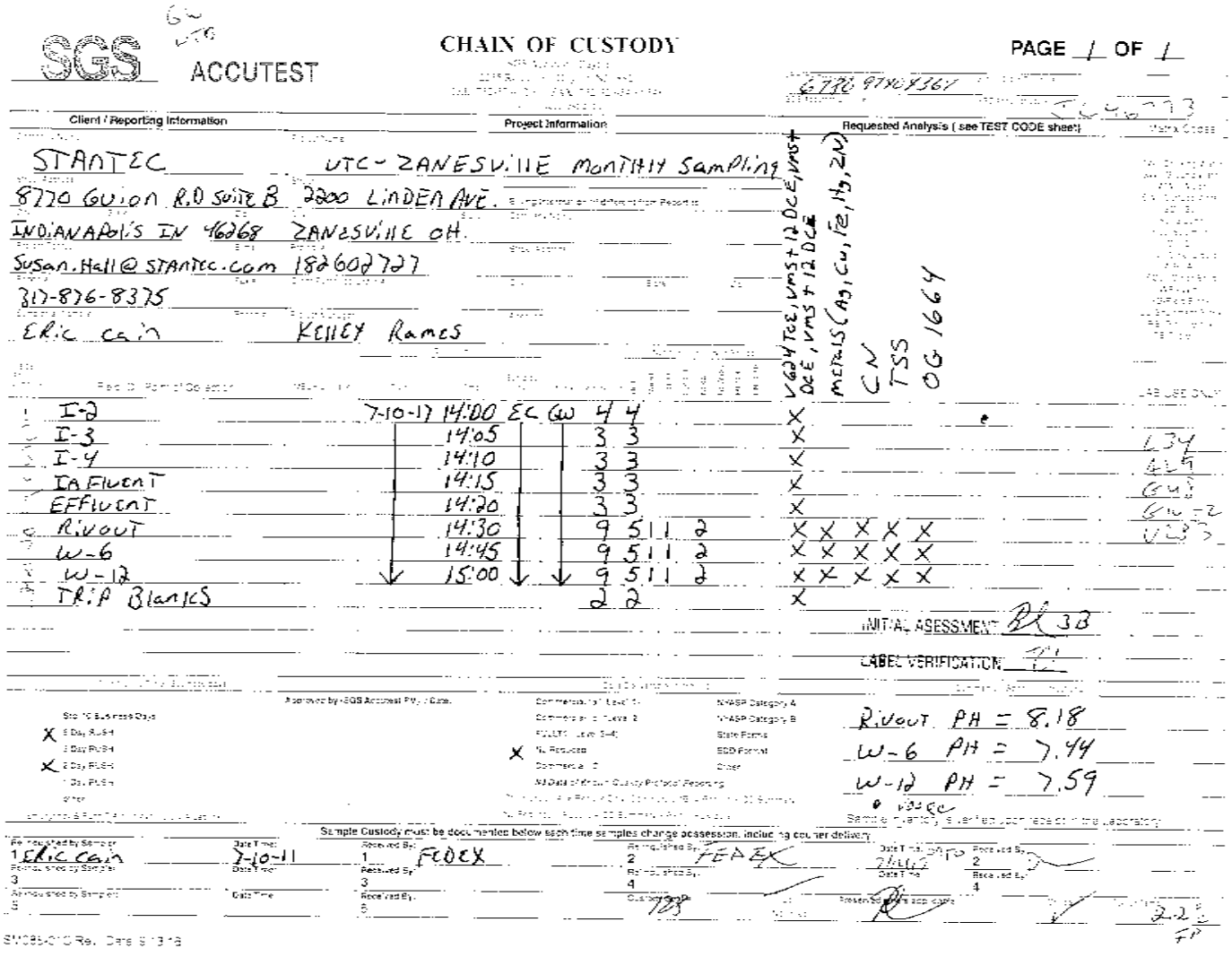
5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody



SGS ACCUTEST

CHAIN OF CUSTODY

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6730 97404367

JC46773

Client / Reporting Information

STANTEC
8770 GUION RD SUITE B
INDIANAPOLIS IN 46268
Susan.Hall@STANTEC.com
317-876-8375
Eric Cain

Project Information

UTC - ZANESVILLE MONTHLY SAMPLING
2200 LINDEN AVE.
ZANESVILLE OH.
182602727
KELLEY Ramos

Requested Analysis (see TEST CODE sheet)

Field ID / Point of Collection	Date	Time	Sample Type	Matrix	Containers		VOC 624 TCE, VMS + 12 DCE, VMS + 12 DCE	Metals (Ag, Cu, Fe, Hg, Zn)	CN	TSS	OG 1664	LAB USE ONLY
I-2	7-10-17	14:00	EC	GW	4	4	X					
I-3		14:05			3	3	X					L34
I-4		14:10			3	3	X					G29
IA FLUENT		14:15			3	3	X					G43
EFFLUENT		14:20			3	3	X					GW-2
RIVOUT		14:30			9	5 1 1 2	X	X X X	X	X		V283
W-6		14:45			9	5 1 1 2	X	X X X	X	X		
W-12		15:00			9	5 1 1 2	X	X X X	X	X		
TRIP Blanks					2	2	X					

INITIAL ASESSMENT BL 3B

LABEL VERIFICATION TL

Approved by SGS Accutest PM / Date

Standard Turnaround Days
X 5 Day RUSH
3 Day RUSH
X 2 Day RUSH
1 Day RUSH
Other

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULLT (Level 3-4)
X NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting

NYASP Category A
NYASP Category B
State Forms
EDD Format
Other

RIVOUT PH = 8.18
W-6 PH = 7.44
W-12 PH = 7.59
• VOCs

Sample Inventory is verified upon receipt in the laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery

Relinquished by Sampler	Date Time	Received By	Relinquished By	Date Time	Received By
1 ERIC Cain	7-10-11	1 FEDEX	2 FEDEX	7/11/17	2
3		3	4		4
5		5	Custody Seal Intact	Preserved where applicable	2.2 FP

SM089-010 Rev. Date 9/13/16

JC46773: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC46773 **Client:** _____ **Project:** _____

Date / Time Received: 7/12/2017 9:50:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.2);

Cooler Temps (Corrected) °C: Cooler 1: (3.5);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC46773: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC46773

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC46773-1	Collected: 10-JUL-17 14:00 By: EC		Received: 12-JUL-17 By: DDH			
I-2						
JC46773-1	EPA 624	12-JUL-17 17:19	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC46773-2	Collected: 10-JUL-17 14:05 By: EC		Received: 12-JUL-17 By: DDH			
I-3						
JC46773-2	EPA 624	12-JUL-17 17:50	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC46773-3	Collected: 10-JUL-17 14:10 By: EC		Received: 12-JUL-17 By: DDH			
I-4						
JC46773-3	EPA 624	12-JUL-17 18:20	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC46773-4	Collected: 10-JUL-17 14:15 By: EC		Received: 12-JUL-17 By: DDH			
INFLUENT						
JC46773-4	EPA 624	12-JUL-17 19:21	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC46773-5	Collected: 10-JUL-17 14:20 By: EC		Received: 12-JUL-17 By: DDH			
EFFLUENT						
JC46773-5	EPA 624	12-JUL-17 21:22	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC46773-6	Collected: 10-JUL-17 14:30 By: EC		Received: 12-JUL-17 By: DDH			
RIVOUT						
JC46773-6	EPA 624	12-JUL-17 19:51	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC46773-7	Collected: 10-JUL-17 14:45 By: EC		Received: 12-JUL-17 By: DDH			
W-6						

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC46773

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC46773-7	EPA 624	12-JUL-17 20:22	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC46773-8	Collected: 10-JUL-17 15:00 By: EC		Received: 12-JUL-17 By: DDH			
W-12						
JC46773-8	EPA 624	12-JUL-17 20:52	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC46773-9	Collected: 10-JUL-17 15:00 By: EC		Received: 12-JUL-17 By: DDH			
TRIP BLANKS						
JC46773-9	EPA 624	12-JUL-17 16:49	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC46773-6A	Collected: 10-JUL-17 14:30 By: EC		Received: 12-JUL-17 By: DDH			
RIVOUT						
JC46773-6A	SM2540 D-11	12-JUL-17 18:10	TZW			TSS
JC46773-6A	EPA 245.1	13-JUL-17 09:35	JA	13-JUL-17	JA	HG
JC46773-6A	EPA 1664A	13-JUL-17 09:50	TT	13-JUL-17	TT	OG1664
JC46773-6A	EPA 200.7	13-JUL-17 21:43	ND	13-JUL-17	RM	AG,CU,FE,ZN
JC46773-6A	EPA 335.4/LACHAT	14-JUL-17 10:43	BM	13-JUL-17	TG	CN
JC46773-7A	Collected: 10-JUL-17 14:45 By: EC		Received: 12-JUL-17 By: DDH			
W-6						
JC46773-7A	SM2540 D-11	12-JUL-17 18:10	TZW			TSS
JC46773-7A	EPA 245.1	13-JUL-17 09:36	JA	13-JUL-17	JA	HG
JC46773-7A	EPA 1664A	13-JUL-17 09:50	TT	13-JUL-17	TT	OG1664
JC46773-7A	EPA 200.7	13-JUL-17 21:35	ND	13-JUL-17	RM	AG,CU,FE,ZN
JC46773-7A	EPA 335.4/LACHAT	14-JUL-17 10:44	BM	13-JUL-17	TG	CN
JC46773-8A	Collected: 10-JUL-17 15:00 By: EC		Received: 12-JUL-17 By: DDH			
W-12						
JC46773-8A	SM2540 D-11	12-JUL-17 18:10	TZW			TSS
JC46773-8A	EPA 245.1	13-JUL-17 09:38	JA	13-JUL-17	JA	HG
JC46773-8A	EPA 1664A	13-JUL-17 09:50	TT	13-JUL-17	TT	OG1664
JC46773-8A	EPA 200.7	13-JUL-17 21:48	ND	13-JUL-17	RM	AG,CU,FE,ZN

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC46773

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC46773-8A	EPA 335.4/LACHAT	14-JUL-17 10:45	BM	13-JUL-17	TG	CN

SGS Accutest Internal Chain of Custody

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 07/12/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC46773-1.1	Secured Storage	Payal Rana	07/12/17 13:49	Retrieve from Storage
JC46773-1.1	Payal Rana	GCMST	07/12/17 13:49	Load on Instrument
JC46773-1.1	GCMST	Payal Rana	07/13/17 10:20	Unload from Instrument
JC46773-1.1	Payal Rana	Secured Storage	07/13/17 10:20	Return to Storage
JC46773-2.2	Secured Storage	Payal Rana	07/12/17 13:49	Retrieve from Storage
JC46773-2.2	Payal Rana	GCMST	07/12/17 13:49	Load on Instrument
JC46773-2.2	GCMST	Payal Rana	07/13/17 10:20	Unload from Instrument
JC46773-2.2	Payal Rana	Secured Storage	07/13/17 10:20	Return to Storage
JC46773-3.1	Secured Storage	Payal Rana	07/12/17 13:49	Retrieve from Storage
JC46773-3.1	Payal Rana	GCMST	07/12/17 13:49	Load on Instrument
JC46773-3.1	GCMST	Payal Rana	07/13/17 10:20	Unload from Instrument
JC46773-3.1	Payal Rana	Secured Storage	07/13/17 10:20	Return to Storage
JC46773-4.1	Secured Storage	Payal Rana	07/12/17 13:49	Retrieve from Storage
JC46773-4.1	Payal Rana	GCMST	07/12/17 13:49	Load on Instrument
JC46773-4.1	GCMST	Payal Rana	07/13/17 10:20	Unload from Instrument
JC46773-4.1	Payal Rana	Secured Storage	07/13/17 10:20	Return to Storage
JC46773-5.2	Secured Storage	Payal Rana	07/12/17 13:49	Retrieve from Storage
JC46773-5.2	Payal Rana	GCMST	07/12/17 13:49	Load on Instrument
JC46773-5.2	GCMST	Payal Rana	07/13/17 10:20	Unload from Instrument
JC46773-5.2	Payal Rana	Secured Storage	07/13/17 10:20	Return to Storage
JC46773-6.2	Secured Storage	Eric Barksdale	07/12/17 19:42	Retrieve from Storage
JC46773-6.2	Eric Barksdale	Secured Staging Area	07/12/17 19:43	Return to Storage
JC46773-6.2	Secured Staging Area	Tyrus Takacs	07/13/17 09:31	Retrieve from Storage
JC46773-6.2	Tyrus Takacs		07/13/17 12:39	Depleted
JC46773-6.3	Secured Storage	Eric Barksdale	07/12/17 19:46	Retrieve from Storage
JC46773-6.3	Eric Barksdale	Secured Staging Area	07/12/17 19:47	Return to Storage
JC46773-6.3	Secured Staging Area	Jessica Adametz	07/13/17 07:52	Retrieve from Storage
JC46773-6.3	Jessica Adametz	Radhika Mistry	07/13/17 08:25	Custody Transfer
JC46773-6.3	Radhika Mistry	Secured Storage	07/13/17 09:24	Return to Storage
JC46773-6.3.1	Radhika Mistry	Metals Digestion	07/13/17 08:59	Digestate from JC46773-6.3
JC46773-6.3.1	Metals Digestion	Radhika Mistry	07/13/17 08:59	Digestate from JC46773-6.3
JC46773-6.3.1	Radhika Mistry	Metals Digestate Storage	07/13/17 08:59	Return to Storage
JC46773-6.4	Secured Storage	Edwin Gonzalez	07/12/17 15:20	Retrieve from Storage
JC46773-6.4	Edwin Gonzalez	Secured Staging Area	07/12/17 15:20	Return to Storage
JC46773-6.4	Secured Staging Area	Timothy Zhen Wei Ho	07/12/17 16:24	Retrieve from Storage
JC46773-6.4	Timothy Zhen Wei Ho	Secured Storage	07/12/17 22:38	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 07/12/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC46773-6.6	Secured Storage	Todd Shoemaker	07/13/17 10:06	Retrieve from Storage
JC46773-6.6	Todd Shoemaker	Secured Staging Area	07/13/17 10:07	Return to Storage
JC46773-6.6	Secured Staging Area	Thomas Gabriel	07/13/17 16:39	Retrieve from Storage
JC46773-6.6	Thomas Gabriel	Secured Storage	07/13/17 16:40	Return to Storage
JC46773-6.8	Secured Storage	Payal Rana	07/12/17 13:49	Retrieve from Storage
JC46773-6.8	Payal Rana	GCMST	07/12/17 13:49	Load on Instrument
JC46773-6.8	GCMST	Payal Rana	07/13/17 10:20	Unload from Instrument
JC46773-6.8	Payal Rana	Secured Storage	07/13/17 10:20	Return to Storage
JC46773-7.1	Secured Storage	Eric Barksdale	07/12/17 19:42	Retrieve from Storage
JC46773-7.1	Eric Barksdale	Secured Staging Area	07/12/17 19:43	Return to Storage
JC46773-7.1	Secured Staging Area	Tyrus Takacs	07/13/17 09:31	Retrieve from Storage
JC46773-7.1	Tyrus Takacs		07/13/17 12:39	Depleted
JC46773-7.3	Secured Storage	Eric Barksdale	07/12/17 19:46	Retrieve from Storage
JC46773-7.3	Eric Barksdale	Secured Staging Area	07/12/17 19:47	Return to Storage
JC46773-7.3	Secured Staging Area	Jessica Adametz	07/13/17 07:52	Retrieve from Storage
JC46773-7.3	Jessica Adametz	Radhika Mistry	07/13/17 08:25	Custody Transfer
JC46773-7.3	Radhika Mistry	Secured Storage	07/13/17 09:24	Return to Storage
JC46773-7.3.1	Radhika Mistry	Metals Digestion	07/13/17 08:59	Digestate from JC46773-7.3
JC46773-7.3.1	Metals Digestion	Radhika Mistry	07/13/17 08:59	Digestate from JC46773-7.3
JC46773-7.3.1	Radhika Mistry	Metals Digestate Storage	07/13/17 08:59	Return to Storage
JC46773-7.5	Secured Storage	Edwin Gonzalez	07/12/17 15:20	Retrieve from Storage
JC46773-7.5	Edwin Gonzalez	Secured Staging Area	07/12/17 15:20	Return to Storage
JC46773-7.5	Secured Staging Area	Timothy Zhen Wei Ho	07/12/17 16:24	Retrieve from Storage
JC46773-7.5	Timothy Zhen Wei Ho		07/12/17 22:37	Depleted
JC46773-7.6	Secured Storage	Todd Shoemaker	07/13/17 10:06	Retrieve from Storage
JC46773-7.6	Todd Shoemaker	Secured Staging Area	07/13/17 10:07	Return to Storage
JC46773-7.6	Secured Staging Area	Thomas Gabriel	07/13/17 16:39	Retrieve from Storage
JC46773-7.6	Thomas Gabriel	Secured Storage	07/13/17 16:40	Return to Storage
JC46773-7.7	Secured Storage	Payal Rana	07/12/17 13:49	Retrieve from Storage
JC46773-7.7	Payal Rana	GCMST	07/12/17 13:49	Load on Instrument
JC46773-7.7	GCMST	Payal Rana	07/13/17 10:20	Unload from Instrument
JC46773-7.7	Payal Rana	Secured Storage	07/13/17 10:20	Return to Storage
JC46773-8.1	Secured Storage	Eric Barksdale	07/12/17 19:42	Retrieve from Storage
JC46773-8.1	Eric Barksdale	Secured Staging Area	07/12/17 19:43	Return to Storage
JC46773-8.1	Secured Staging Area	Tyrus Takacs	07/13/17 09:31	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 07/12/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC46773-8.1	Tyrus Takacs		07/13/17 12:39	Depleted
JC46773-8.3	Secured Storage	Eric Barksdale	07/12/17 19:46	Retrieve from Storage
JC46773-8.3	Eric Barksdale	Secured Staging Area	07/12/17 19:47	Return to Storage
JC46773-8.3	Secured Staging Area	Jessica Adametz	07/13/17 07:52	Retrieve from Storage
JC46773-8.3	Jessica Adametz	Radhika Mistry	07/13/17 08:25	Custody Transfer
JC46773-8.3	Radhika Mistry	Secured Storage	07/13/17 09:24	Return to Storage
JC46773-8.3.1	Radhika Mistry	Metals Digestion	07/13/17 08:59	Digestate from JC46773-8.3
JC46773-8.3.1	Metals Digestion	Radhika Mistry	07/13/17 08:59	Digestate from JC46773-8.3
JC46773-8.3.1	Radhika Mistry	Metals Digestate Storage	07/13/17 08:59	Return to Storage
JC46773-8.5	Secured Storage	Edwin Gonzalez	07/12/17 15:20	Retrieve from Storage
JC46773-8.5	Edwin Gonzalez	Secured Staging Area	07/12/17 15:20	Return to Storage
JC46773-8.5	Secured Staging Area	Timothy Zhen Wei Ho	07/12/17 16:24	Retrieve from Storage
JC46773-8.5	Timothy Zhen Wei Ho	Secured Storage	07/12/17 22:38	Return to Storage
JC46773-8.6	Secured Storage	Todd Shoemaker	07/13/17 10:06	Retrieve from Storage
JC46773-8.6	Todd Shoemaker	Secured Staging Area	07/13/17 10:07	Return to Storage
JC46773-8.6	Secured Staging Area	Thomas Gabriel	07/13/17 16:39	Retrieve from Storage
JC46773-8.6	Thomas Gabriel	Secured Storage	07/13/17 16:40	Return to Storage
JC46773-8.8	Secured Storage	Payal Rana	07/12/17 13:49	Retrieve from Storage
JC46773-8.8	Payal Rana	GCMST	07/12/17 13:49	Load on Instrument
JC46773-8.8	GCMST	Payal Rana	07/13/17 10:20	Unload from Instrument
JC46773-8.8	Payal Rana	Secured Storage	07/13/17 10:20	Return to Storage
JC46773-9.1	Secured Storage	Payal Rana	07/12/17 13:49	Retrieve from Storage
JC46773-9.1	Payal Rana	GCMST	07/12/17 13:49	Load on Instrument
JC46773-9.1	GCMST	Payal Rana	07/13/17 10:20	Unload from Instrument
JC46773-9.1	Payal Rana	Secured Storage	07/13/17 10:20	Return to Storage

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9259-MB	T225508.D	1	07/12/17	PR	n/a	n/a	VT9259

The QC reported here applies to the following samples: **Method:** EPA 624

JC46773-1, JC46773-2, JC46773-3, JC46773-4, JC46773-5, JC46773-6, JC46773-7, JC46773-8, JC46773-9

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene [a]	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	101%	76-122%
2037-26-5	Toluene-D8 (SUR)	108%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	95%	80-120%
1868-53-7	Dibromofluoromethane (S)	97%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.76	11	ug/l	J
	system artifact	3.92	120	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

Blank Spike Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9259-BS	T225509.D	1	07/12/17	PR	n/a	n/a	VT9259

The QC reported here applies to the following samples: **Method:** EPA 624

JC46773-1, JC46773-2, JC46773-3, JC46773-4, JC46773-5, JC46773-6, JC46773-7, JC46773-8, JC46773-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	18.6	93	72-115
156-60-5	trans-1,2-Dichloroethene	20	18.1	91	70-121
540-59-0	1,2-Dichloroethene (total)	40	36.7	92	72-117
79-01-6	Trichloroethene	20	19.1	96	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%	76-122%
2037-26-5	Toluene-D8 (SUR)	108%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%	80-120%
1868-53-7	Dibromofluoromethane (S)	99%	80-120%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46604-1MS	T225518.D	1	07/12/17	PR	n/a	n/a	VT9259
JC46604-1	T225515.D	1	07/12/17	PR	n/a	n/a	VT9259

The QC reported here applies to the following samples: **Method:** EPA 624

JC46773-1, JC46773-2, JC46773-3, JC46773-4, JC46773-5, JC46773-6, JC46773-7, JC46773-8, JC46773-9

CAS No.	Compound	JC46604-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
156-59-2	cis-1,2-Dichloroethene	ND		20	20.1	101	50-134
156-60-5	trans-1,2-Dichloroethene	ND		20	17.7	89	63-129
540-59-0	1,2-Dichloroethene (total)	ND		40	37.8	95	48-138
79-01-6	Trichloroethene	79.2		20	98.6	97	46-145

CAS No.	Surrogate Recoveries	MS	JC46604-1	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	100%	100%	76-122%
2037-26-5	Toluene-D8 (SUR)	109%	107%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	104%	96%	80-120%
1868-53-7	Dibromofluoromethane (S)	99%	101%	80-120%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46729-1DUP	T225520.D	1	07/12/17	PR	n/a	n/a	VT9259
JC46729-1	T225512.D	1	07/12/17	PR	n/a	n/a	VT9259

The QC reported here applies to the following samples: **Method:** EPA 624

JC46773-1, JC46773-2, JC46773-3, JC46773-4, JC46773-5, JC46773-6, JC46773-7, JC46773-8, JC46773-9

CAS No.	Compound	JC46729-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	22
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	14
540-59-0	1,2-Dichloroethene (total)	ND		ND		nc	22
79-01-6	Trichloroethene	0.50	J	0.50	J	0	18

CAS No.	Surrogate Recoveries	DUP	JC46729-1	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	99%	100%	76-122%
2037-26-5	Toluene-D8 (SUR)	107%	105%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%	97%	80-120%
1868-53-7	Dibromofluoromethane (S)	99%	99%	80-120%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VT9239-BFB	**Injection Date:**	06/16/17
Lab File ID:	T224913.D	**Injection Time:**	11:37
Instrument ID:	GCMST		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	11869	18.7		Pass
75	30.0 - 60.0% of mass 95	29926	47.2		Pass
95	Base peak, 100% relative abundance	63456	100.0		Pass
96	5.0 - 9.0% of mass 95	4272	6.73		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	51634	81.4		Pass
175	5.0 - 9.0% of mass 174	3949	6.22	(7.65) [a]	Pass
176	95.0 - 101.0% of mass 174	49114	77.4	(95.1) [a]	Pass
177	5.0 - 9.0% of mass 176	3412	5.38	(6.95) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9239-IC9239	T224914.D	06/16/17	12:08	00:31	Initial cal 0.5
VT9239-IC9239	T224916.D	06/16/17	13:08	01:31	Initial cal 1
VT9239-IC9239	T224917.D	06/16/17	13:39	02:02	Initial cal 2
VT9239-IC9239	T224918.D	06/16/17	14:06	02:29	Initial cal 5
VT9239-ICC9239	T224919.D	06/16/17	14:37	03:00	Initial cal 20
VT9239-IC9239	T224920.D	06/16/17	15:07	03:30	Initial cal 50
VT9239-IC9239	T224921.D	06/16/17	15:37	04:00	Initial cal 100
VT9239-IC9239	T224922.D	06/16/17	16:08	04:31	Initial cal 200
VT9239-ICV9239	T224925.D	06/16/17	18:18	06:41	Initial cal verification 20
VT9239-ICV9239	T224926.D	06/16/17	18:48	07:11	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VT9259-BFB	**Injection Date:**	07/12/17
Lab File ID:	T225505.D	**Injection Time:**	07:21
Instrument ID:	GCMST		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	11178	15.9		Pass
75	30.0 - 60.0% of mass 95	29963	42.6		Pass
95	Base peak, 100% relative abundance	70291	100.0		Pass
96	5.0 - 9.0% of mass 95	4411	6.28		Pass
173	Less than 2.0% of mass 174	195	0.28	(0.34) [a]	Pass
174	50.0 - 120.0% of mass 95	57061	81.2		Pass
175	5.0 - 9.0% of mass 174	4318	6.14	(7.57) [a]	Pass
176	95.0 - 101.0% of mass 174	56168	79.9	(98.4) [a]	Pass
177	5.0 - 9.0% of mass 176	3874	5.51	(6.90) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9259-CC9239	T225506.D	07/12/17	07:51	00:30	Continuing cal 20
VT9259-MB	T225508.D	07/12/17	08:57	01:36	Method Blank
VT9259-BS	T225509.D	07/12/17	09:42	02:21	Blank Spike
ZZZZZZ	T225511.D	07/12/17	10:43	03:22	(unrelated sample)
JC46729-1	T225512.D	07/12/17	11:13	03:52	(used for QC only; not part of job JC46773)
ZZZZZZ	T225513.D	07/12/17	11:44	04:23	(unrelated sample)
ZZZZZZ	T225514.D	07/12/17	12:14	04:53	(unrelated sample)
JC46604-1	T225515.D	07/12/17	12:45	05:24	(used for QC only; not part of job JC46773)
ZZZZZZ	T225516.D	07/12/17	13:15	05:54	(unrelated sample)
JC46604-1MS	T225518.D	07/12/17	14:16	06:55	Matrix Spike
JC46729-1DUP	T225520.D	07/12/17	15:48	08:27	Duplicate
ZZZZZZ	T225521.D	07/12/17	16:18	08:57	(unrelated sample)
JC46773-9	T225522.D	07/12/17	16:49	09:28	TRIP BLANKS
JC46773-1	T225523.D	07/12/17	17:19	09:58	I-2
JC46773-2	T225524.D	07/12/17	17:50	10:29	I-3
JC46773-3	T225525.D	07/12/17	18:20	10:59	I-4
JC46773-4	T225527.D	07/12/17	19:21	12:00	INFLUENT
JC46773-6	T225528.D	07/12/17	19:51	12:30	RIVOUT
JC46773-7	T225529.D	07/12/17	20:22	13:01	W-6
JC46773-8	T225530.D	07/12/17	20:52	13:31	W-12
JC46773-5	T225531.D	07/12/17	21:22	14:01	EFFLUENT
ZZZZZZ	T225532.D	07/12/17	21:53	14:32	(unrelated sample)

Volatile Internal Standard Area Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std:	VT9259-CC9239	**Injection Date:**	07/12/17
Lab File ID:	T225506.D	**Injection Time:**	07:51
Instrument ID:	GCMST	**Method:**	EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	96734	7.44	158424	9.48	240857	10.35	177953	16.10	237966	13.55
Upper Limit [a]	193468	7.94	316848	9.98	481714	10.85	355906	16.60	475932	14.05
Lower Limit [b]	48367	6.94	79212	8.98	120429	9.85	88977	15.60	118983	13.05

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VT9259-MB	95072	7.45	157686	9.49	238151	10.35	179031	16.10	234302	13.55
VT9259-BS	94649	7.46	159516	9.49	242527	10.35	163786	16.10	235632	13.55
ZZZZZZ	98347	7.45	168163	9.49	252153	10.35	182706	16.10	247124	13.55
JC46729-1	96106	7.45	165604	9.49	251508	10.34	184087	16.10	250120	13.56
ZZZZZZ	97402	7.45	164426	9.49	245681	10.35	179241	16.10	246984	13.55
ZZZZZZ	96678	7.46	166419	9.49	249420	10.35	180836	16.10	247452	13.55
JC46604-1	97861	7.46	161431	9.48	246389	10.35	181792	16.10	237800	13.55
ZZZZZZ	95663	7.45	161340	9.49	242449	10.34	181557	16.10	241929	13.56
JC46604-1MS	95102	7.46	188839	9.49	287522	10.35	186028	16.10	275541	13.55
JC46729-1DUP	97072	7.45	166204	9.49	249301	10.35	176381	16.10	244354	13.56
ZZZZZZ	99097	7.45	166178	9.49	247465	10.35	183158	16.10	247739	13.55
JC46773-9	98833	7.45	162346	9.49	245124	10.35	173370	16.10	238987	13.55
JC46773-1	105164	7.46	166434	9.49	246312	10.35	181781	16.10	243991	13.55
JC46773-2	99898	7.46	162453	9.48	246908	10.34	177066	16.10	242093	13.55
JC46773-3	99502	7.45	161201	9.49	249670	10.35	179058	16.10	243403	13.55
JC46773-4	103573	7.45	162279	9.49	241985	10.35	184738	16.10	242617	13.55
JC46773-6	99319	7.46	157038	9.49	239376	10.34	177113	16.10	236064	13.55
JC46773-7	102608	7.45	159911	9.49	241608	10.35	180009	16.10	237427	13.55
JC46773-8	100607	7.46	159434	9.49	238511	10.34	177349	16.10	236303	13.55
JC46773-5	98795	7.45	156581	9.49	239041	10.34	178402	16.10	237198	13.56
ZZZZZZ	97419	7.45	154370	9.49	240392	10.35	174118	16.10	238061	13.55

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC46773-1	T225523.D	100	106	97	97
JC46773-2	T225524.D	99	106	96	99
JC46773-3	T225525.D	95	106	97	102
JC46773-4	T225527.D	102	105	94	99
JC46773-5	T225531.D	98	105	97	100
JC46773-6	T225528.D	99	106	94	100
JC46773-7	T225529.D	99	106	95	99
JC46773-8	T225530.D	100	105	95	97
JC46773-9	T225522.D	99	107	97	99
JC46604-1MS	T225518.D	100	109	104	99
JC46729-1DUP	T225520.D	99	107	99	99
VT9259-BS	T225509.D	104	108	102	99
VT9259-MB	T225508.D	101	108	95	97

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4 (SUR)	76-122%
S2 = Toluene-D8 (SUR)	80-120%
S3 = 4-Bromofluorobenzene (SUR)	80-120%
S4 = Dibromofluoromethane (S)	80-120%

Initial Calibration Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9239-ICC9239
Lab FileID: T224919.D

Response Factor Report GCMST

Method : C:\MSDChem\1\METHODS\MT9239.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

Calibration Files
5 =T224918.D 20 =T224919.D 50 =T224920.D 100 =T224921.D
200 =T224922.D 2 =T224917.D 1 =T224916.D 0.5 =T224914.D

Compound	5	20	50	100	200	2	1	0.5	Avg	%RSD
1) TERT BUTYL ALCOHOL-d9	ISTD									
2) TERTIARY BUT	1.436	1.205	1.172	1.185	1.152	1.738			1.315	17.66
3) 1,4-DIOXANE	0.093	0.097	0.096	0.095	0.093	0.114			0.098	8.04
4) PENTAFLUOROBENZENE	ISTD									
5) CHLORODIFLUO	0.984	0.972	0.937	0.952	0.973	0.923			0.957	2.50
6) DICHLORODIFL	1.202	1.240	1.126	1.126	1.089	1.086			1.145	5.47
7) FREON 143A	0.549	0.609	0.628	0.633	0.681	0.809			0.651	13.54
8) FREON 142B	0.648	0.683	0.744	0.742	0.793	0.682			0.715	7.49
9) CHLOROMETHAN	0.872	0.934	0.927	0.944	0.978	0.969	1.166		0.970	9.58
10) VINYL CHLORI	1.054	1.037	1.035	1.034	1.060	0.955	1.131		1.044	4.98
11) BROMOMETHANE	0.629	0.631	0.614	0.593	0.474	0.713	0.953		0.658	22.47
12) CHLOROETHANE	0.578	0.562	0.551	0.543	0.543	0.509	0.665		0.565	8.72
13) VINYL BROMID	0.547	0.546	0.539	0.544	0.561	0.520	0.609		0.552	5.03
14) TRICHLOROFLU	1.002	1.013	0.962	0.980	1.008	0.920	0.869		0.965	5.52
15) PENTANE *This compound does not meet Initial Calibration criteria	1.837	1.644	1.633	1.581	1.545	1.628	1.607		1.639	5.70
16) FREON 141B	0.659	0.725	0.766	0.771	0.808	0.703	0.726		0.737	6.68
17) ETHYL ETHER	0.291	0.264	0.250	0.251	0.249	0.295	0.304		0.272	8.74
18) 1,1-DICHLORO	0.804	0.789	0.766	0.769	0.779	0.826	0.854		0.798	4.05
19) FREON 113	0.472	0.467	0.450	0.458	0.472	0.476	0.501		0.471	3.41
20) ACROLEIN	0.116	0.072	0.064	0.065	0.067				0.077	28.78
21) ACETONE	0.035	0.031	0.030	0.031	0.031	0.033			0.032	6.04
22) CARBON DISUL	1.767	1.743	1.702	1.678	1.691	1.724	1.787		1.727	2.34
23) IODOMETHANE	0.907	0.911	0.878	0.875	0.887	0.888	0.887		0.890	1.53
24) ACETONITRILE	0.052	0.052	0.050	0.052	0.054	0.059			0.053	5.62
25) METHYL ACETA	0.327	0.280	0.268	0.301	0.294	0.410			0.313	16.39
26) METHYLENE CH	0.537	0.514	0.501	0.503	0.512	0.590	0.662		0.545	10.97
27) ACRYLONITRIL	0.156	0.154	0.145	0.148	0.150	0.204			0.160	13.96
28) METHYL TERT	1.658	1.672	1.649	1.695	1.772	1.726	2.022		1.742	7.50
29) trans-1,2-DI	0.773	0.741	0.721	0.702	0.721	0.714	0.861		0.747	7.36
30) HEXANE	0.703	0.658	0.652	0.634	0.642	0.514	0.663		0.638	9.26
31) 1,1-DICHLORO	0.894	0.894	0.867	0.860	0.877	0.874	0.952	0.726	0.868	7.37
32) VINYL ACETAT	0.093	0.085	0.080	0.081	0.078	0.109			0.088	13.48
33) DI-ISOPROPYL	1.920	1.922	1.891	1.941	1.953	2.024	2.060		1.959	3.11
34) ETHYL TERT B	1.860	1.892	1.861	1.942	2.003	1.801	1.968	1.502	1.854	8.43
35) 2-BUTANONE	0.045	0.043	0.040	0.042	0.042	0.050	0.065	0.076	0.051	25.67
36) cis-1,2-DICH	0.583	0.542	0.525	0.524	0.541	0.584	0.690		0.570	10.26
37) 2,2-DICHLORO	0.944	0.942	0.929	0.919	0.948	0.996	1.110	1.105	0.987	7.90
38) ETHYL ACETAT	0.060	0.062	0.057	0.057	0.058				0.059	3.82
39) BROMOCHLOROM	0.251	0.249	0.243	0.243	0.249	0.284	0.287	0.287	0.262	7.85
40) TETRAHYDROFU	0.190	0.135	0.130	0.135	0.138	0.179			0.151	17.26
41) CHLOROFORM	0.891	0.846	0.831	0.826	0.845	0.857	1.016	0.942	0.882	7.51
42) t-BUTYL FORM *This compound does not meet Initial Calibration criteria	0.333	0.322	0.324	0.343	0.356	0.383	0.369		0.347	6.71
43) 1,1,1-TRICHL	0.929	0.930	0.923	0.928	0.960	0.929	0.958		0.936	1.64

Initial Calibration Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9239-ICC9239
Lab FileID: T224919.D

44)	CYCLOHEXANE	0.837	0.792	0.771	0.821	0.853	0.813	0.863	0.767	0.815	4.42
45)	DIBROMOFLUOR	0.466	0.469	0.469	0.492	0.498	0.479	0.482	0.479	0.479	2.35
46)	1,1-DICHLORO	0.649	0.662	0.645	0.650	0.667	0.673	0.671		0.660	1.74
47)	CARBON TETRA	0.821	0.811	0.814	0.828	0.855	0.812	0.838	0.700	0.810	5.77
48)	ISOPROPYL AC	0.105	0.095	0.089	0.091	0.093	0.117			0.098	10.87
49)	1,4-DIFLUOROBENZENE	----------	ISTD	----------							
50)	1,2-DICHLORO	0.316	0.327	0.324	0.319	0.323	0.325	0.323	0.318	0.322	1.13
51)	BENZENE	1.261	1.280	1.274	1.218	1.208	1.229	1.379	1.007	1.232	8.58
52)	1,2-DICHLORO	0.381	0.386	0.381	0.375	0.378	0.400	0.425	0.310	0.379	8.55
53)	2,2,4-TRIMET	1.234	1.234	1.327	1.351	1.459	1.140	1.237		1.283	8.11
54)	TERT-AMYL ME	1.127	1.144	1.135	1.142	1.180	1.128	1.246	1.011	1.139	5.72
55)	HEPTANE	0.255	0.252	0.250	0.235	0.240	0.252	0.336		0.260	13.14
56)	TRICHLOROETH	0.315	0.322	0.318	0.304	0.310	0.305	0.365		0.320	6.58
57)	1,2-DICHLORO	0.351	0.355	0.351	0.342	0.353	0.379	0.392	0.339	0.358	5.11
58)	DIBROMOMETHA	0.197	0.190	0.180	0.177	0.180	0.212	0.218		0.193	8.39
59)	METHYL METHA	0.071	0.072	0.070	0.069	0.067	0.078			0.071	5.44
60)	METHYLCYCLOH	0.692	0.678	0.692	0.684	0.716	0.646	0.772		0.697	5.63
61)	BROMODICHLOR	0.449	0.423	0.422	0.416	0.423	0.428	0.513		0.439	7.83
62)	2-CHLOROETHY	0.036	0.036	0.037	0.037	0.041	0.038	0.041		0.038	5.37
63)	EPICHLOROHYD	0.025	0.025	0.023	0.024	0.024				0.024	3.54
64)	cis-1,3-DICH	0.555	0.545	0.546	0.523	0.523	0.593	0.563		0.550	4.39
65)	4-METHYL-2-P	0.121	0.113	0.111	0.111	0.113	0.113	0.151		0.119	12.37
66)	I CHLOROBENZENE-D5	----------	ISTD	----------							
67)	TOLUENE-d8	1.193	1.174	1.188	1.197	1.184	1.189	1.164	1.187	1.184	0.92
68)	TOLUENE	0.770	0.768	0.763	0.740	0.737	0.757	0.856		0.770	5.17
69)	ETHYL METHAC	0.402	0.394	0.376	0.381	0.374	0.361	0.410		0.385	4.50
70)	trans-1,3-DI	0.469	0.445	0.449	0.444	0.438	0.488	0.459		0.456	3.83
71)	1,1,2-TRICHL	0.223	0.215	0.211	0.205	0.207	0.243	0.260		0.223	9.19
72)	TETRACHLOROE	0.261	0.265	0.263	0.256	0.258	0.279	0.304	0.265	0.269	5.90
73)	2-HEXANONE	0.107	0.101	0.096	0.097	0.096	0.108	0.108	0.109	0.103	5.52
74)	1,3-DICHLORO	0.441	0.444	0.428	0.426	0.423	0.442	0.473	0.386	0.433	5.70
75)	BUTYL ACETAT	0.227	0.196	0.194	0.190	0.188	0.208			0.200	7.32
76)	3,3-DIMETHYL	0.039	0.035	0.034	0.036	0.039	0.043			0.038	8.76
77)	DIBROMOCHLOR	0.319	0.320	0.313	0.312	0.312	0.332	0.333		0.320	2.86
78)	ETHYLENE DIB	0.278	0.265	0.260	0.258	0.255	0.260	0.315		0.270	7.86
79)	CHLOROBENZEN	0.935	0.949	0.928	0.896	0.883	0.917	1.020	0.729	0.907	9.14
80)	1,1,1,2-TETR	0.381	0.386	0.390	0.392	0.405	0.394	0.373		0.389	2.60
81)	ETHYLBENZENE	1.630	1.637	1.629	1.554	1.455	1.655	1.673	1.347	1.572	7.31
82)	m,p-XYLENE	0.639	0.636	0.633	0.610	0.595	0.639	0.650	0.459	0.608	10.31
83)	o-XYLENE	1.479	1.475	1.464	1.412	1.371	1.462	1.517	1.192	1.422	7.23
84)	STYRENE	1.149	1.138	1.146	1.103	1.061	1.139	1.111	0.906	1.094	7.44
85)	n-AMYL ACETA	0.283	0.271	0.262	0.265	0.263	0.283	0.308		0.277	5.93
86)	BROMOFORM	0.229	0.233	0.234	0.239	0.240	0.232	0.260	0.171	0.230	11.13
87)	CUMENE	1.887	1.874	1.867	1.786	1.685	1.867	1.896	1.271	1.767	12.01
88)	cis-1,4-DICH	0.133	0.128	0.127	0.135	0.130	0.135			0.131	2.49
89)	1,4-DICHLOROBENZENE-D	----------	ISTD	----------							
90)	4-BROMOFLUOR	0.642	0.647	0.640	0.618	0.610	0.651	0.648	0.652	0.639	2.49
91)	1,1,2,2-TETR	0.550	0.555	0.527	0.510	0.499	0.604	0.708		0.565	12.78
92)	trans-1,4-DI	0.134	0.136	0.138	0.136	0.136				0.136	0.93
93)	1,2,3-TRICHL	0.150	0.138	0.133	0.131	0.127	0.174	0.248		0.157	27.32
94)	N-PROPYLBENZ	3.154	3.191	3.064	2.788	2.449	3.252	3.513		3.059	11.29
95)	BROMOBENZENE	0.671	0.651	0.642	0.611	0.602	0.668	0.729		0.653	6.49
96)	2-CHLOROTOLU	0.636	0.673	0.651	0.622	0.623	0.712	0.819		0.677	10.39
97)	4-CHLOROTOLU	1.973	1.962	1.924	1.801	1.691	2.015	2.287		1.951	9.57
98)	1,3,5-TRIMET	2.442	2.533	2.437	2.288	2.147	2.511	2.640		2.428	6.76
99)	TERT-BUTYLBE	2.027	2.016	1.989	1.898	1.897	1.957	1.950		1.962	2.67
100)	1,2,4-TRIMET	2.639	2.705	2.620	2.443	2.246	2.689	2.960		2.615	8.54

6.8.1

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Initial Calibration Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9239-ICC9239
Lab FileID: T224919.D

101)	SEC-BUTYLBEN	3.321	3.364	3.300	3.054	2.666	3.341	3.507	3.222	8.67
102)	P-ISOPROPYLT	2.992	3.014	2.899	2.700	2.413	3.022	3.279	2.903	9.51
103)	1,3-DICHLORO	1.494	1.510	1.442	1.412	1.365	1.545	1.607	1.482	5.55
104)	1,4-DICHLORO	1.480	1.488	1.485	1.420	1.385	1.522	1.718	1.500	7.13
105)	N-BUTYLBENZE	0.794	0.801	0.798	0.759	0.766	0.824	0.822	0.795	3.16
106)	1,2-DICHLORO	1.563	1.548	1.484	1.441	1.400	1.658	1.699	1.542	7.13
107)	HEXACHLOROET	0.279	0.310	0.315	0.313	0.341	0.266	0.387	0.316	12.68
108)	1,2-DIBROMO-	0.180	0.153	0.143	0.142	0.143	0.279		0.173	30.98
109)	HEXACHLOROBU	0.728	0.758	0.755	0.706	0.695	0.771		0.735	4.18
110)	1,3,5-TRICHL	1.694	1.751	1.699	1.589	1.514	1.699	1.918	1.695	7.50
111)	NITROBENZENE		0.041	0.043	0.045	0.048			0.044	6.96
112)	1,2,4-TRICHL	1.307	1.376	1.314	1.259	1.220	1.303	1.275	1.294	3.80
113)	1,2,3-TRICHL	0.959	1.010	1.009	0.981	0.949	0.997	1.018	0.989	2.70
114)	NAPHTHALENE	2.000	2.086	2.041	1.980	1.839	2.218	2.302	2.067	7.47
115)	INDANE	2.905	2.934	2.847	2.643	2.322	2.838	2.987	2.782	8.28
116)	ETHYLENIMINE								0.000	-1.00
117)	BIS(CHLOROME								0.000	-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

MT9239.M Mon Jun 19 09:29:59 2017 MSDT

Initial Calibration Verification

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9239-ICV9239
Lab FileID: T224925.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T224925.D Vial: 13
Acq On : 16 Jun 2017 6:18 pm Operator: payalr
Sample : ICV9239-20 Inst : GCMST
Misc : MS16899,VT9239,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9239.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Mon Jun 19 09:28:50 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	122	0.00	7.46
2	M	TERTIARY BUTYL ALCOHOL	1.315	1.249	5.0	126	0.00	7.57
3	M	1,4-DIOXANE	0.098	0.092	6.1	116	0.00	11.04
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	119	0.00	9.50
5		CHLORODIFLUOROMETHANE	0.957	0.623	34.9	76	0.00	4.36
6	M	DICHLORODIFLUOROMETHANE	1.145	1.103	3.7	106	0.00	4.37
7	M	FREON 143A	0.651	0.790	-21.4	155	0.00	4.00
8	M	FREON 142B	0.715	0.911	-27.4	159	0.00	4.62
9	M	CHLOROMETHANE	0.970	0.869	10.4	111	0.00	4.70
10	M	VINYL CHLORIDE	1.044	0.907	13.1	104	0.00	4.94
11	M	BROMOMETHANE	0.658	0.545	17.2	103	0.00	5.58
12	M	CHLOROETHANE	0.565	0.500	11.5	106	0.00	5.74
13		VINYL BROMIDE	0.552	0.537	2.7	117	0.00	6.06
14	M	TRICHLOROFLUOROMETHANE	0.965	0.872	9.6	103	0.00	6.16
15	M	PENTANE	1.639	0.967	41.0#	70	0.00	6.25
16	M	FREON 141B	0.737	0.801	-8.7	132	0.00	6.55
17		ETHYL ETHER	0.272	0.237	12.9	107	0.00	6.54
18	M	1,1-DICHLOROETHYLENE	0.798	0.664	16.8	101	0.00	6.92
19	M	FREON 113	0.471	0.454	3.6	116	0.00	6.89
20		ACROLEIN	0.077	0.078	-1.3	129	0.00	6.75
21	M	ACETONE	0.032	0.031	3.1	119	0.00	6.94
22	M	CARBON DISULFIDE	1.727	1.403	18.8	96	0.00	7.30
23	M	IODOMETHANE	0.890	0.748	16.0	98	0.00	7.17
24		ACETONITRILE	0.053	0.042	20.8	97	0.00	7.33
25		METHYL ACETATE	0.313	0.274	12.5	117	0.00	7.35
26	M	METHYLENE CHLORIDE	0.545	0.480	11.9	112	0.00	7.53
27	M	ACRYLONITRILE	0.160	0.171	-6.9	133	0.00	7.82
28	M	METHYL TERT BUTYL ETHER	1.742	1.588	8.8	114	0.00	7.84
29	M	trans-1,2-DICHLOROETHYLEN	0.747	0.649	13.1	105	0.00	7.88
30	M	HEXANE	0.638	0.670	-5.0	122	0.00	8.16
31	M	1,1-DICHLOROETHANE	0.868	0.833	4.0	111	0.00	8.38
32	M	VINYL ACETATE	0.088	0.075	14.8	106	0.00	8.35
33	M	DI-ISOPROPYL ETHER	1.959	1.772	9.5	110	0.00	8.37
34	M	ETHYL TERT BUTYL ETHER	1.854	1.708	7.9	108	0.00	8.79
35	M	2-BUTANONE	0.051	0.043	15.7	119	0.00	9.00
36	M	cis-1,2-DICHLOROETHYLENE	0.570	0.509	10.7	112	0.00	9.04
37	M	2,2-DICHLOROPROPANE	0.987	0.925	6.3	117	0.00	9.07
38	M	ETHYL ACETATE	0.059	0.059	0.0	113	0.00	9.01
39		BROMOCHLOROMETHANE	0.262	0.225	14.1	108	0.00	9.32
40	M	TETRAHYDROFURAN	0.151	0.127	15.9	113	0.00	9.37
41	M	CHLOROFORM	0.882	0.807	8.5	114	0.00	9.36

Initial Calibration Verification

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9239-ICV9239
Lab FileID: T224925.D

42		t-BUTYL FORMATE	0.347	0.171	50.7#	63	0.00	9.42
43	M	1,1,1-TRICHLOROETHANE	0.936	0.858	8.3	110	0.00	9.63
44		CYCLOHEXANE	0.815	0.838	-2.8	126	0.00	9.72
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.471	1.7	120	0.00	9.54
46		1,1-DICHLOROPROPENE	0.660	0.602	8.8	109	0.00	9.79
47		CARBON TETRACHLORIDE	0.810	0.737	9.0	108	0.00	9.83
48		ISOPROPYL ACETATE	0.098	0.089	9.2	111	0.00	9.92
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	118	0.00	10.35
50	S	1,2-DICHLOROETHANE-d4	0.322	0.316	1.9	114	0.00	9.95
51	M	BENZENE	1.232	1.189	3.5	110	0.00	10.03
52	M	1,2-DICHLOROETHANE	0.379	0.382	-0.8	117	0.00	10.03
53		2,2,4-TRIMETHYLPENTANE	1.283	1.108	13.6	106	0.00	10.05
54	M	TERT-AMYL METHYL ETHER	1.139	1.064	6.6	110	0.00	10.06
55	M	HEPTANE	0.260	0.236	9.2	111	0.00	10.19
56	M	TRICHLOROETHYLENE	0.320	0.307	4.1	113	0.00	10.69
57	M	1,2-DICHLOROPROPANE	0.358	0.346	3.4	115	0.00	10.95
58	M	DIBROMOMETHANE	0.193	0.178	7.8	111	0.00	11.09
59		METHYL METHACRYLATE	0.071	0.069	2.8	114	0.00	10.93
60		METHYLCYCLOHEXANE	0.697	0.597	14.3	104	0.00	10.93
61	M	BROMODICHLOROMETHANE	0.439	0.422	3.9	118	0.00	11.21
62	M	2-CHLOROETHYL VINYL ETHER	0.038	0.036	5.3	118	0.00	11.44
63	M	EPICHLOROHYDRIN	0.024	0.024	0.0	114	0.00	11.56
64	M	cis-1,3-DICHLOROPROPENE	0.550	0.538	2.2	117	0.00	11.66
65	M	4-METHYL-2-PENTANONE	0.119	0.113	5.0	118	0.00	11.77
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	115	0.00	13.56
67	S	TOLUENE-d8	1.184	1.182	0.2	116	0.00	11.98
68		TOLUENE	0.770	0.748	2.9	112	0.00	12.05
69		ETHYL METHACRYLATE	0.385	0.394	-2.3	115	0.00	12.22
70		trans-1,3-DICHLOROPROPENE	0.456	0.461	-1.1	119	0.00	12.23
71		1,1,2-TRICHLOROETHANE	0.223	0.218	2.2	117	0.00	12.46
72	M	TETRACHLOROETHYLENE	0.269	0.258	4.1	112	0.00	12.66
73	M	2-HEXANONE	0.103	0.103	0.0	117	0.00	12.64
74		1,3-DICHLOROPROPANE	0.433	0.439	-1.4	114	0.00	12.65
75	M	BUTYL ACETATE	0.200	0.210	-5.0	124	0.00	12.71
76		3,3-DIMETHYL-1-BUTANOL	0.038	0.037	2.6	121	0.00	12.80
77	M	DIBROMOCHLOROMETHANE	0.320	0.328	-2.5	118	0.00	12.93
78	M	ETHYLENE DIBROMIDE	0.270	0.267	1.1	116	0.00	13.10
79	M	CHLOROBENZENE	0.907	0.924	-1.9	112	0.00	13.59
80	M	1,1,1,2-TETRACHLOROETHANE	0.389	0.390	-0.3	117	0.00	13.66
81	M	ETHYLBENZENE	1.572	1.586	-0.9	112	0.00	13.66
82	M	m,p-XYLENE	0.608	0.618	-1.6	112	0.00	13.77
83	M	o-XYLENE	1.422	1.425	-0.2	111	0.00	14.23
84	M	STYRENE	1.094	1.122	-2.6	114	0.00	14.23
85		n-AMYL ACETATE	0.277	0.266	4.0	113	0.00	14.25
86	M	BROMOFORM	0.230	0.240	-4.3	119	0.00	14.51
87	M	CUMENE	1.767	1.790	-1.3	110	0.00	14.61
88		cis-1,4-DICHLORO-2-BUTENE	0.131	0.131	0.0	118	0.00	14.66
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	114	0.00	16.11
90	S	4-BROMOFLUOROBENZENE	0.639	0.650	-1.7	115	0.00	14.82
91		1,1,2,2-TETRACHLOROETHANE	0.565	0.573	-1.4	118	0.00	14.91
92		trans-1,4-DICHLORO-2-BUTE	0.136	0.153	-12.5	128	0.00	14.96
93		1,2,3-TRICHLOROPROPANE	0.157	0.151	3.8	125	0.00	15.01
94		N-PROPYLBENZENE	3.059	3.130	-2.3	112	0.00	15.06
95		BROMOBENZENE	0.653	0.659	-0.9	116	0.00	15.04
96		2-CHLOROTOLUENE	0.677	0.663	2.1	113	0.00	15.22
97		4-CHLOROTOLUENE	1.951	1.950	0.1	114	0.00	15.33
98	M	1,3,5-TRIMETHYLBENZENE	2.428	2.435	-0.3	110	0.00	15.22

Initial Calibration Verification

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9239-ICV9239
Lab FileID: T224925.D

99		TERT-BUTYLBENZENE	1.962	2.004	-2.1	114	0.00	15.61
100	M	1,2,4-TRIMETHYLBENZENE	2.615	2.656	-1.6	112	0.00	15.65
101		SEC-BUTYLBENZENE	3.222	3.288	-2.0	112	0.00	15.85
102		P-ISOPROPYLTOLUENE	2.903	2.983	-2.8	113	0.00	15.98
103	M	1,3-DICHLOROBENZENE	1.482	1.509	-1.8	114	0.00	16.05
104	M	1,4-DICHLOROBENZENE	1.500	1.506	-0.4	116	0.00	16.14
105		N-BUTYLBENZENE	0.795	0.806	-1.4	115	0.00	16.44
106	M	1,2-DICHLOROBENZENE	1.542	1.575	-2.1	116	0.00	16.57
107		HEXACHLOROETHANE	0.316	0.320	-1.3	118	0.00	16.87
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.173	0.169	2.3	126	0.00	17.41
109		HEXACHLOROBUTADIENE	0.735	0.780	-6.1	118	0.00	18.45
110		1,3,5-TRICHLOROBENZENE	1.695	1.749	-3.2	114	0.00	17.62
111		NITROBENZENE	0.044	0.056	-27.3	158	0.00	17.63
112	M	1,2,4-TRICHLOROBENZENE	1.294	1.412	-9.1	117	0.00	18.31
113		1,2,3-TRICHLOROBENZENE	0.989	1.099	-11.1	125	0.00	18.91
114	M	NAPHTHALENE	2.067	2.234	-8.1	123	0.00	18.63
115	M	INDANE	2.782	2.337	16.0	91	0.00	16.41
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T224919.D MT9239.M Mon Jun 19 09:29:44 2017 MSDT

Initial Calibration Verification

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9239-ICV9239
Lab FileID: T224926.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T224926.D Vial: 14
Acq On : 16 Jun 2017 6:48 pm Operator: payalr
Sample : ICV9239-20 Inst : GCMST
Misc : MS16899,VT9239,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9239.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Mon Jun 19 09:02:47 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	123	0.00	7.47
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	117	0.00	9.50
24		ACETONITRILE	0.053	0.050	5.7	113	0.00	7.33
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.477	0.4	119	0.00	9.54
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	117	0.00	10.36
50	S	1,2-DICHLOROETHANE-d4	0.322	0.327	-1.6	117	0.00	9.95
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	117	0.00	13.56
67	S	TOLUENE-d8	1.185	1.184	0.1	118	0.00	11.98
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	118	0.00	16.11
90	S	4-BROMOFLUOROBENZENE	0.638	0.646	-1.3	118	0.00	14.82

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T224919.D MT9239.M Mon Jun 19 09:15:37 2017 MSDT

Continuing Calibration Summary

Job Number: JC46773 **Sample:** VT9259-CC9239
Account: UTC United Technologies Corporation **Lab FileID:** T225506.D
Project: SECORINI: Zanesville OH, Monthly

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\T\T225506.D Vial: 3
Acq On : 12 Jul 2017 7:51 am Operator: payalr
Sample : CC9239-20 Inst : GCMST
Misc : MS18015,VT9259,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9239.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Mon Jun 19 09:28:50 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	110	-0.03	7.44
2	M	TERTIARY BUTYL ALCOHOL	1.315	1.077	18.1	98	-0.01	7.55
3	M	1,4-DIOXANE	0.098	0.082	16.3	94	-0.02	11.03
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	96	-0.01	9.48
5		CHLORODIFLUOROMETHANE	0.957	1.199	-25.3	119	0.00	4.37
6	M	DICHLORODIFLUOROMETHANE	1.145	0.865	24.5	67	0.02	4.38
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE	0.970	0.874	9.9	90	0.00	4.70
10	M	VINYL CHLORIDE	1.044	0.964	7.7	89	0.00	4.95
11	M	BROMOMETHANE	0.658	0.590	10.3	90	0.00	5.59
12	M	CHLOROETHANE	0.565	0.487	13.8	83	0.00	5.73
13		VINYL BROMIDE	0.552	0.659	-19.4	116	0.00	6.06
14	M	TRICHLOROFLUOROMETHANE	0.965	0.849	12.0	81	-0.01	6.15
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER	0.272	0.255	6.3	93	0.00	6.52
18	M	1,1-DICHLOROETHYLENE	0.798	0.646	19.0	79	-0.01	6.91
19	M	FREON 113	0.471	0.490	-4.0	101	-0.01	6.89
20		ACROLEIN	0.077	0.087	-13.0	115	-0.01	6.74
21	M	ACETONE	0.032	0.032	0.0	100	-0.01	6.93
22	M	CARBON DISULFIDE	1.727	1.660	3.9	92	0.00	7.29
23	M	IODOMETHANE	0.890	0.851	4.4	90	-0.01	7.16
24		ACETONITRILE	0.053	0.060	-13.2	112	0.00	7.31
25		METHYL ACETATE	0.313	0.278	11.2	96	-0.02	7.33
26	M	METHYLENE CHLORIDE	0.545	0.506	7.2	95	-0.01	7.52
27	M	ACRYLONITRILE	0.160	0.155	3.1	97	-0.01	7.80
28	M	METHYL TERT BUTYL ETHER	1.742	1.769	-1.5	102	0.00	7.84
29	M	trans-1,2-DICHLOROETHYLEN	0.747	0.635	15.0	83	0.00	7.87
30	M	HEXANE	0.638	0.620	2.8	91	0.00	8.16
31	M	1,1-DICHLOROETHANE	0.868	0.828	4.6	89	-0.01	8.37
32	M	VINYL ACETATE	0.088	0.081	8.0	92	-0.01	8.34
33	M	DI-ISOPROPYL ETHER	1.959	1.969	-0.5	99	-0.01	8.36
34	M	ETHYL TERT BUTYL ETHER	1.854	1.945	-4.9	99	-0.01	8.77
35	M	2-BUTANONE	0.051	0.042	17.6	95	-0.02	8.98
36	M	cis-1,2-DICHLOROETHYLENE	0.570	0.499	12.5	89	0.00	9.03
37	M	2,2-DICHLOROPROPANE	0.987	0.905	8.3	93	0.00	9.06
38	M	ETHYL ACETATE	0.059	0.066	-11.9	103	0.00	9.00
39		BROMOCHLOROMETHANE	0.262	0.230	12.2	89	-0.01	9.31
40	M	TETRAHYDROFURAN	0.151	0.152	-0.7	109	-0.02	9.35
41	M	CHLOROFORM	0.882	0.786	10.9	89	-0.02	9.35

Continuing Calibration Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9259-CC9239
Lab FileID: T225506.D

42		t-BUTYL FORMATE	0.347	0.378	-8.9	113	-0.02	9.41
43	M	1,1,1-TRICHLOROETHANE	0.936	0.858	8.3	89	0.00	9.62
44		CYCLOHEXANE	0.815	0.894	-9.7	109	0.00	9.71
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.475	0.8	98	-0.02	9.53
46		1,1-DICHLOROPROPENE	0.660	0.565	14.4	82	-0.01	9.78
47		CARBON TETRACHLORIDE	0.810	0.750	7.4	89	0.00	9.82
48		ISOPROPYL ACETATE	0.098	0.093	5.1	94	0.00	9.92
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	94	-0.01	10.35
50	S	1,2-DICHLOROETHANE-d4	0.322	0.318	1.2	92	-0.01	9.93
51	M	BENZENE	1.232	1.211	1.7	89	0.00	10.03
52	M	1,2-DICHLOROETHANE	0.379	0.347	8.4	85	-0.01	10.02
53		2,2,4-TRIMETHYLPENTANE	1.283	1.300	-1.3	99	0.00	10.04
54	M	TERT-AMYL METHYL ETHER	1.139	1.194	-4.8	98	-0.01	10.04
55	M	HEPTANE	0.260	0.238	8.5	89	-0.01	10.18
56	M	TRICHLOROETHYLENE	0.320	0.286	10.6	84	0.00	10.68
57	M	1,2-DICHLOROPROPANE	0.358	0.352	1.7	94	-0.01	10.94
58	M	DIBROMOMETHANE	0.193	0.180	6.7	90	-0.01	11.07
59		METHYL METHACRYLATE	0.071	0.069	2.8	90	-0.02	10.91
60		METHYLCYCLOHEXANE	0.697	0.644	7.6	90	0.00	10.93
61	M	BROMODICHLOROMETHANE	0.439	0.389	11.4	87	-0.01	11.19
62	M	2-CHLOROETHYL VINYL ETHER	0.038	0.086	-126.3#	225#	-0.01	11.42
63	M	EPICHLOROHYDRIN	0.024	0.025	-4.2	95	-0.01	11.55
64	M	cis-1,3-DICHLOROPROPENE	0.550	0.508	7.6	88	-0.02	11.65
65	M	4-METHYL-2-PENTANONE	0.119	0.122	-2.5	102	-0.01	11.75
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	87	-0.01	13.55
67	S	TOLUENE-d8	1.184	1.279	-8.0	95	-0.01	11.97
68		TOLUENE	0.770	0.751	2.5	85	-0.01	12.04
69		ETHYL METHACRYLATE	0.385	0.402	-4.4	89	-0.01	12.21
70		trans-1,3-DICHLOROPROPENE	0.456	0.450	1.3	88	-0.01	12.21
71		1,1,2-TRICHLOROETHANE	0.223	0.220	1.3	89	-0.02	12.44
72	M	TETRACHLOROETHYLENE	0.269	0.246	8.6	81	-0.01	12.65
73	M	2-HEXANONE	0.103	0.111	-7.8	96	-0.01	12.63
74		1,3-DICHLOROPROPANE	0.433	0.443	-2.3	87	-0.02	12.64
75	M	BUTYL ACETATE	0.200	0.209	-4.5	93	-0.02	12.69
76		3,3-DIMETHYL-1-BUTANOL	0.038	0.042	-10.5	103	-0.02	12.78
77	M	DIBROMOCHLOROMETHANE	0.320	0.304	5.0	83	-0.01	12.91
78	M	ETHYLENE DIBROMIDE	0.270	0.261	3.3	86	-0.01	13.09
79	M	CHLOROBENZENE	0.907	0.880	3.0	81	-0.02	13.58
80	M	1,1,1,2-TETRACHLOROETHANE	0.389	0.405	-4.1	91	-0.01	13.65
81	M	ETHYLBENZENE	1.572	1.560	0.8	83	-0.01	13.65
82	M	m,p-XYLENE	0.608	0.586	3.6	80	-0.01	13.76
83	M	o-XYLENE	1.422	1.451	-2.0	86	-0.02	14.22
84	M	STYRENE	1.094	1.047	4.3	80	-0.01	14.22
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.230	0.216	6.1	80	-0.02	14.50
87	M	CUMENE	1.767	1.895	-7.2	88	0.00	14.60
88		cis-1,4-DICHLORO-2-BUTENE	0.131	0.103	21.4	70	-0.02	14.65
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	90	0.00	16.10
90	S	4-BROMOFLUOROBENZENE	0.639	0.608	4.9	85	-0.01	14.81
91		1,1,2,2-TETRACHLOROETHANE	0.565	0.562	0.5	91	-0.01	14.90
92		trans-1,4-DICHLORO-2-BUTE	0.136	0.123	9.6	81	0.00	14.95
93		1,2,3-TRICHLOROPROPANE	0.157	0.134	14.6	87	0.00	14.99
94		N-PROPYLBENZENE	3.059	2.929	4.2	83	0.00	15.05
95		BROMOBENZENE	0.653	0.585	10.4	81	0.00	15.03
96		2-CHLOROTOLUENE	0.677	0.615	9.2	83	0.00	15.21
97		4-CHLOROTOLUENE	1.951	1.739	10.9	80	0.00	15.32
98	M	1,3,5-TRIMETHYLBENZENE	2.428	2.447	-0.8	87	0.00	15.21

Continuing Calibration Summary

Job Number: JC46773
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9259-CC9239
Lab FileID: T225506.D

99		TERT-BUTYLBENZENE	1.962	2.062	-5.1	92	0.00	15.60
100	M	1,2,4-TRIMETHYLBENZENE	2.615	2.591	0.9	87	-0.01	15.64
101		SEC-BUTYLBENZENE	3.222	3.295	-2.3	88	-0.01	15.84
102		P-ISOPROPYLTOLUENE	2.903	2.904	-0.0	87	0.00	15.97
103	M	1,3-DICHLOROBENZENE	1.482	1.407	5.1	84	-0.01	16.04
104	M	1,4-DICHLOROBENZENE	1.500	1.447	3.5	88	0.00	16.13
105		N-BUTYLBENZENE	0.795	0.769	3.3	87	-0.01	16.42
106	M	1,2-DICHLOROBENZENE	1.542	1.572	-1.9	92	-0.01	16.56
107		HEXACHLOROETHANE	0.316	0.321	-1.6	93	-0.01	16.86
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.173	0.161	6.9	95	-0.02	17.39
109		HEXACHLOROBUTADIENE	0.735	0.787	-7.1	94	-0.01	18.44
110		1,3,5-TRICHLOROBENZENE	1.695	1.898	-12.0	98	0.00	17.61
111		NITROBENZENE	0.044	0.047	-6.8	103	-0.01	17.62
112	M	1,2,4-TRICHLOROBENZENE	1.294	1.463	-13.1	96	-0.01	18.30
113		1,2,3-TRICHLOROBENZENE	0.989	1.064	-7.6	95	-0.01	18.89
114	M	NAPHTHALENE	2.067	2.314	-11.9	100	-0.01	18.62
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T224919.D MT9239.M Wed Jul 12 12:27:57 2017

6.8.4

6

SGS ACCUTEST
JC46773

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225523.D
Acq On : 12 Jul 2017 5:19 pm
Operator : payalr
Sample : jc46773-1
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 13 14:03:09 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

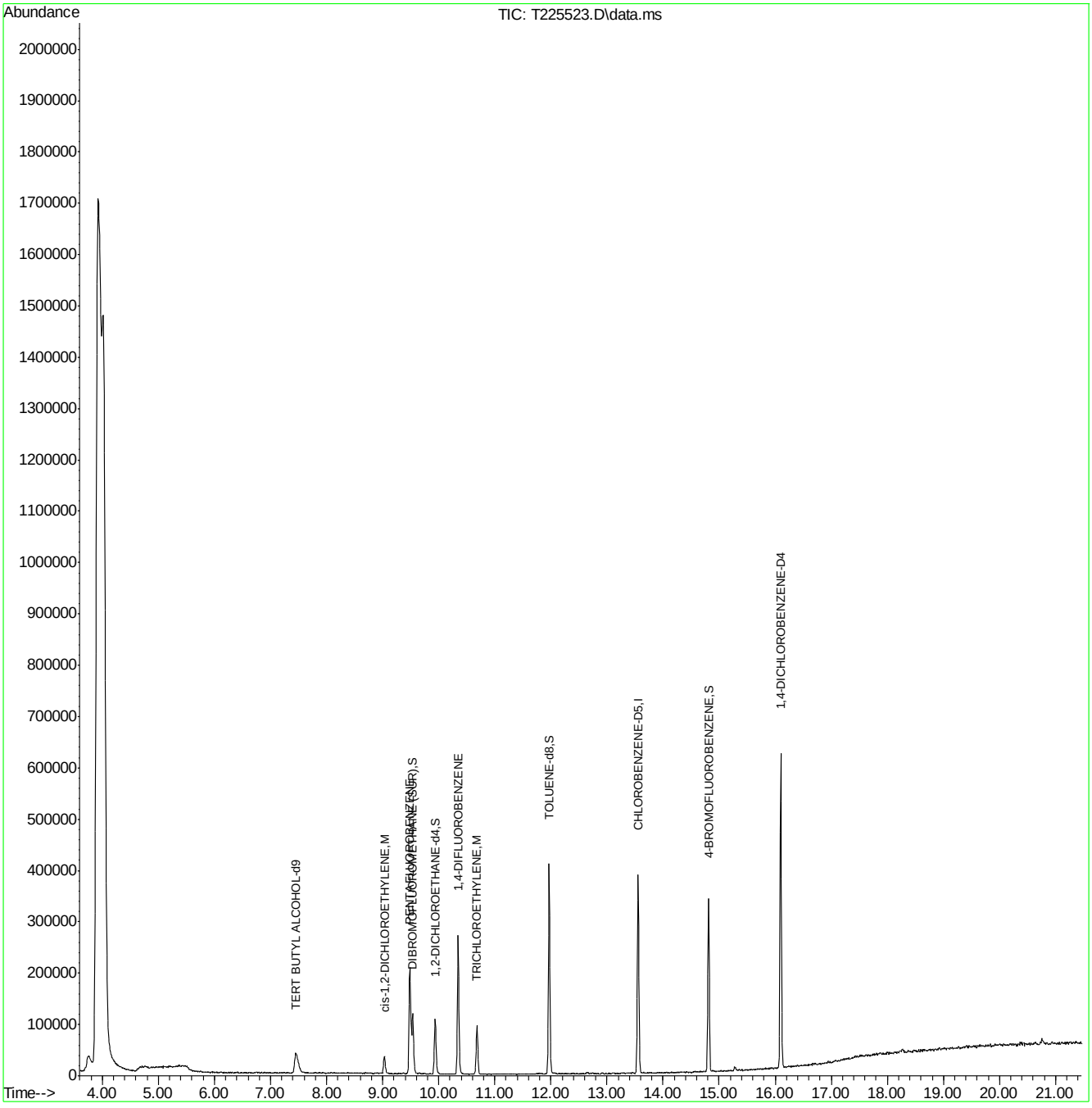
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.459	65	105164	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.489	168	166434	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.346	114	246312	30.00	PPb	-0.01
66) CHLOROBENZENE-D5	13.552	117	243991	30.00	PPb	-0.01
89) 1,4-DICHLOROBENZENE-D4	16.100	152	181781	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.536	113	77361	29.10	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 97.00%			
50) 1,2-DICHLOROETHANE-d4	9.933	65	78986	29.88	PPB	-0.01
Spiked Amount 30.000	Range 72 - 125		Recovery = 99.60%			
67) TOLUENE-d8	11.968	98	306111	31.78	PPB	-0.01
Spiked Amount 30.000	Range 78 - 119		Recovery = 105.93%			
90) 4-BROMOFLUOROBENZENE	14.813	174	112583	29.10	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.00%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.034	96	18413	5.83	PPb	91
56) TRICHLOROETHYLENE	10.681	95	35588	13.55	PPb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

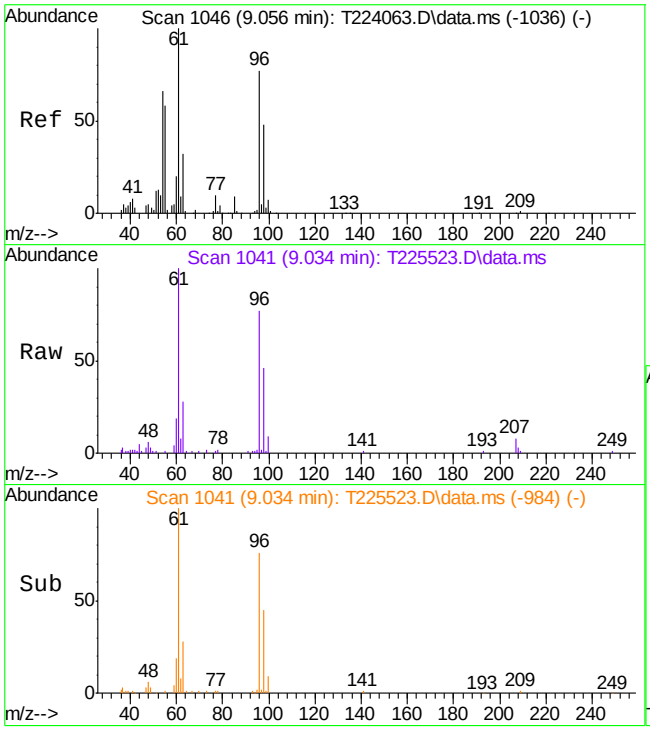
Data Path : C:\msdchem\1\DATA\T\
Data File : T225523.D
Acq On : 12 Jul 2017 5:19 pm
Operator : payalr
Sample : jc46773-1
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 13 14:03:09 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



MT9239.M Thu Jul 13 14:13:09 2017 Page: 2

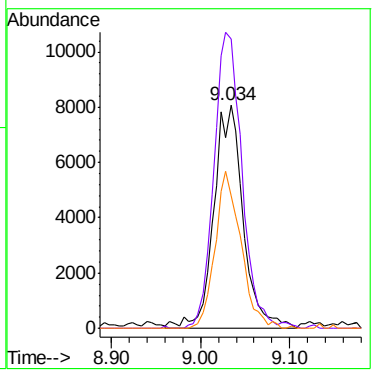
SGS ACCUTEST JC46773

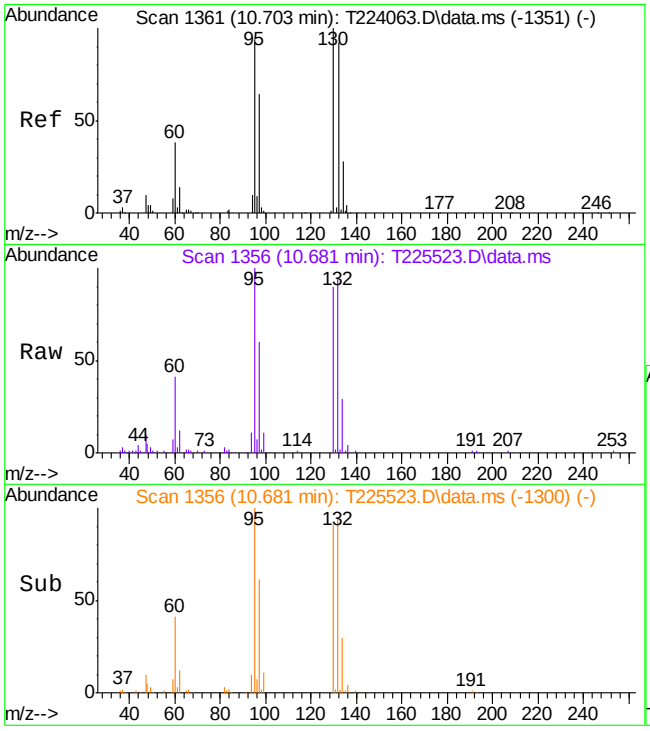


#36
cis-1,2-DICHLOROETHYLENE
Concen: 5.83 PPb
RT: 9.034 min Scan# 1041
Delta R.T. -0.002 min
Lab File: T225523.D
Acq: 12 Jul 2017 5:19 pm

Tgt Ion: 96 Resp: 18413

Ion	Ratio	Lower	Upper
96	100		
61	128.5	113.2	173.2
98	59.2	32.0	92.0

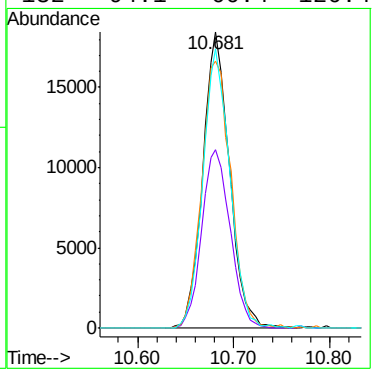




#56
TRICHLOROETHYLENE
Concen: 13.55 PPb
RT: 10.681 min Scan# 1356
Delta R.T. -0.006 min
Lab File: T225523.D
Acq: 12 Jul 2017 5:19 pm

Tgt Ion: 95 Resp: 35588

Ion	Ratio	Lower	Upper
95	100		
97	60.1	32.2	92.2
130	90.3	65.9	125.9
132	94.1	66.4	126.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225524.D
Acq On : 12 Jul 2017 5:50 pm
Operator : payalr
Sample : jc46773-2
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 13 14:03:58 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

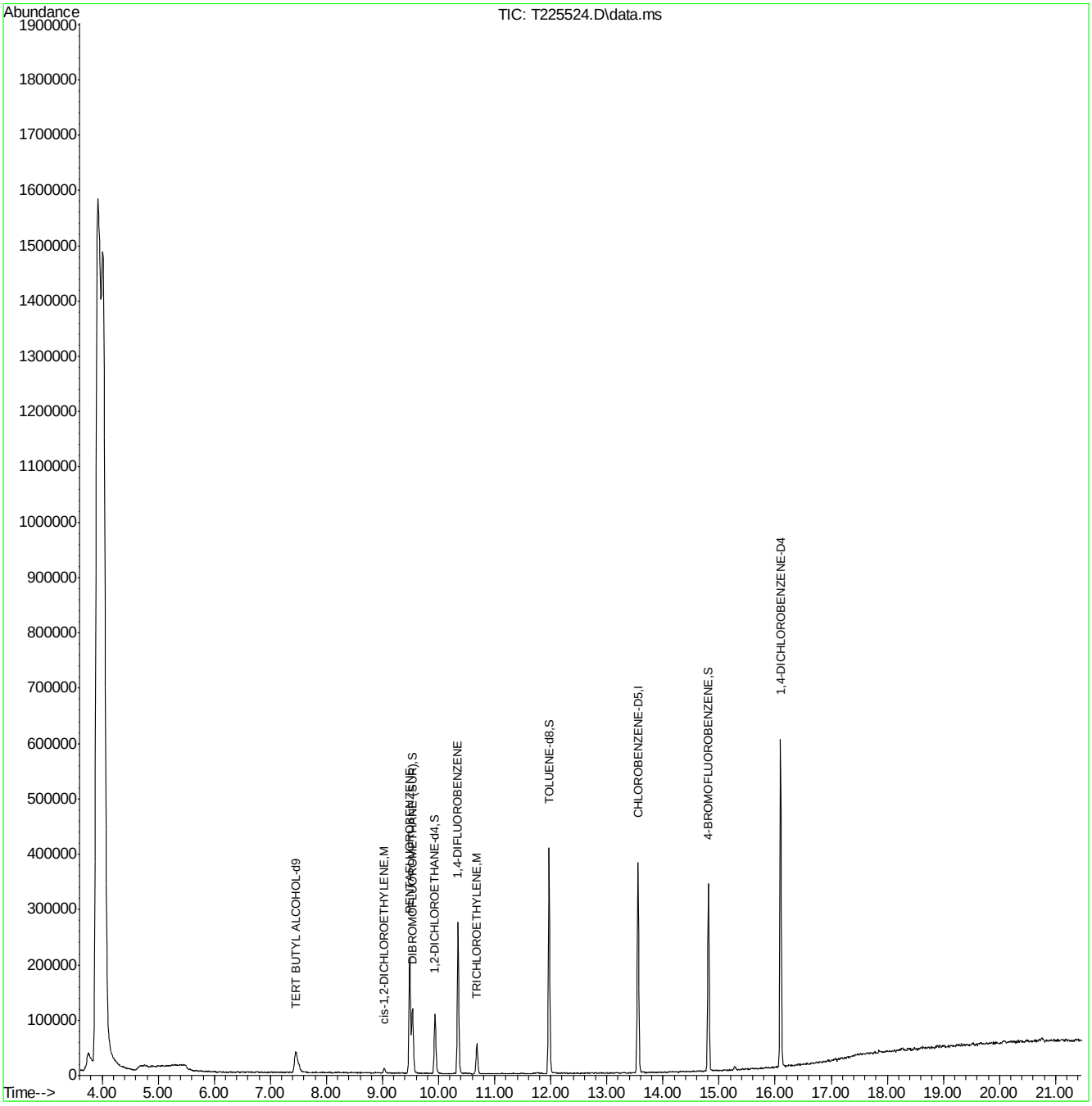
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.456	65	99898	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.485	168	162453	30.00	PPB	-0.01
49) 1,4-DIFLUOROBENZENE	10.343	114	246908	30.00	PPb	-0.02
66) CHLOROBENZENE-D5	13.554	117	242093	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.096	152	177066	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.532	113	77308	29.79	PPb	-0.02
Spiked Amount 30.000	Range 79 - 120		Recovery = 99.30%			
50) 1,2-DICHLOROETHANE-d4	9.930	65	78884	29.77	PPB	-0.02
Spiked Amount 30.000	Range 72 - 125		Recovery = 99.23%			
67) TOLUENE-d8	11.969	98	303554	31.76	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 105.87%			
90) 4-BROMOFLUOROBENZENE	14.809	174	108962	28.91	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 96.37%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.030	96	4946	1.60	PPb	# 75
56) TRICHLOROETHYLENE	10.683	95	19932	7.57	PPb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

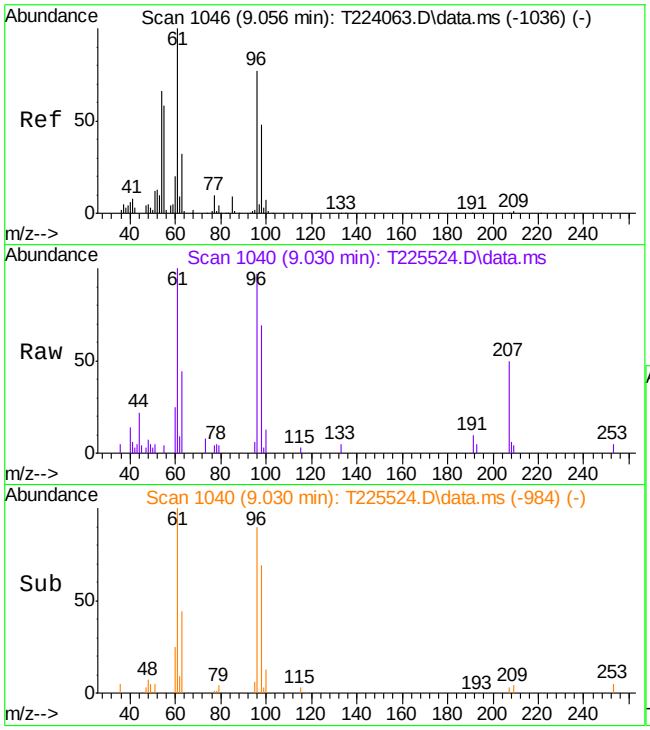
Data Path : C:\msdchem\1\DATA\T\
Data File : T225524.D
Acq On : 12 Jul 2017 5:50 pm
Operator : payalr
Sample : jc46773-2
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 13 14:03:58 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



MT9239.M Thu Jul 13 14:13:12 2017 Page: 2

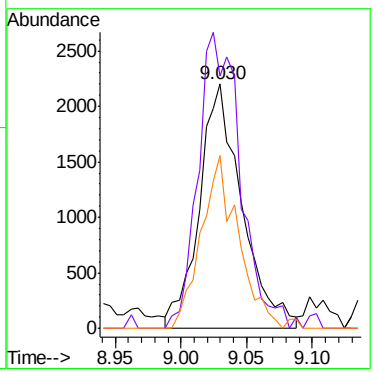
SGS ACCUTEST JC46773

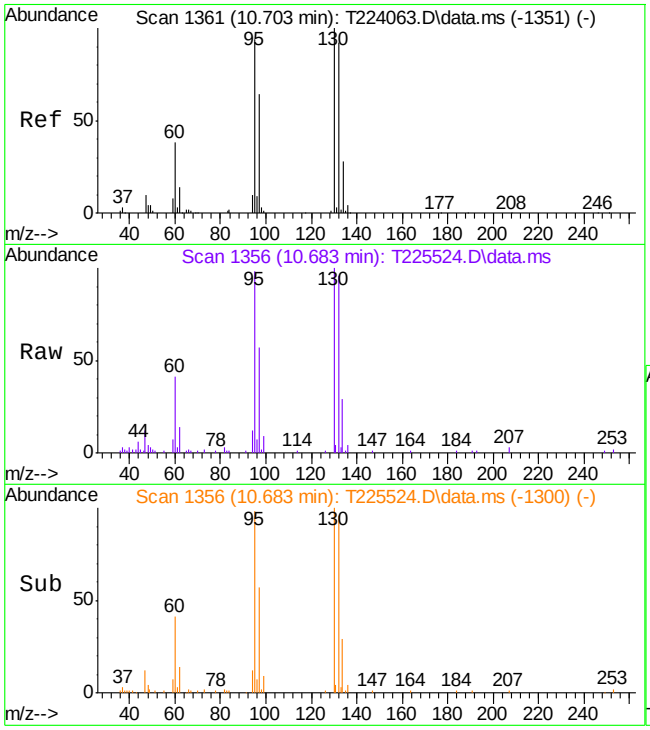


#36
cis-1,2-DICHLOROETHYLENE
Concen: 1.60 PPb
RT: 9.030 min Scan# 1040
Delta R.T. -0.005 min
Lab File: T225524.D
Acq: 12 Jul 2017 5:50 pm

Tgt Ion: 96 Resp: 4946

Ion	Ratio	Lower	Upper
96	100		
61	107.9	113.2	173.2#
98	74.0	32.0	92.0

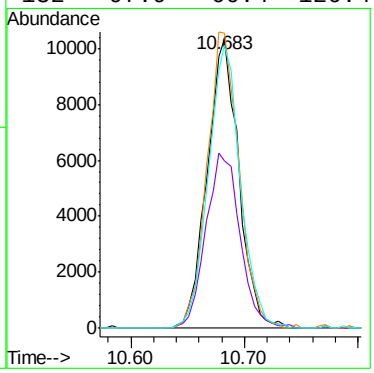




#56
TRICHLOROETHYLENE
Concen: 7.57 PPb
RT: 10.683 min Scan# 1356
Delta R.T. -0.005 min
Lab File: T225524.D
Acq: 12 Jul 2017 5:50 pm

Tgt Ion: 95 Resp: 19932

Ion	Ratio	Lower	Upper
95	100		
97	58.0	32.2	92.2
130	101.9	65.9	125.9
132	97.9	66.4	126.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225525.D
Acq On : 12 Jul 2017 6:20 pm
Operator : payalr
Sample : jc46773-3
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 13 14:04:42 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

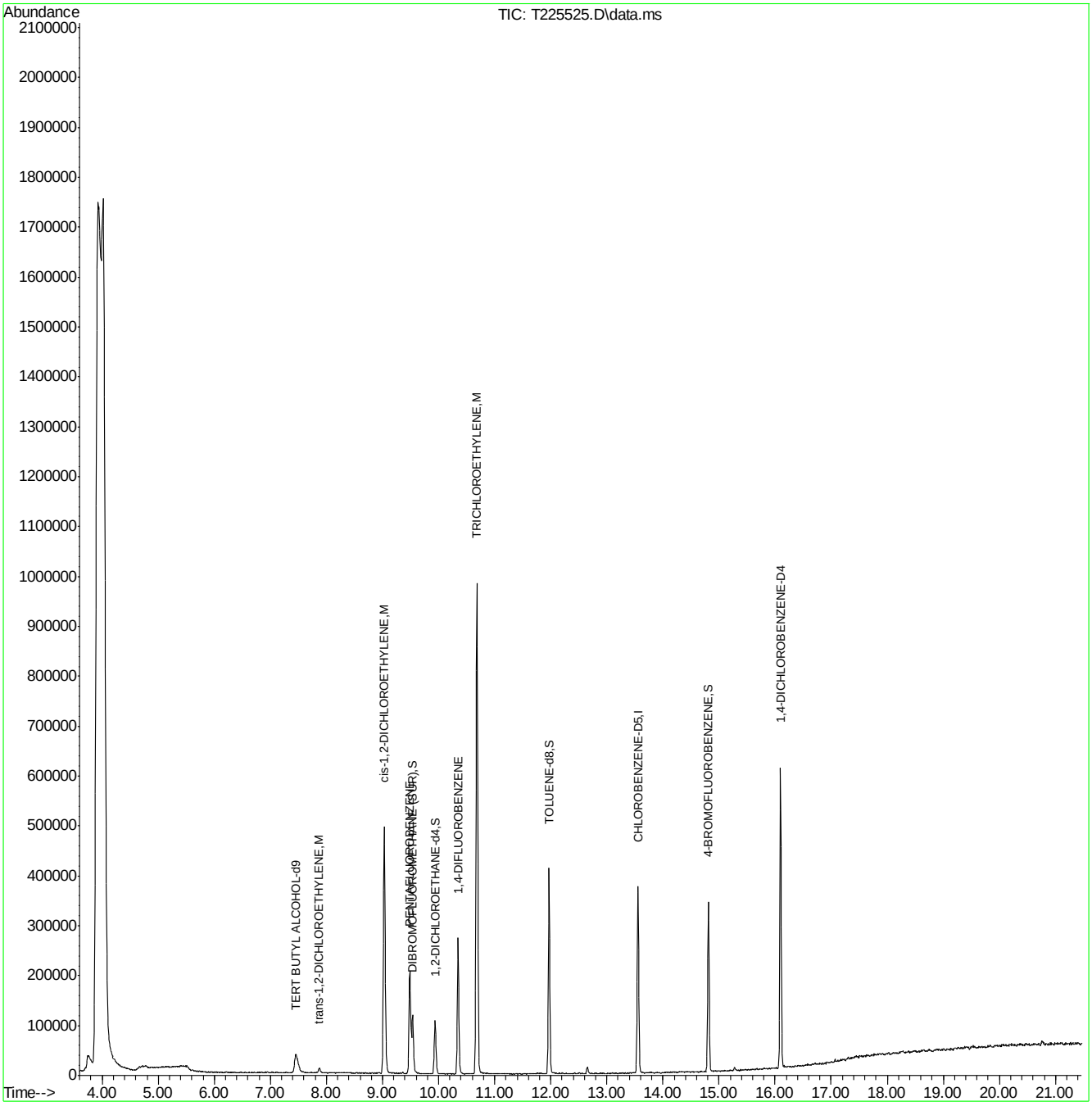
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.446	65	99502	300.00	PPb	-0.03
4) PENTAFLUOROBENZENE	9.486	168	161201	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.349	114	249670	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.555	117	243403	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.096	152	179058	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.538	113	78431	30.46	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 101.53%			
50) 1,2-DICHLOROETHANE-d4	9.935	65	76726	28.64	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 95.47%			
67) TOLUENE-d8	11.970	98	305144	31.75	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 105.83%			
90) 4-BROMOFLUOROBENZENE	14.810	174	110897	29.10	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.00%			
Target Compounds						Qvalue
29) trans-1,2-DICHLOROETHY...	7.869	61	6566	1.64	PPb	89
36) cis-1,2-DICHLOROETHYLENE	9.031	96	250395	81.79	PPb	93
56) TRICHLOROETHYLENE	10.683	95	374982	140.86	PPb	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

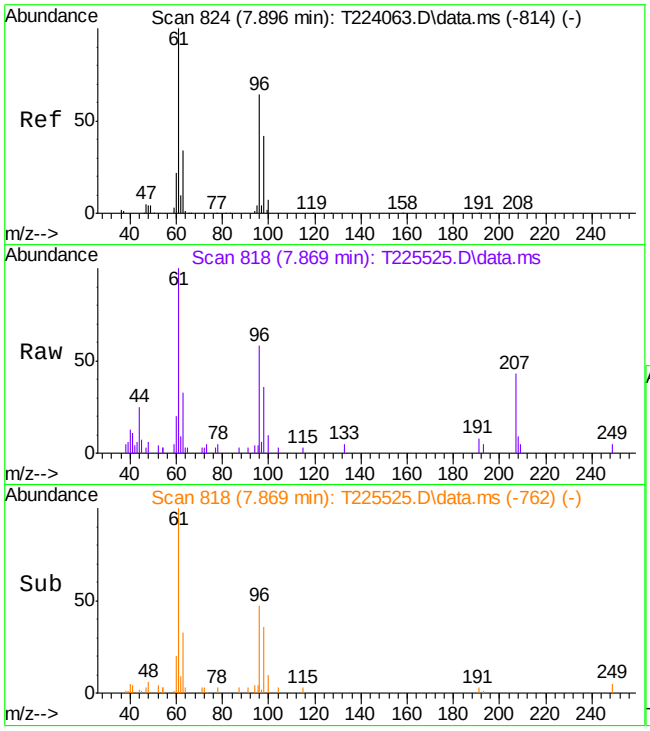
Data Path : C:\msdchem\1\DATA\T\
Data File : T225525.D
Acq On : 12 Jul 2017 6:20 pm
Operator : payalr
Sample : jc46773-3
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 13 14:04:42 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



MT9239.M Thu Jul 13 14:13:15 2017 Page: 2

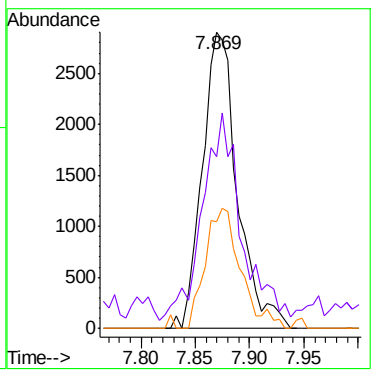
SGS ACCUTEST JC46773

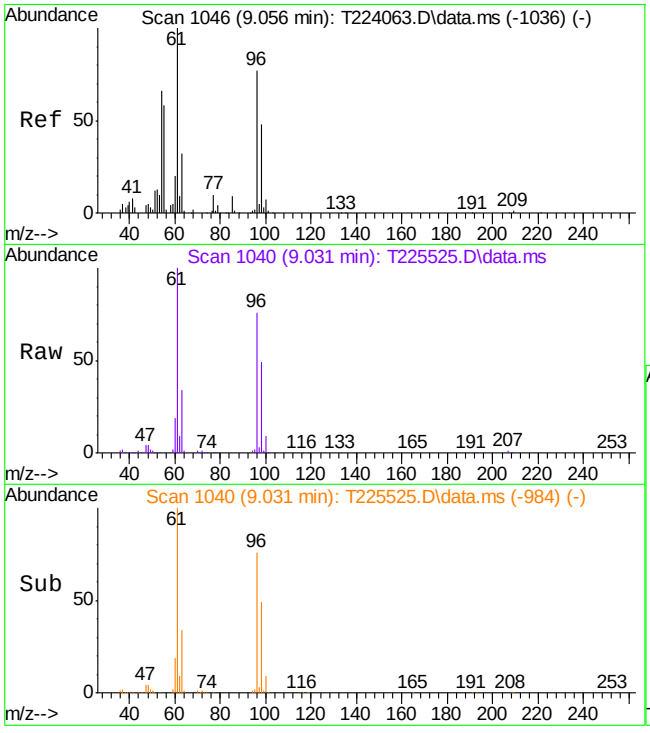


#29
trans-1,2-DICHLOROETHYLENE
Concen: 1.64 PPb
RT: 7.869 min Scan# 818
Delta R.T. -0.005 min
Lab File: T225525.D
Acq: 12 Jul 2017 6:20 pm

Tgt Ion: 61 Resp: 6566

Ion	Ratio	Lower	Upper
61	100		
96	53.3	32.7	92.7
98	36.2	11.3	71.3

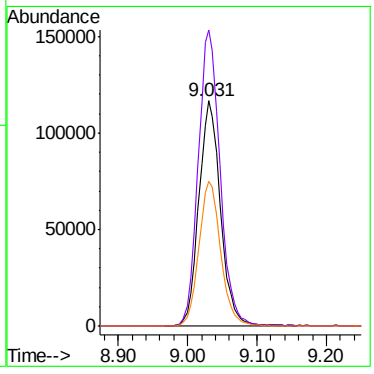




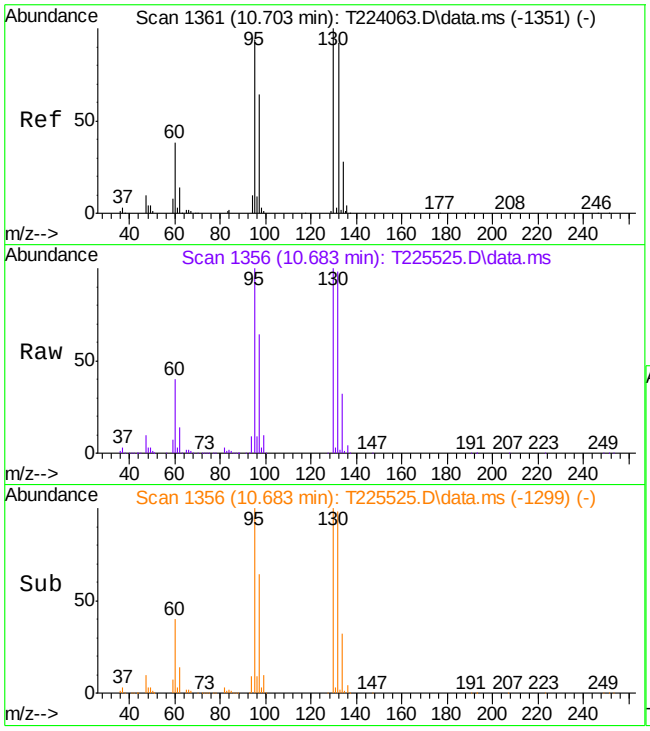
#36
cis-1,2-DICHLOROETHYLENE
Concen: 81.79 PPb
RT: 9.031 min Scan# 1040
Delta R.T. -0.005 min
Lab File: T225525.D
Acq: 12 Jul 2017 6:20 pm

Tgt Ion: 96 Resp: 250395

Ion	Ratio	Lower	Upper
96	100		
61	131.7	113.2	173.2
98	64.3	32.0	92.0



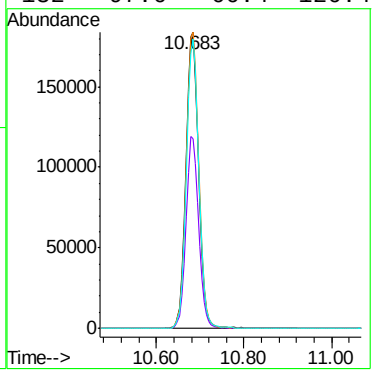
SGS ACCUTEST JC46773



#56
TRICHLOROETHYLENE
Concen: 140.86 PPb
RT: 10.683 min Scan# 1356
Delta R.T. -0.004 min
Lab File: T225525.D
Acq: 12 Jul 2017 6:20 pm

Tgt Ion: 95 Resp: 374982

Ion	Ratio	Lower	Upper
95	100		
97	64.0	32.2	92.2
130	100.0	65.9	125.9
132	97.6	66.4	126.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225527.D
Acq On : 12 Jul 2017 7:21 pm
Operator : payalr
Sample : jc46773-4
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jul 13 14:05:23 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

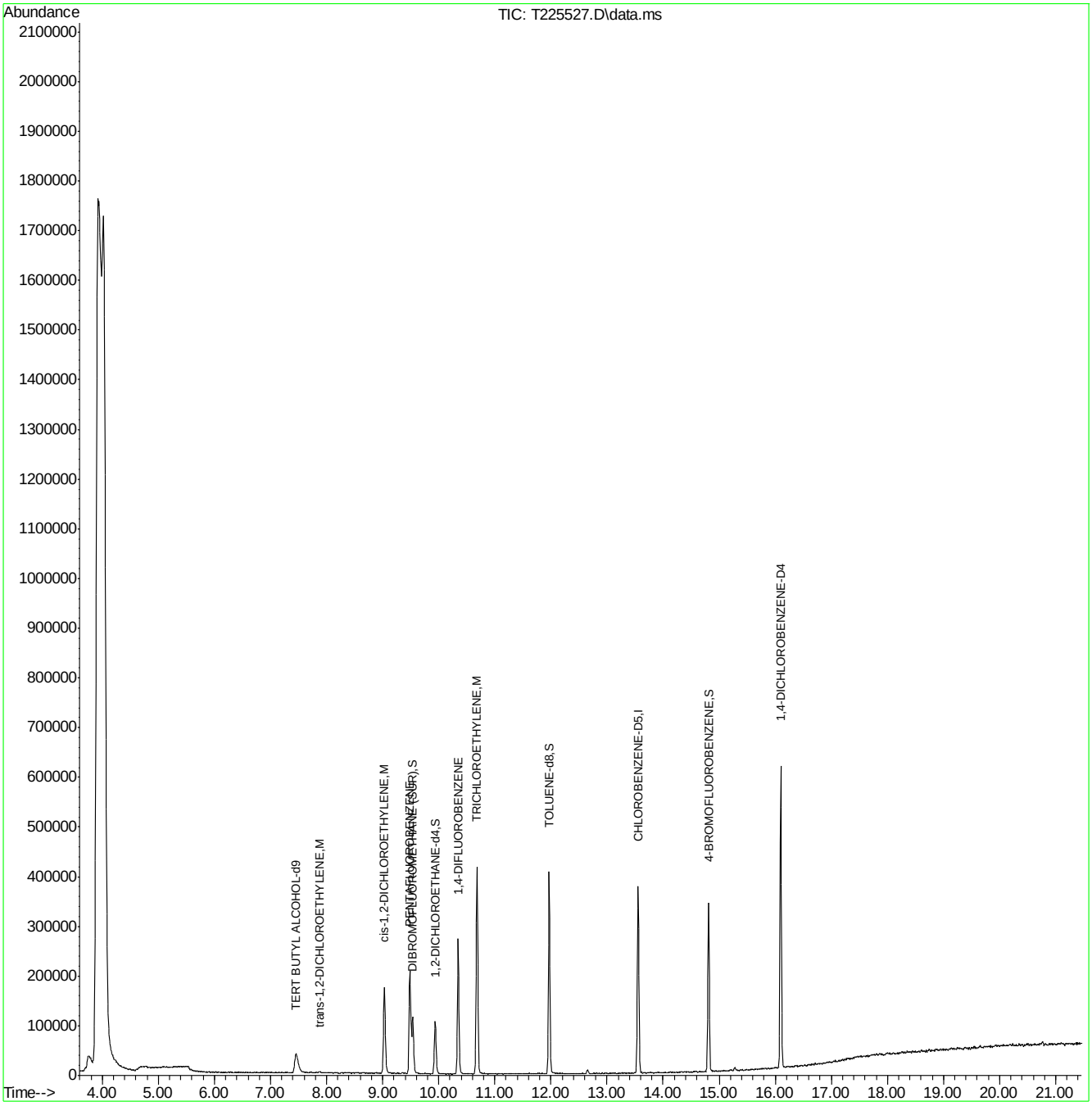
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.448	65	103573	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.488	168	162279	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.346	114	241985	30.00	PPb	-0.01
66) CHLOROBENZENE-D5	13.552	117	242617	30.00	PPb	-0.01
89) 1,4-DICHLOROBENZENE-D4	16.099	152	184738	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.535	113	77291	29.82	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 99.40%			
50) 1,2-DICHLOROETHANE-d4	9.938	65	79246	30.51	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 101.70%			
67) TOLUENE-d8	11.967	98	303160	31.65	PPB	-0.01
Spiked Amount 30.000	Range 78 - 119		Recovery = 105.50%			
90) 4-BROMOFLUOROBENZENE	14.812	174	110741	28.16	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 93.87%			
Target Compounds						Qvalue
29) trans-1,2-DICHLOROETHY...	7.877	61	1137	0.28	PPb	# 72
36) cis-1,2-DICHLOROETHYLENE	9.028	96	90913	29.50	PPb	94
56) TRICHLOROETHYLENE	10.681	95	159284	61.73	PPb	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

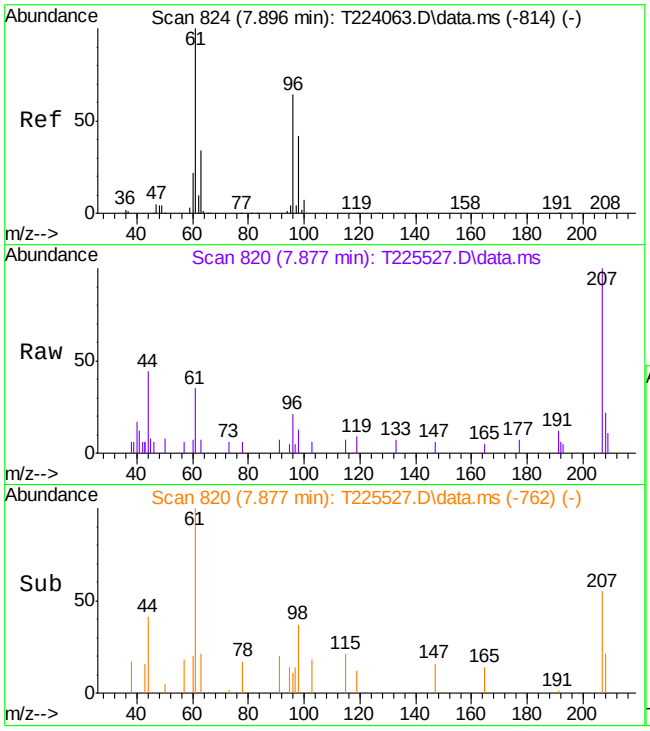
Data Path : C:\msdchem\1\DATA\T\
Data File : T225527.D
Acq On : 12 Jul 2017 7:21 pm
Operator : payalr
Sample : jc46773-4
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jul 13 14:05:23 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



MT9239.M Thu Jul 13 14:13:22 2017 Page: 2

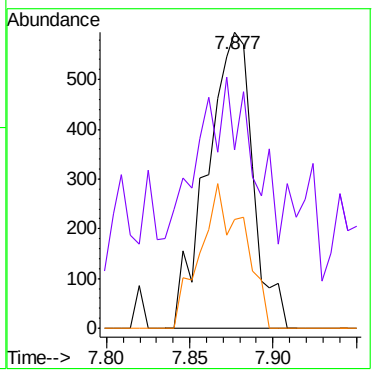
SGS ACCUTEST JC46773

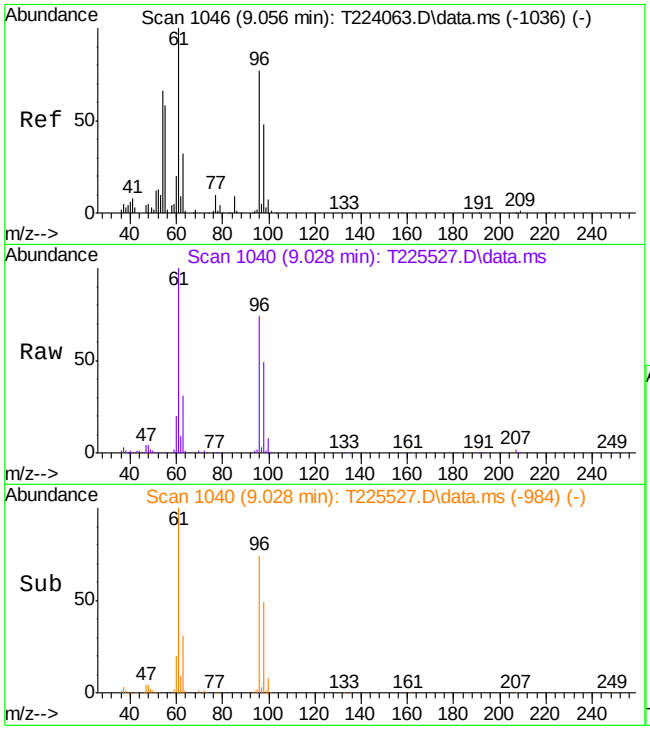


#29
trans-1,2-DICHLOROETHYLENE
Concen: 0.28 PPb
RT: 7.877 min Scan# 820
Delta R.T. 0.002 min
Lab File: T225527.D
Acq: 12 Jul 2017 7:21 pm

Tgt Ion: 61 Resp: 1137

Ion	Ratio	Lower	Upper
61	100		
96	29.9	32.7	92.7#
98	36.8	11.3	71.3

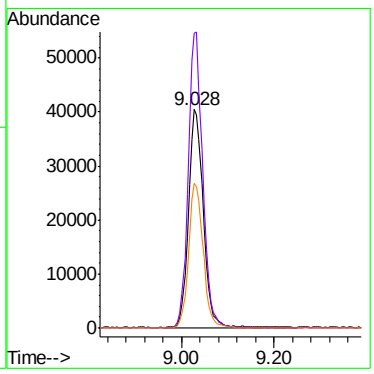


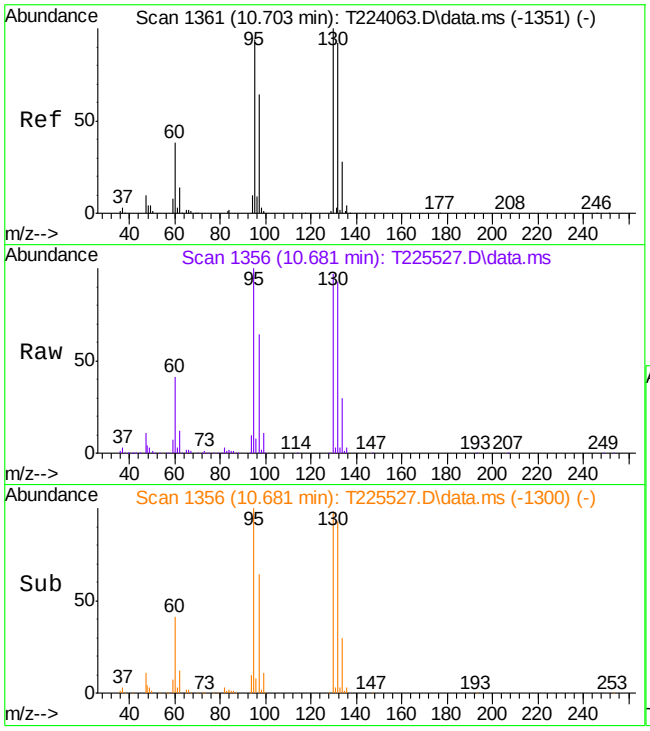


#36
cis-1,2-DICHLOROETHYLENE
Concen: 29.50 PPb
RT: 9.028 min Scan# 1040
Delta R.T. -0.008 min
Lab File: T225527.D
Acq: 12 Jul 2017 7:21 pm

Tgt Ion: 96 Resp: 90913

Ion	Ratio	Lower	Upper
96	100		
61	135.0	113.2	173.2
98	66.5	32.0	92.0

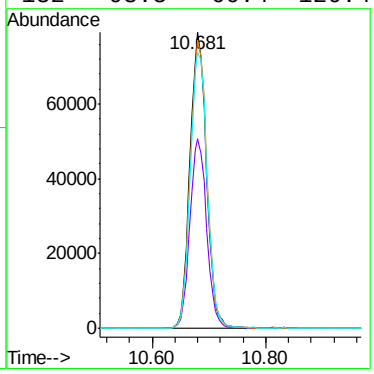




#56
TRICHLOROETHYLENE
Concen: 61.73 PPb
RT: 10.681 min Scan# 1356
Delta R.T. -0.007 min
Lab File: T225527.D
Acq: 12 Jul 2017 7:21 pm

Tgt Ion: 95 Resp: 159284

Ion	Ratio	Lower	Upper
95	100		
97	64.2	32.2	92.2
130	97.5	65.9	125.9
132	93.3	66.4	126.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225531.D
Acq On : 12 Jul 2017 9:22 pm
Operator : payalr
Sample : jc46773-5
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 13 14:08:44 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

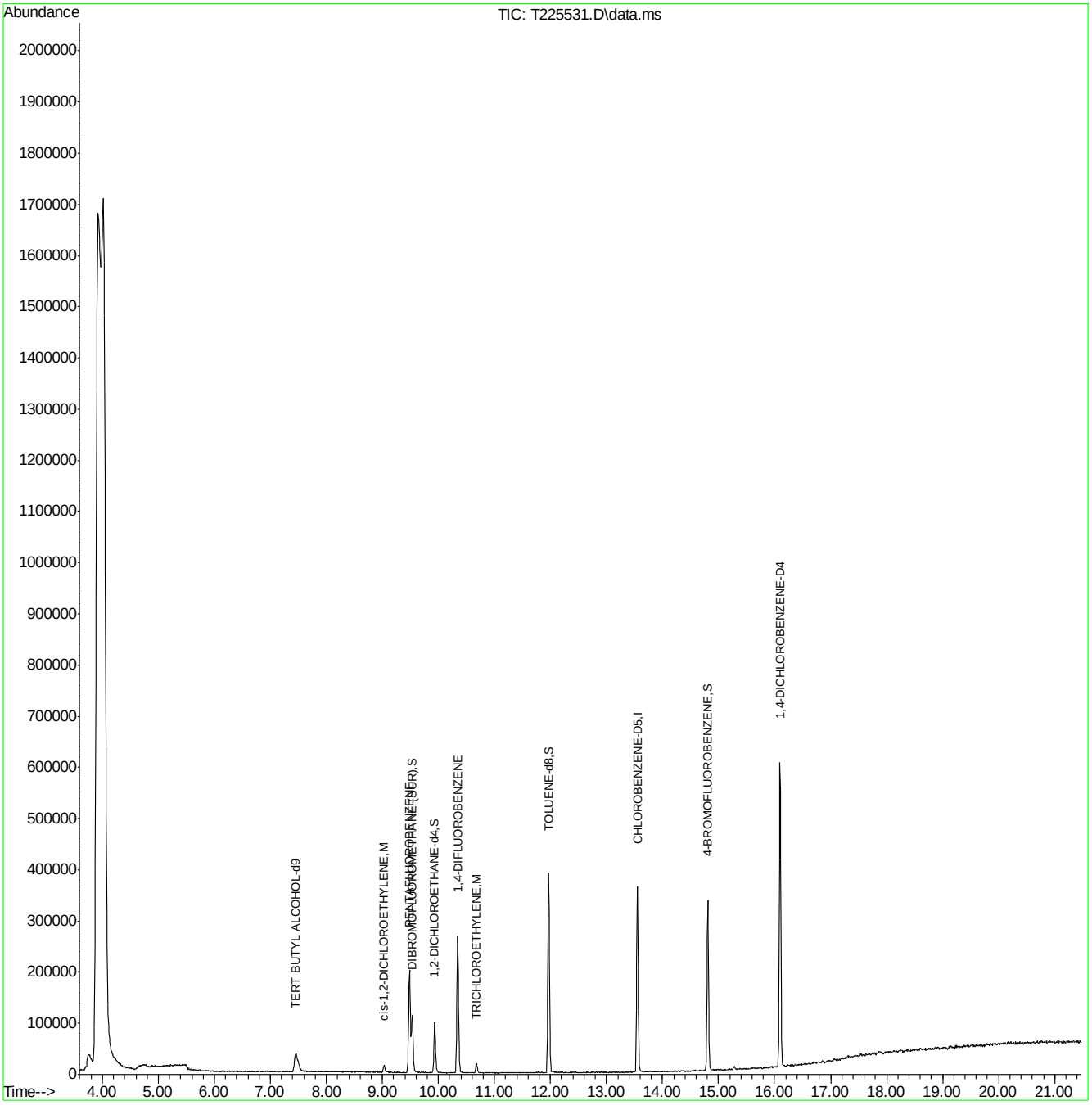
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.452	65	98795	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.487	168	156581	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.345	114	239041	30.00	PPb	-0.01
66) CHLOROBENZENE-D5	13.556	117	237198	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.098	152	178402	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.534	113	74723	29.88	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 99.60%			
50) 1,2-DICHLOROETHANE-d4	9.931	65	75332	29.37	PPB	-0.01
Spiked Amount 30.000	Range 72 - 125		Recovery = 97.90%			
67) TOLUENE-d8	11.971	98	295062	31.51	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 105.03%			
90) 4-BROMOFLUOROBENZENE	14.811	174	110520	29.11	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.03%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.027	96	7835	2.63	PPb	88
56) TRICHLOROETHYLENE	10.685	95	7036	2.76	PPb	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225531.D
Acq On : 12 Jul 2017 9:22 pm
Operator : payalr
Sample : jc46773-5
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 13 14:08:44 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



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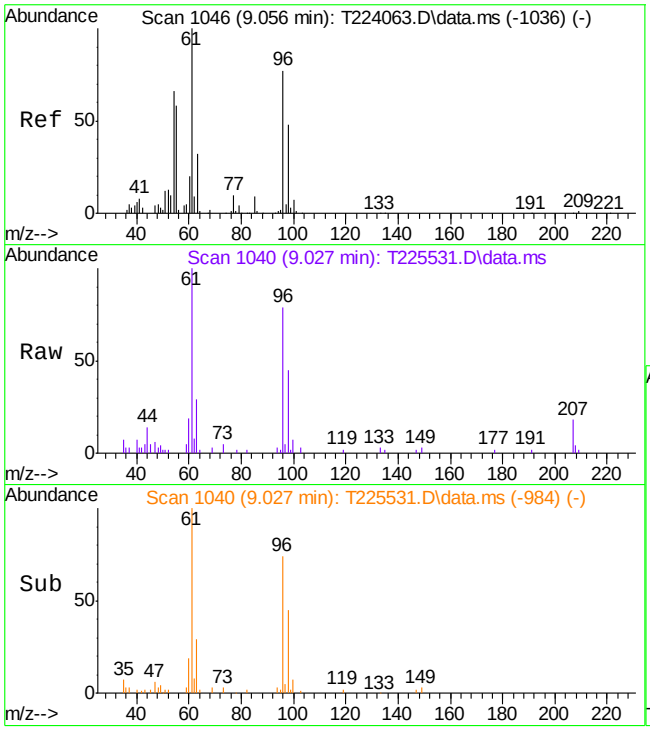
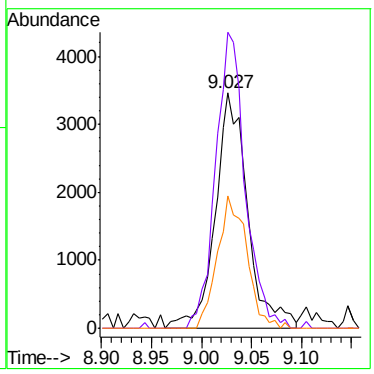
SGS ACCUTEST JC46773

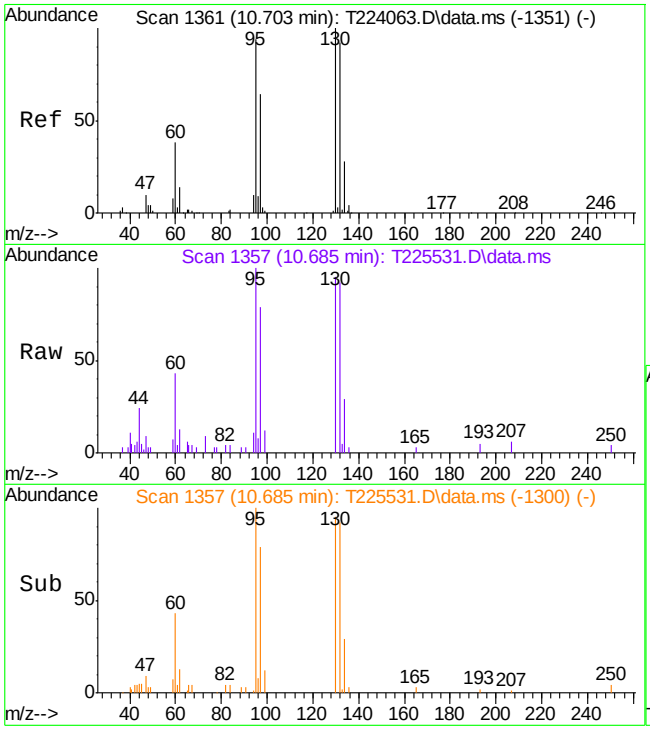


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.63 PPb
RT: 9.027 min Scan# 1040
Delta R.T. -0.009 min
Lab File: T225531.D
Acq: 12 Jul 2017 9:22 pm

Tgt Ion: 96 Resp: 7835

Ion	Ratio	Lower	Upper
96	100		
61	126.0	113.2	173.2
98	56.5	32.0	92.0

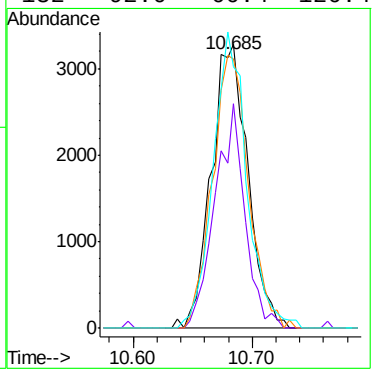




#56
TRICHLOROETHYLENE
Concen: 2.76 PPb
RT: 10.685 min Scan# 1357
Delta R.T. -0.003 min
Lab File: T225531.D
Acq: 12 Jul 2017 9:22 pm

Tgt Ion: 95 Resp: 7036

Ion	Ratio	Lower	Upper
95	100		
97	79.0	32.2	92.2
130	94.9	65.9	125.9
132	92.0	66.4	126.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225528.D
Acq On : 12 Jul 2017 7:51 pm
Operator : payalr
Sample : jc46773-6
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 13 14:06:37 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

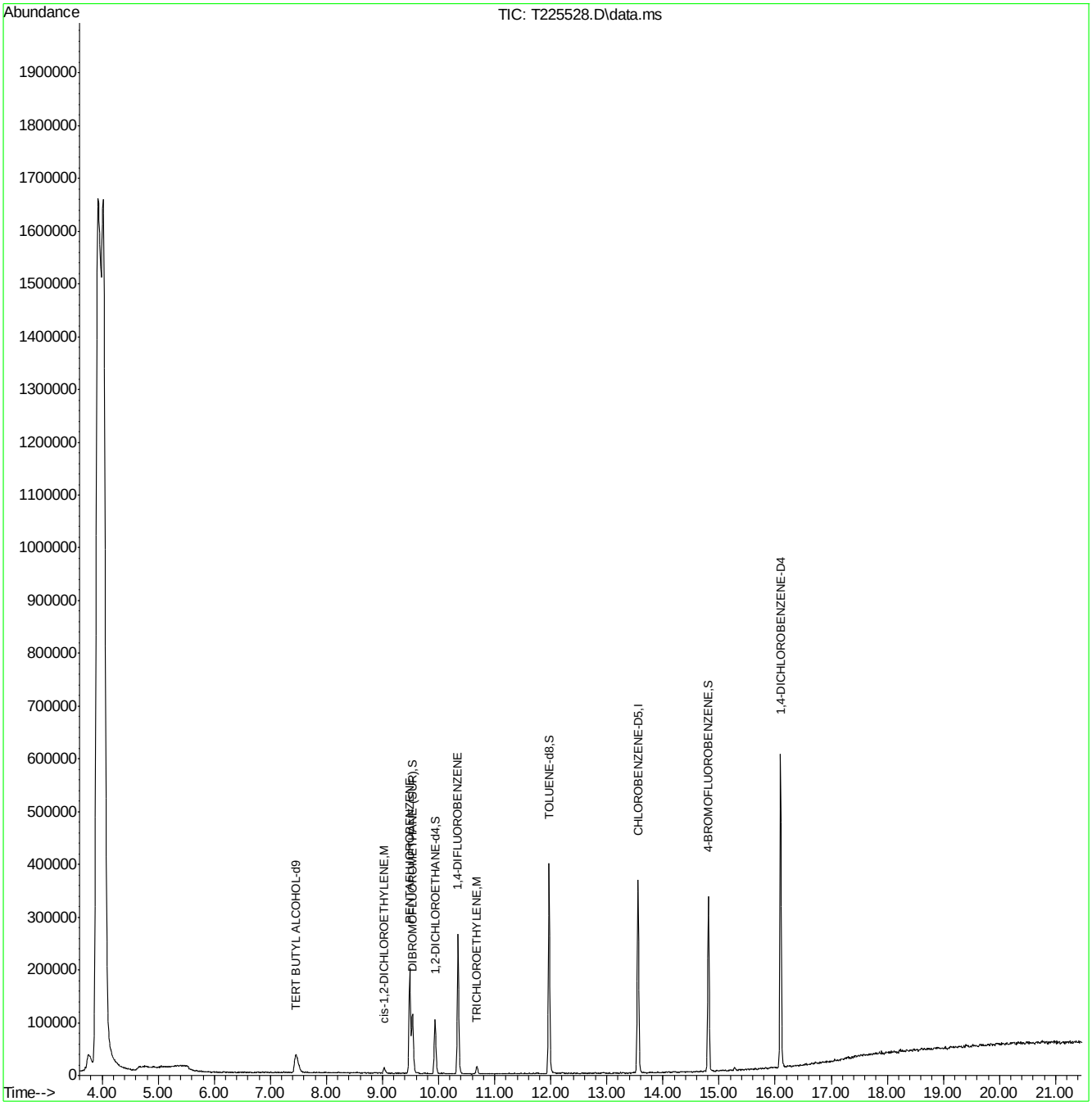
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.456	65	99319	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.485	168	157038	30.00	PPB	-0.01
49) 1,4-DIFLUOROBENZENE	10.343	114	239376	30.00	PPb	-0.02
66) CHLOROBENZENE-D5	13.554	117	236064	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.101	152	177113	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.537	113	75412	30.07	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 100.23%			
50) 1,2-DICHLOROETHANE-d4	9.935	65	76218	29.67	PPB	-0.01
Spiked Amount 30.000	Range 72 - 125		Recovery = 98.90%			
67) TOLUENE-d8	11.969	98	296122	31.77	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 105.90%			
90) 4-BROMOFLUOROBENZENE	14.809	174	106389	28.22	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 94.07%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.030	96	6574	2.20	PPb	# 77
56) TRICHLOROETHYLENE	10.678	95	5719	2.24	PPb	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225528.D
Acq On : 12 Jul 2017 7:51 pm
Operator : payalr
Sample : jc46773-6
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 13 14:06:37 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



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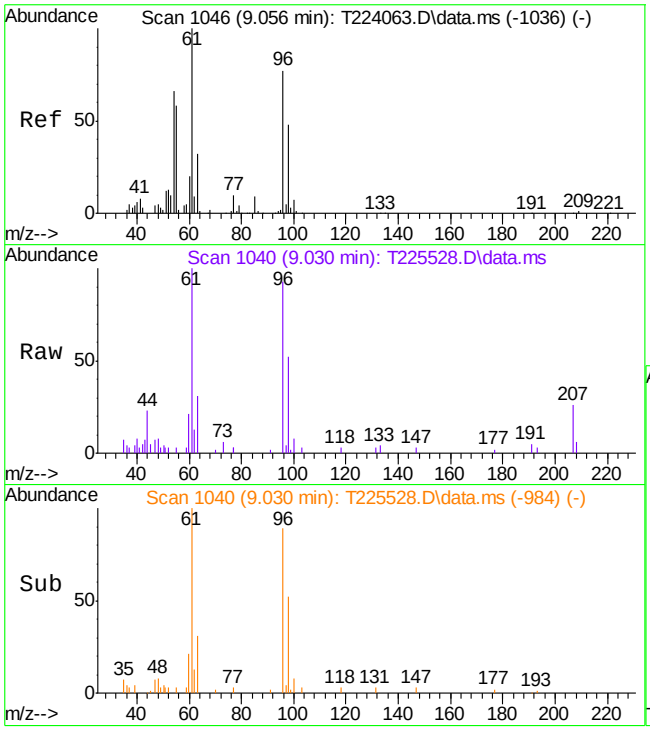
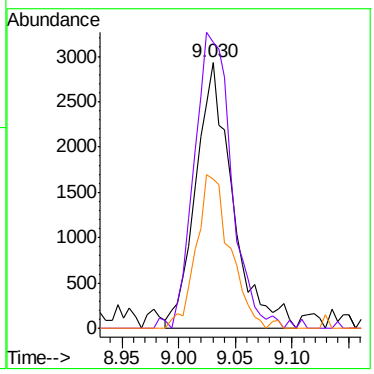
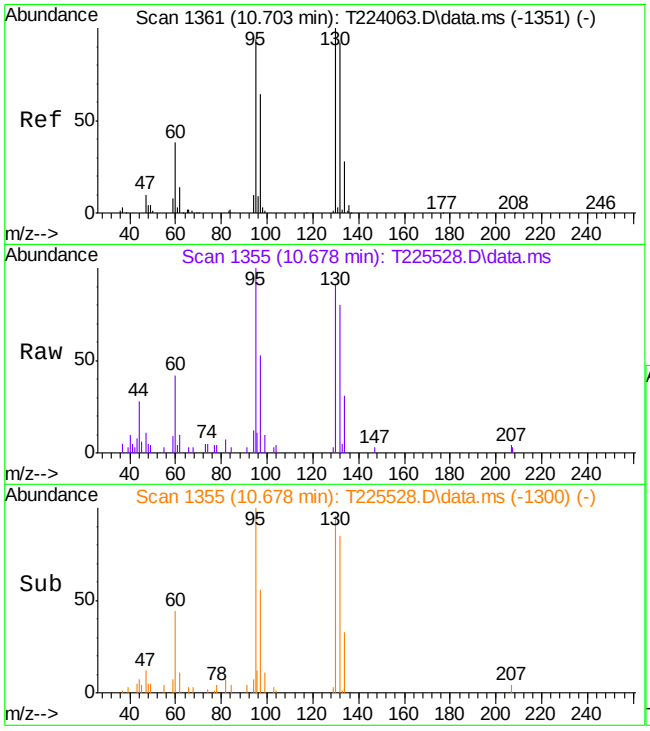


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.20 PPb
RT: 9.030 min Scan# 1040
Delta R.T. -0.005 min
Lab File: T225528.D
Acq: 12 Jul 2017 7:51 pm

Tgt Ion: 96 Resp: 6574

Ion	Ratio	Lower	Upper
96	100		
61	107.3	113.2	173.2#
98	55.9	32.0	92.0

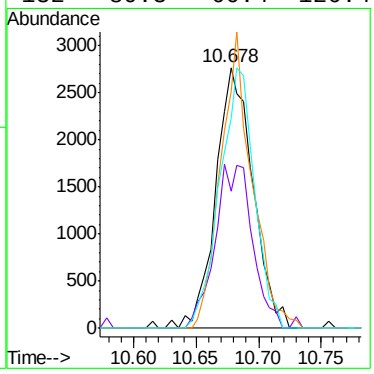




#56
TRICHLOROETHYLENE
Concen: 2.24 PPb
RT: 10.678 min Scan# 1355
Delta R.T. -0.010 min
Lab File: T225528.D
Acq: 12 Jul 2017 7:51 pm

Tgt Ion: 95 Resp: 5719

Ion	Ratio	Lower	Upper
95	100		
97	52.6	32.2	92.2
130	90.9	65.9	125.9
132	80.3	66.4	126.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225529.D
Acq On : 12 Jul 2017 8:22 pm
Operator : payalr
Sample : jc46773-7
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 13 14:07:09 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

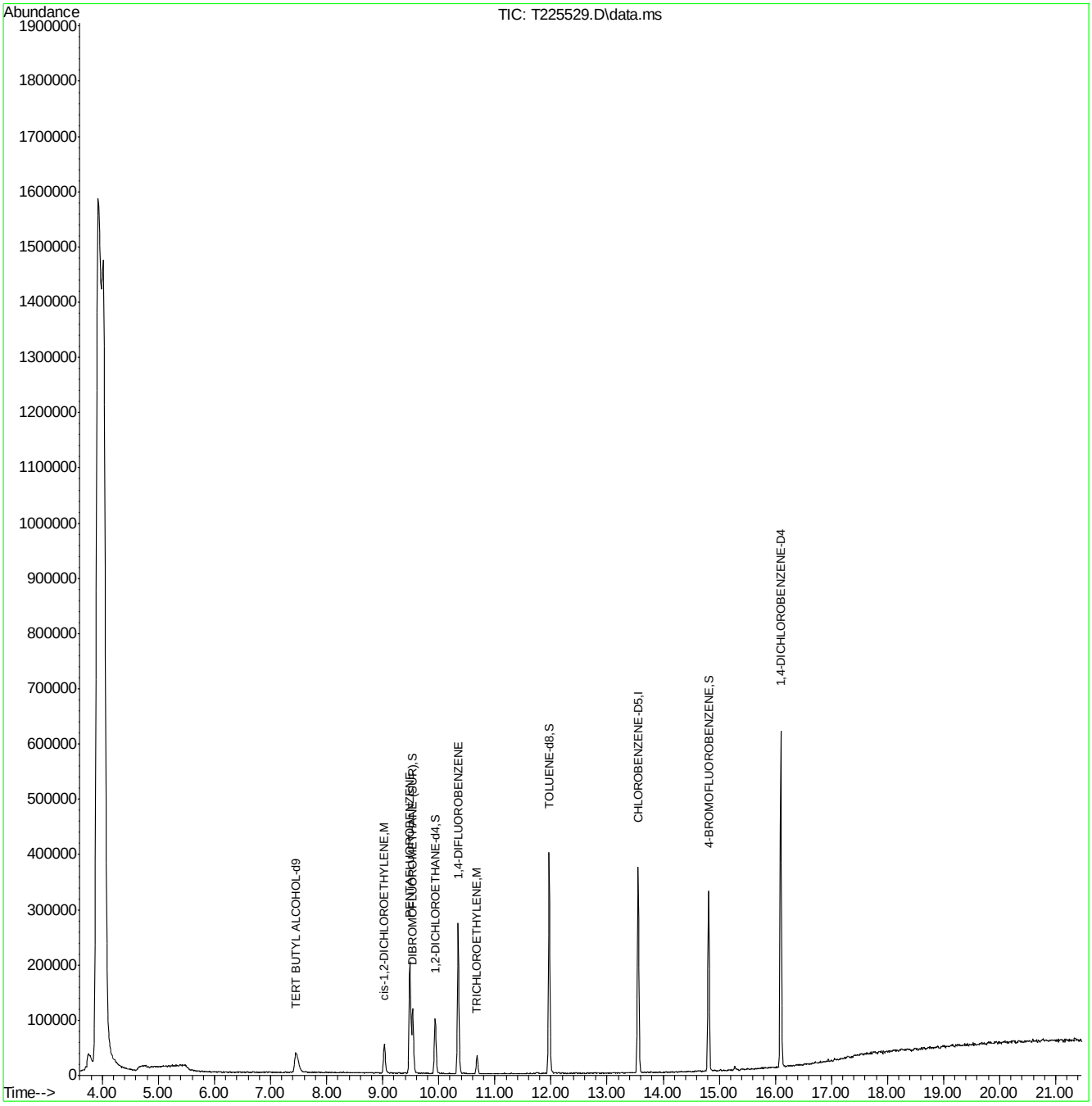
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.448	65	102608	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.487	168	159911	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.345	114	241608	30.00	PPb	-0.01
66) CHLOROBENZENE-D5	13.551	117	237427	30.00	PPb	-0.01
89) 1,4-DICHLOROBENZENE-D4	16.098	152	180009	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.535	113	75856	29.70	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 99.00%			
50) 1,2-DICHLOROETHANE-d4	9.932	65	76801	29.62	PPB	-0.01
Spiked Amount 30.000	Range 72 - 125		Recovery = 98.73%			
67) TOLUENE-d8	11.967	98	298560	31.85	PPB	-0.01
Spiked Amount 30.000	Range 78 - 119		Recovery = 106.17%			
90) 4-BROMOFLUOROBENZENE	14.812	174	109723	28.64	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 95.47%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.027	96	29330	9.66	PPb	96
56) TRICHLOROETHYLENE	10.675	95	12254	4.76	PPb	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

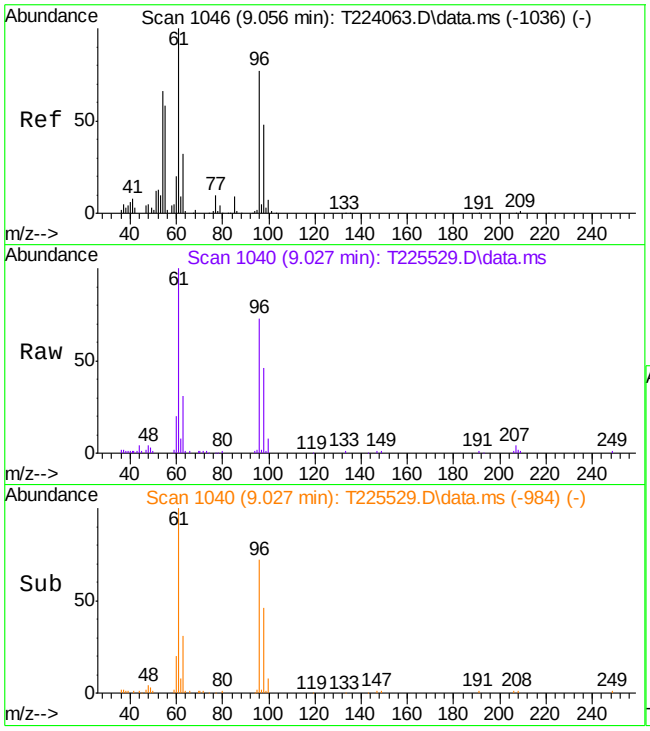
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225529.D
Acq On : 12 Jul 2017 8:22 pm
Operator : payalr
Sample : jc46773-7
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 13 14:07:09 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



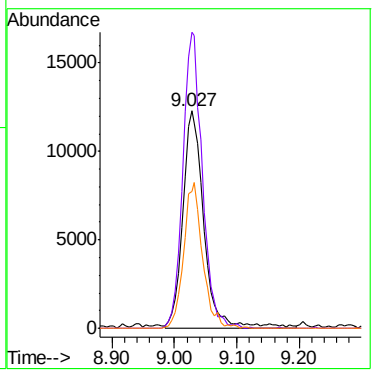
MT9239.M Thu Jul 13 14:13:28 2017 Page: 2

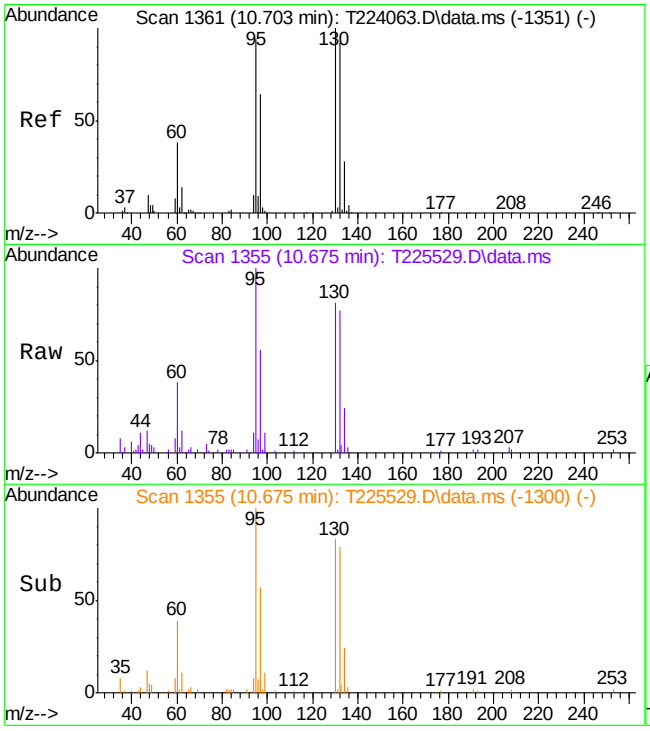


#36
cis-1,2-DICHLOROETHYLENE
Concen: 9.66 PPb
RT: 9.027 min Scan# 1040
Delta R.T. -0.008 min
Lab File: T225529.D
Acq: 12 Jul 2017 8:22 pm

Tgt Ion: 96 Resp: 29330

Ion	Ratio	Lower	Upper
96	100		
61	137.7	113.2	173.2
98	63.5	32.0	92.0

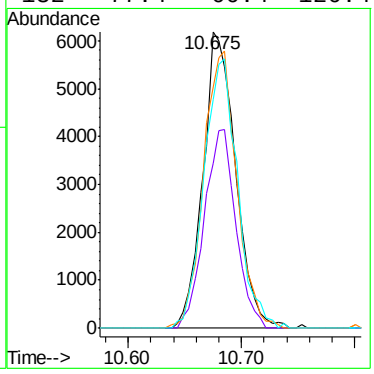




#56
TRICHLOROETHYLENE
Concen: 4.76 PPb
RT: 10.675 min Scan# 1355
Delta R.T. -0.013 min
Lab File: T225529.D
Acq: 12 Jul 2017 8:22 pm

Tgt Ion: 95 Resp: 12254

Ion	Ratio	Lower	Upper
95	100		
97	55.7	32.2	92.2
130	81.5	65.9	125.9
132	77.4	66.4	126.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225530.D
Acq On : 12 Jul 2017 8:52 pm
Operator : payalr
Sample : jc46773-8
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 13 14:07:58 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

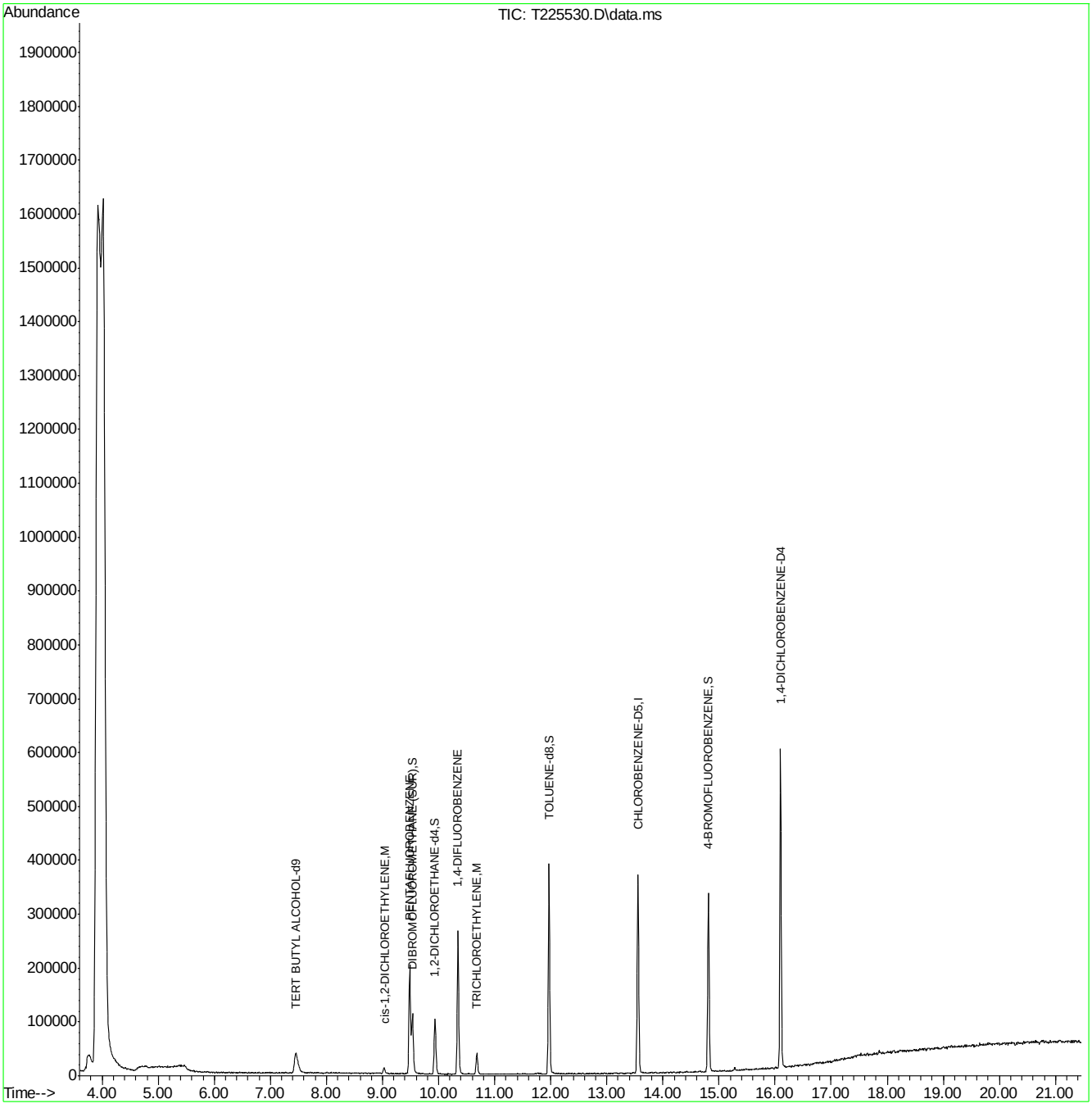
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.456	65	100607	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.486	168	159434	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.343	114	238511	30.00	PPb	-0.01
66) CHLOROBENZENE-D5	13.555	117	236303	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.096	152	177349	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.533	113	73860	29.00	PPb	-0.02
Spiked Amount 30.000	Range 79 - 120		Recovery = 96.67%			
50) 1,2-DICHLOROETHANE-d4	9.930	65	76861	30.03	PPB	-0.01
Spiked Amount 30.000	Range 72 - 125		Recovery = 100.10%			
67) TOLUENE-d8	11.970	98	295252	31.65	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 105.50%			
90) 4-BROMOFLUOROBENZENE	14.810	174	107398	28.45	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 94.83%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.036	96	6590	2.18	PPb	89
56) TRICHLOROETHYLENE	10.683	95	14671	5.77	PPb	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

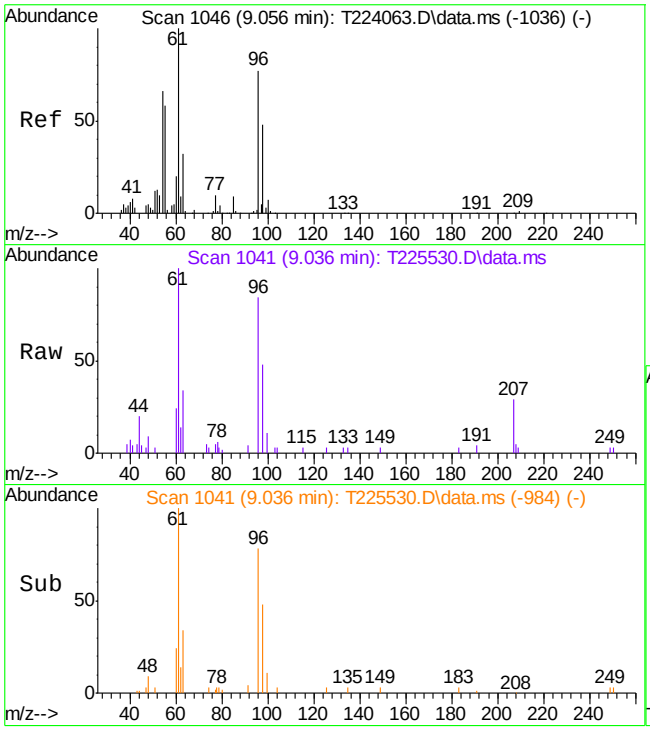
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225530.D
Acq On : 12 Jul 2017 8:52 pm
Operator : payalr
Sample : jc46773-8
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 13 14:07:58 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



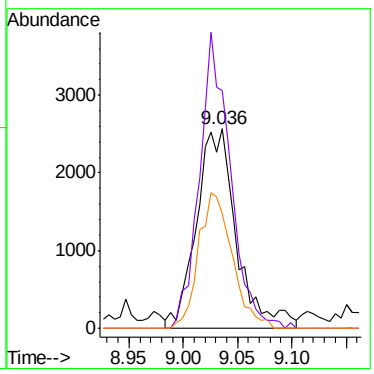
MT9239.M Thu Jul 13 14:13:31 2017 Page: 2

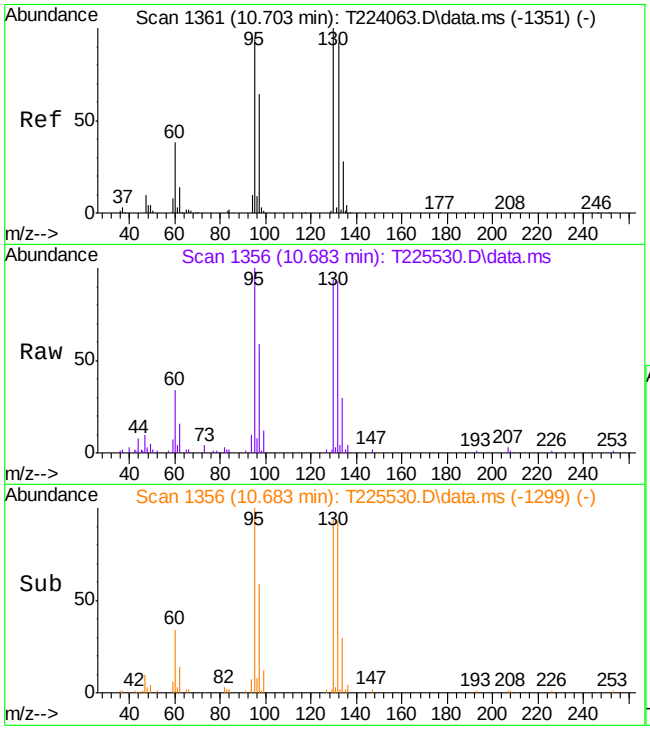


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.18 PPb
RT: 9.036 min Scan# 1041
Delta R.T. 0.000 min
Lab File: T225530.D
Acq: 12 Jul 2017 8:52 pm

Tgt Ion: 96 Resp: 6590

Ion	Ratio	Lower	Upper
96	100		
61	124.7	113.2	173.2
98	59.8	32.0	92.0

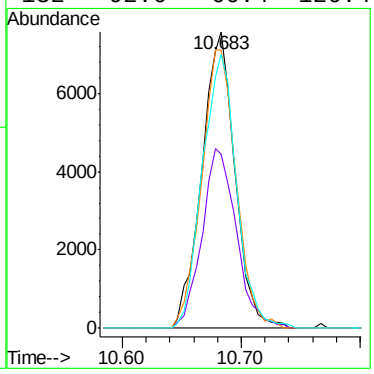




#56
TRICHLOROETHYLENE
Concen: 5.77 PPb
RT: 10.683 min Scan# 1356
Delta R.T. -0.004 min
Lab File: T225530.D
Acq: 12 Jul 2017 8:52 pm

Tgt Ion: 95 Resp: 14671

Ion	Ratio	Lower	Upper
95	100		
97	58.9	32.2	92.2
130	93.9	65.9	125.9
132	92.6	66.4	126.4



SGS ACCUTEST JC46773

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225522.D
Acq On : 12 Jul 2017 4:49 pm
Operator : payalr
Sample : jc46773-9
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 13 14:02:24 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

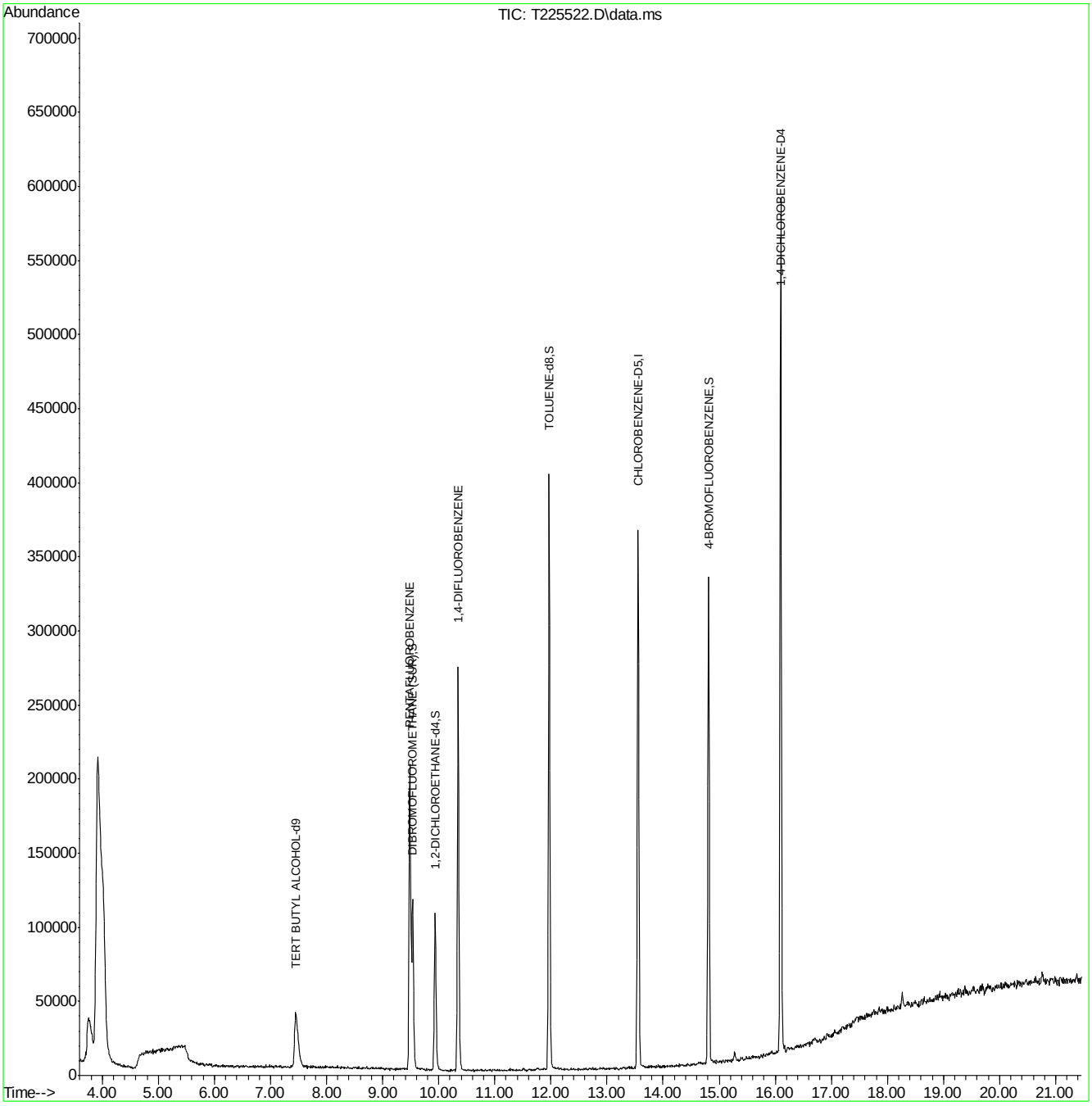
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.449	65	98833	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.488	168	162346	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.346	114	245124	30.00	PPb	-0.01
66) CHLOROBENZENE-D5	13.552	117	238987	30.00	PPb	-0.01
89) 1,4-DICHLOROBENZENE-D4	16.099	152	173370	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.530	113	77096	29.73	PPb	-0.02
Spiked Amount 30.000	Range 79 - 120		Recovery = 99.10%			
50) 1,2-DICHLOROETHANE-d4	9.933	65	77980	29.64	PPB	-0.01
Spiked Amount 30.000	Range 72 - 125		Recovery = 98.80%			
67) TOLUENE-d8	11.967	98	302606	32.07	PPB	-0.01
Spiked Amount 30.000	Range 78 - 119		Recovery = 106.90%			
90) 4-BROMOFLUOROBENZENE	14.813	174	107157	29.04	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 96.80%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225522.D
Acq On : 12 Jul 2017 4:49 pm
Operator : payalr
Sample : jc46773-9
Misc : MS18049,VT9259,W,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 13 14:02:24 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



MT9239.M Thu Jul 13 14:13:06 2017 Page: 2

SGS ACCUTEST JC46773

Quantitation Report (LSC Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225508.D
Acq On : 12 Jul 2017 8:57 am
Operator : payalr
Sample : mb
Misc : MS17680,VT9259,W,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 12 12:28:18 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.449	65	95072	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.488	168	157686	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.346	114	238151	30.00	PPb	-0.01
66) CHLOROBENZENE-D5	13.552	117	234302	30.00	PPb	-0.01
89) 1,4-DICHLOROBENZENE-D4	16.099	152	179031	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.535	113	73483	29.18	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 97.27%			
50) 1,2-DICHLOROETHANE-d4	9.933	65	77359	30.27	PPB	-0.01
Spiked Amount 30.000	Range 72 - 125		Recovery = 100.90%			
67) TOLUENE-d8	11.967	98	299071	32.33	PPB	-0.01
Spiked Amount 30.000	Range 78 - 119		Recovery = 107.77%			
90) 4-BROMOFLUOROBENZENE	14.813	174	108420	28.45	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 94.83%			
Target Compounds						Qvalue

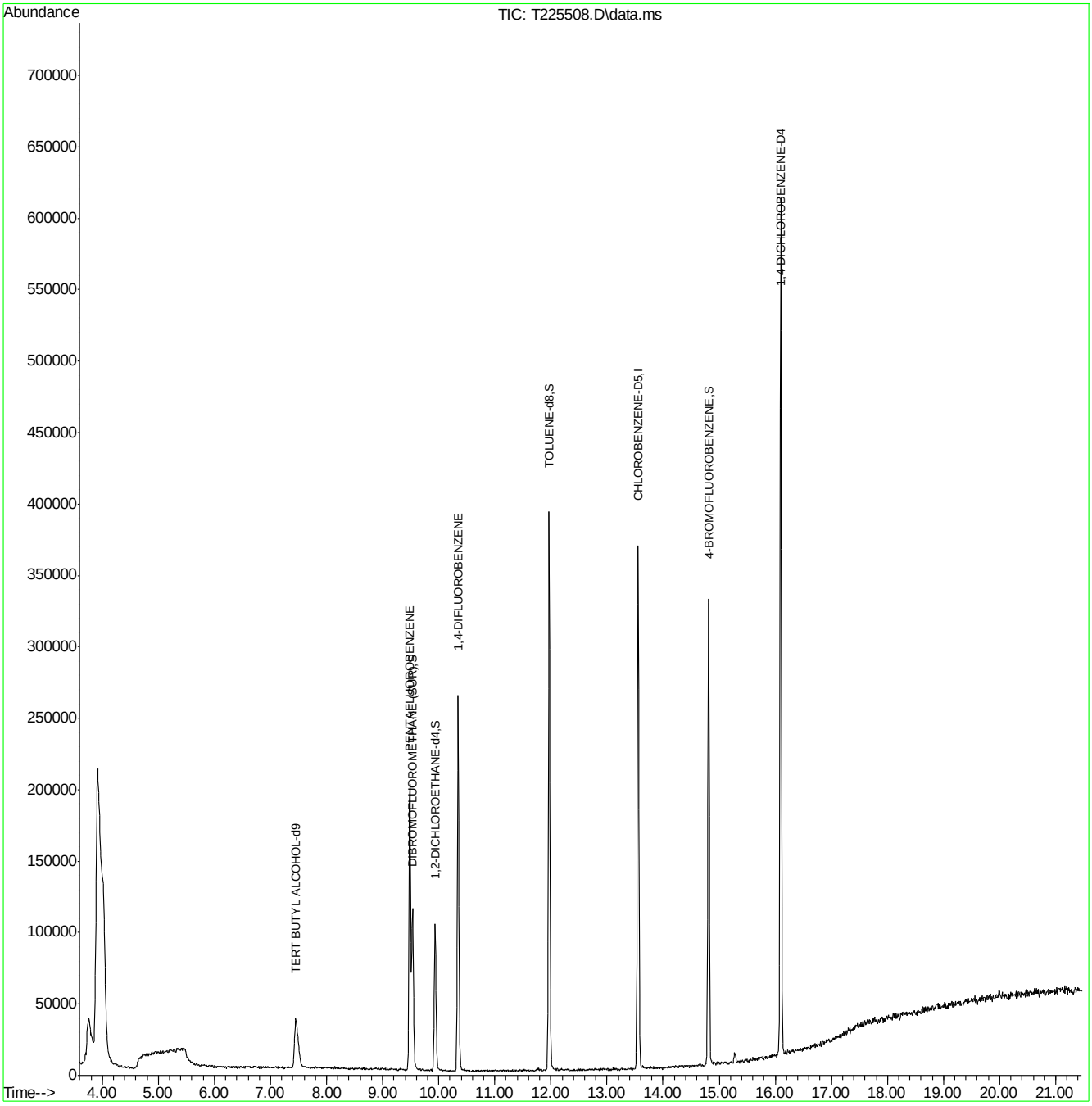
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC46773

Quantitation Report (LSC Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225508.D
Acq On : 12 Jul 2017 8:57 am
Operator : payalr
Sample : mb
Misc : MS17680,VT9259,W,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 12 12:28:18 2017
Quant Method : C:\MSDChem\1\METHODS\MT9239.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Jun 19 09:28:50 2017
Response via : Initial Calibration



SGS ACCUTEST JC46773

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5071317W1.CSV Date Analyzed: 07/13/17 Methods: EPA 245.1
Analyst: JA Run ID: MA42405
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:55	MA42405-STD1	1		B=1.6911e-004,C=1.7817e-002,R=0.9999072
08:56	MA42405-STD2	1		STDB
08:57	MA42405-STD3	1		STDC
08:59	MA42405-STD4	1		STDD
09:00	MA42405-STD5	1		STDE
09:02	MA42405-STD6	1		STDF
09:17	MA42405-STD7	1		STDA
09:20	MA42405-ICV1	1		
09:21	MA42405-ICB1	1		
09:23	MA42405-ICCV1	1		
09:24	MA42405-CCB1	1		
09:26	MA42405-CRI1	1		
09:29	MP1888-MB1	1		
09:30	MP1888-B1	1		
09:31	MP1888-S1	1		
09:33	MP1888-S2	1		
09:35	JC46773-6A	1		
09:36	JC46773-7A	1		
09:38	JC46773-8A	1		
---------->	Last reportable sample/prep for job JC46773			
09:39	ZZZZZZ	1		
09:40	ZZZZZZ	1		
09:42	MA42405-CCV1	1		
09:43	MA42405-CCB2	1		
09:45	ZZZZZZ	1		
09:46	ZZZZZZ	1		
09:47	ZZZZZZ	1		
09:49	ZZZZZZ	1		
09:50	ZZZZZZ	1		
09:51	MP1889-MB1	1		
09:53	MA42405-CCV2	1		
09:54	MA42405-CCB3	1		
09:56	MP1889-B1	1		
09:57	MP1889-S1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5071317W1.CSV Date Analyzed: 07/13/17 Methods: EPA 245.1
Analyst: JA Run ID: MA42405
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:59	MP1889-S2	1		
10:01	JC46821-1	1		(sample used for QC only; not part of login JC46773)
10:02	ZZZZZZ	1		
10:04	MA42405-CRI2	1		
10:06	MA42405-CCV3	1		
10:07	MA42405-CCB4	1		

----------> Last reportable CCB for job JC46773
Refer to raw data for calibration curve and standards.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5071317W1.CSV Date Analyzed: 07/13/17 Methods: EPA 245.1
QC Limits: result < RL Run ID: MA42405 Units: ug/l

Time: / Sample ID:			09:21 ICB1		09:24 CCB1		09:43 CCB2		09:54 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.058	-0.028	<0.20	-0.011	<0.20	-0.0055	<0.20	-0.014	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5071317W1.CSV Date Analyzed: 07/13/17 Methods: EPA 245.1
QC Limits: result < RL Run ID: MA42405 Units: ug/l

Time:			10:07	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Mercury	0.20	.058	0.0018	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5071317W1.CSV Date Analyzed: 07/13/17 Methods: EPA 245.1
QC Limits: 95 to 105 % Recovery Run ID: MA42405 Units: ug/l

Time:		09:23	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Mercury	2.5	2.5	100.0

(*) Outside of QC limits
(anr) Analyte not requested

8.1.2
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5071317W1.CSV Date Analyzed: 07/13/17 Methods: EPA 245.1
QC Limits: 90 to 110 % Recovery Run ID: MA42405 Units: ug/l

Time:		09:20			09:42			09:53	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	3	2.8	93.3	2.5	2.5	100.0	2.5	2.5	100.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5071317W1.CSV Date Analyzed: 07/13/17 Methods: EPA 245.1
QC Limits: 90 to 110 % Recovery Run ID: MA42405 Units: ug/l

Time:		10:06	
Sample ID:	CCV	CCV3	
Metal	True	Results	% Rec
Mercury	2.5	2.4	96.0

(*) Outside of QC limits
(anr) Analyte not requested

8.1.3
8

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5071317W1.CSV Date Analyzed: 07/13/17 Methods: EPA 245.1
QC Limits: 70 to 130 % Recovery Run ID: MA42405 Units: ug/l

Time:			09:26		10:04	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Mercury	0.20		0.17	85.0	0.20	100.0

(*) Outside of QC limits
(anr) Analyte not requested

8.1.4
8

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:51	MA42410-STD1	1		STDA
10:55	MA42410-STD2	1		STDB
10:59	ZZZZZZ	1		
11:03	ZZZZZZ	1		
11:08	ZZZZZZ	1		
11:16	MA42410-ICV1	1		
11:28	MA42410-ICB1	1		
11:33	MA42410-ICCV1	1		
11:41	MA42410-CCB1	1		
11:45	MA42410-CRI1	1		
11:49	MA42410-CRID1	1		
11:53	MA42410-ICSA1	1		
11:58	MA42410-ICSAB1	1		
12:02	MA42410-HSTD1	1		
12:06	MA42410-HSTD2	1		
12:11	ZZZZZZ	1		
12:15	ZZZZZZ	1		
12:20	ZZZZZZ	1		
12:24	MA42410-CCV1	1		
12:28	MA42410-CCB2	1		
12:32	ZZZZZZ	1		
12:38	MA42410-CRID2	1		
12:43	MA42410-CRI2	1		
12:47	MP1867-MB1	1		
12:51	MP1867-B1	1		
12:55	MP1867-S1	1		
12:59	MP1867-S2	1		
13:04	JC46667-2F	1		(sample used for QC only; not part of login JC46773)
13:08	MP1867-SD1	5		
13:12	MA42410-CCV2	1		
13:16	MA42410-CCB3	1		
13:21	ZZZZZZ	1		
13:25	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:29	ZZZZZZ	1		
13:34	ZZZZZZ	1		
13:38	ZZZZZZ	1		
13:42	ZZZZZZ	1		
13:46	ZZZZZZ	1		
13:51	ZZZZZZ	1		
13:55	ZZZZZZ	1		
13:59	MA42410-CCV3	1		
14:03	MA42410-CCB4	1		
14:08	ZZZZZZ	1		
14:12	ZZZZZZ	1		
14:16	ZZZZZZ	1		
14:21	ZZZZZZ	1		
14:25	ZZZZZZ	1		
14:29	ZZZZZZ	1		
14:34	ZZZZZZ	1		
14:38	ZZZZZZ	1		
14:43	ZZZZZZ	1		
14:47	ZZZZZZ	1		
14:51	MA42410-CCV4	1		
14:55	MA42410-CCB5	1		
15:00	MP1824-MB1	1		
15:04	MP1824-B1	1		
15:08	MP1824-S1	1		
15:12	MP1824-S2	1		
15:16	MC50833-1	1		(sample used for QC only; not part of login JC46773)
15:20	MP1824-SD1	5		
15:25	ZZZZZZ	1		
15:29	ZZZZZZ	1		
15:33	ZZZZZZ	1		
15:38	MA42410-CCV5	1		
15:42	MA42410-CCB6	1		
15:46	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:51	ZZZZZZ	1		
15:55	ZZZZZZ	1		
15:59	ZZZZZZ	1		
16:03	ZZZZZZ	1		
16:08	ZZZZZZ	1		
16:12	ZZZZZZ	1		
16:16	ZZZZZZ	1		
16:21	ZZZZZZ	1		
16:25	MA42410-CCV6	1		
16:29	MA42410-CCB7	1		
16:33	ZZZZZZ	1		
16:38	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:46	ZZZZZZ	1		
16:51	MP1876-MB1	1		
16:55	MP1876-B1	1		
16:59	MP1876-S1	1		high rsd-s
17:03	MP1876-S2	1		high rsd-s
17:07	JC46741-2	1		(sample used for QC only; not part of login JC46773)
17:11	MA42410-CCV7	1		
17:16	MA42410-CCB8	1		
17:20	MP1876-SD1	5		
17:24	ZZZZZZ	1		
17:29	ZZZZZZ	1		
17:33	ZZZZZZ	1		
17:37	ZZZZZZ	1		
17:41	ZZZZZZ	1		
17:46	ZZZZZZ	1		
17:50	ZZZZZZ	1		
17:54	ZZZZZZ	1		
17:59	MA42410-CCV8	1		
18:03	MA42410-CCB9	1		
18:07	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:11	ZZZZZZ	1		
18:16	ZZZZZZ	1		
18:20	ZZZZZZ	1		
18:25	ZZZZZZ	1		
18:29	ZZZZZZ	1		
18:33	ZZZZZZ	1		
18:38	ZZZZZZ	1		
18:42	MP1882-B1	1		
18:46	MA42410-CCV9	1		
18:50	MA42410-CCB10	1		
18:55	MP1882-MB1	1		
18:59	ZZZZZZ	1		
19:05	ZZZZZZ	1		
19:13	MA42410-CRID3	1		
19:17	MA42410-CRI3	1		
19:21	ZZZZZZ	1		
19:26	MA42410-ICSA2	1		
19:30	MA42410-ICSAB2	1		
19:35	MA42410-CCV10	1		
19:39	MA42410-CCB11	1		
19:43	MP1882-S1	1		BPQC , No ending ICSA. MN high. Rerun straight and on dilution
19:47	MP1882-S2	1		BPQC , No ending ICSA. MN high. Rerun straight and on dilution
19:51	JC46700-2	1		(sample used for QC only; not part of login JC46773)
19:56	MP1882-SD1	5		BPQC , No ending ICSA. MN high. Rerun straight and on dilution
20:00	ZZZZZZ	1		
20:05	ZZZZZZ	1		
20:09	ZZZZZZ	1		
20:13	ZZZZZZ	1		
20:18	ZZZZZZ	1		
20:22	MA42410-CCV11	1		
20:26	MA42410-CCB12	1		
20:31	ZZZZZZ	1		
20:35	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:39	ZZZZZZ	1		
20:44	ZZZZZZ	1		
20:48	ZZZZZZ	1		
20:52	ZZZZZZ	1		
20:57	ZZZZZZ	1		
21:01	ZZZZZZ	1		
21:06	ZZZZZZ	1		
21:10	MA42410-CCV12	1		
21:14	MA42410-CCB13	1		
21:18	MP1887-MB1	1		
21:23	MP1887-B1	1		
21:27	MP1887-S1	1		
21:31	MP1887-S2	1		
21:35	JC46773-7A	1		
21:39	MP1887-SD1	5		
21:43	JC46773-6A	1		
21:48	JC46773-8A	1		
---------->	Last reportable sample/prep for job JC46773			
21:52	ZZZZZZ	1		
21:56	MA42410-CCV13	1		
22:01	MA42410-CCB14	1		
22:05	ZZZZZZ	1		
22:09	ZZZZZZ	1		
22:14	ZZZZZZ	1		
22:18	ZZZZZZ	1		
22:22	ZZZZZZ	1		
22:26	ZZZZZZ	1		
22:32	ZZZZZZ	1		
22:36	MA42410-CCV14	1		
22:40	MA42410-CCB15	1		
22:44	MA42410-CRI4	1		
22:49	MA42410-CRID4	1		
22:53	MA42410-CCV15	1		
22:57	MA42410-CCB16	1		
---------->	Last reportable CCB for job JC46773			

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
23:01	ZZZZZZ	1		
23:06	ZZZZZZ	1		
23:10	ZZZZZZ	1		
23:14	ZZZZZZ	1		
23:18	ZZZZZZ	1		
23:23	ZZZZZZ	1		
23:27	ZZZZZZ	1		
23:31	ZZZZZZ	5		
23:35	ZZZZZZ	1		
23:40	MA42410-CCV16	1		
23:44	MA42410-CCB17	1		
23:48	ZZZZZZ	1		
23:52	ZZZZZZ	1		
23:57	ZZZZZZ	1		
00:01	ZZZZZZ	1		
00:05	ZZZZZZ	1		
00:10	ZZZZZZ	1		
00:14	ZZZZZZ	1		
00:18	MP1872-B1	1		
00:22	MA42410-CCV17	1		
00:26	MA42410-CCB18	1		
00:30	MP1872-MB1	1		
00:35	MP1872-S1	1		
00:39	MP1872-S2	1		
00:43	JC46355-1	1		(sample used for QC only; not part of login JC46773)
00:47	MP1872-SD1	5		
00:51	ZZZZZZ	1		
00:56	ZZZZZZ	1		
01:00	ZZZZZZ	1		
01:04	ZZZZZZ	1		
01:09	ZZZZZZ	1		
01:13	MA42410-CCV18	1		
01:17	MA42410-CCB19	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
01:21	ZZZZZZ	1		
01:26	ZZZZZZ	1		
01:30	ZZZZZZ	1		
01:34	MP1873-B1	1		
01:38	MP1873-MB1	1		
01:43	MP1873-S1	1		
01:47	MP1873-S2	1		
01:51	JC46696-1	1		(sample used for QC only; not part of login JC46773)
01:55	MP1873-SD1	5		
01:59	MA42410-CCV19	1		
02:03	MA42410-CCB20	1		
02:08	ZZZZZZ	1		
02:12	ZZZZZZ	1		
02:16	ZZZZZZ	1		
02:21	ZZZZZZ	1		
02:25	ZZZZZZ	1		
02:29	ZZZZZZ	1		
02:33	ZZZZZZ	1		
02:38	ZZZZZZ	1		
02:42	MA42410-CCV20	1		
02:46	MA42410-CCB21	1		
02:51	ZZZZZZ	1		
02:55	ZZZZZZ	1		
02:59	ZZZZZZ	1		
03:04	ZZZZZZ	1		
03:08	ZZZZZZ	1		
03:12	ZZZZZZ	1		
03:17	ZZZZZZ	1		
03:21	ZZZZZZ	1		
03:26	ZZZZZZ	1		
03:30	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:51	MA42410-STD1	3406 R	99627 R	17042 R	7887 R
10:55	MA42410-STD2	3080	92733	16743	6545
10:59	ZZZZZZ	3242	94298	16899	6957
11:03	ZZZZZZ	3397	99375	17081	7866
11:08	ZZZZZZ	3346	97994	16991	7617
11:16	MA42410-ICV1	3205	94822	16934	6895
11:28	MA42410-ICB1	3373	99136	16858	7826
11:33	MA42410-ICCV1	3209	94036	16692	6898
11:41	MA42410-CCB1	3353	99003	16923	7792
11:45	MA42410-CRI1	No results reported for the elements associated with this internal standard.			
11:49	MA42410-CRID1	No results reported for the elements associated with this internal standard.			
11:53	MA42410-ICSA1	2955	85529	16242	6055
11:58	MA42410-ICSAB1	2946	85734	16009	6056
12:02	MA42410-HSTD1	3313	97035	16856	7527
12:06	MA42410-HSTD2	2993	87109	16212	6110
12:11	ZZZZZZ	3304	97487	16833	7675
12:15	ZZZZZZ	3388	99339	16933	7981
12:20	ZZZZZZ	3376	99699	16965	7844
12:24	MA42410-CCV1	3204	93488	16629	6885
12:28	MA42410-CCB2	3381	99244	16974	7856
12:32	ZZZZZZ	3371	100100	17090	7827
12:38	MA42410-CRID2	3378	99307	16900	7797
12:43	MA42410-CRI2	3347	97978	16944	7618
12:47	MP1867-MB1	3379	99249	16885	7826
12:51	MP1867-B1	3255	95535	16929	7089
12:55	MP1867-S1	3022	88849	16450	6288
12:59	MP1867-S2	3018	88823	16362	6270
13:04	JC46667-2F	3007	88701	16470	6407
13:08	MP1867-SD1	3270	95642	16718	7233
13:12	MA42410-CCV2	3230	93847	16614	6924
13:16	MA42410-CCB3	3401	99896	16643	7873
13:21	ZZZZZZ	2916	84437	16459	6038
13:25	ZZZZZZ	3296	96768	17059	7248

INTERNAL STANDARD SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:29	ZZZZZZ	3281	96144	17098	7228
13:34	ZZZZZZ	3281	96534	16985	7252
13:38	ZZZZZZ	3254	95560	16958	7201
13:42	ZZZZZZ	3146	93116	16698	6919
13:46	ZZZZZZ	3222	92931	16236	7027
13:51	ZZZZZZ	3214	93733	16240	7107
13:55	ZZZZZZ	2949	87339	15764	6339
13:59	MA42410-CCV3	3229	93163	16360	6906
14:03	MA42410-CCB4	3401	98451	16661	7858
14:08	ZZZZZZ	3208	94067	16560	7036
14:12	ZZZZZZ	3243	95535	16712	7137
14:16	ZZZZZZ	3262	95509	16636	7191
14:21	ZZZZZZ	3203	93793	16576	7014
14:25	ZZZZZZ	3192	93488	16550	6996
14:29	ZZZZZZ	2817	82839	15455	5885
14:34	ZZZZZZ	2872	85500	15654	6093
14:38	ZZZZZZ	2821	84783	15882	5972
14:43	ZZZZZZ	3223	95260	16936	7134
14:47	ZZZZZZ	3354	99823	17049	7789
14:51	MA42410-CCV4	3158	93510	16700	6793
14:55	MA42410-CCB5	3365	99387	17047	7821
15:00	MP1824-MB1	3353	99858	17259	7794
15:04	MP1824-B1	3230	95289	17063	7045
15:08	MP1824-S1	3176	94472	16914	6888
15:12	MP1824-S2	3203	94565	16936	6941
15:16	MC50833-1	3315	98384	17224	7475
15:20	MP1824-SD1	3364	99350	17131	7753
15:25	ZZZZZZ	3177	96032	17128	7035
15:29	ZZZZZZ	2992	88591	16189	6453
15:33	ZZZZZZ	3124	91869	16206	6684
15:38	MA42410-CCV5	3205	92859	16420	6886
15:42	MA42410-CCB6	3381	98827	16597	7838
15:46	ZZZZZZ	3386	99519	16779	7845

INTERNAL STANDARD SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:51	ZZZZZZ	3307	97485	16798	7546
15:55	ZZZZZZ	3264	96074	16805	7263
15:59	ZZZZZZ	3301	96616	16782	7378
16:03	ZZZZZZ	3223	95032	16692	7113
16:08	ZZZZZZ	3247	95303	16713	7246
16:12	ZZZZZZ	3271	96960	16737	7361
16:16	ZZZZZZ	3281	96648	16949	7320
16:21	ZZZZZZ	3272	96274	16808	7308
16:25	MA42410-CCV6	3181	92996	16562	6836
16:29	MA42410-CCB7	3333	98530	16825	7739
16:33	ZZZZZZ	3114	92467	16492	6848
16:38	ZZZZZZ	3316	98295	16863	7685
16:42	ZZZZZZ	3228	94857	16690	7189
16:46	ZZZZZZ	3289	97074	16767	7488
16:51	MP1876-MB1	3337	98673	16817	7766
16:55	MP1876-B1	3228	94590	16595	7052
16:59	MP1876-S1	3187	92856	15720	6772
17:03	MP1876-S2	3190	92749	16472	6766
17:07	JC46741-2	3253	95086	16529	7036
17:11	MA42410-CCV7	3212	93459	16442	6900
17:16	MA42410-CCB8	3357	99344	16881	7819
17:20	MP1876-SD1	3304	97281	16770	7480
17:24	ZZZZZZ	3350	99727	17010	7781
17:29	ZZZZZZ	3317	97596	16946	7420
17:33	ZZZZZZ	3212	95027	16862	6920
17:37	ZZZZZZ	3166	93412	16887	6775
17:41	ZZZZZZ	3179	93616	16810	7008
17:46	ZZZZZZ	3181	93085	16728	6812
17:50	ZZZZZZ	3190	94441	16717	7126
17:54	ZZZZZZ	3179	93975	16716	6951
17:59	MA42410-CCV8	3221	94108	16650	6924
18:03	MA42410-CCB9	3362	99351	16744	7837
18:07	ZZZZZZ	3355	99466	16861	7820

INTERNAL STANDARD SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:11	ZZZZZZ	3339	98984	16909	7495
18:16	ZZZZZZ	3090	91408	16564	6645
18:20	ZZZZZZ	3113	91528	16502	6666
18:25	ZZZZZZ	3131	92061	16507	6735
18:29	ZZZZZZ	3058	89876	16213	6587
18:33	ZZZZZZ	2954	89936	16332	6375
18:38	ZZZZZZ	3295	97935	17395	6862
18:42	MP1882-B1	3244	95005	16581	7090
18:46	MA42410-CCV9	3219	94242	16599	6926
18:50	MA42410-CCB10	3384	100100	16852	7865
18:55	MP1882-MB1	3358	99870	17115	7804
18:59	ZZZZZZ	3132	84199	16531	6790
19:05	ZZZZZZ	3405	100770	17049	7912
19:13	MA42410-CRID3	3344	98821	16639	7745
19:17	MA42410-CRI3	3324	97348	16634	7594
19:21	ZZZZZZ	3364	98825	16677	7768
19:26	MA42410-ICSA2	2959	86335	16027	6097
19:30	MA42410-ICSAB2	2972	82979	16036	6126
19:35	MA42410-CCV10	3235	93631	16487	6949
19:39	MA42410-CCB11	3379	99253	16680	7832
19:43	MP1882-S1	3113	90854	16653	6485
19:47	MP1882-S2	3076	90102	16414	6408
19:51	JC46700-2	3068	90124	16376	6530
19:56	MP1882-SD1	3273	95874	16659	7244
20:00	ZZZZZZ	3177	92386	16562	6767
20:05	ZZZZZZ	3333	96774	16666	7315
20:09	ZZZZZZ	3007	87984	16056	6378
20:13	ZZZZZZ	3320	96499	16847	7229
20:18	ZZZZZZ	2911	84832	16046	6031
20:22	MA42410-CCV11	3251	93700	16317	6965
20:26	MA42410-CCB12	3407	99268	16592	7877
20:31	ZZZZZZ	3045	88192	16086	6409
20:35	ZZZZZZ	3230	94017	16307	7037

INTERNAL STANDARD SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:39	ZZZZZZ	3084	88720	16159	6494
20:44	ZZZZZZ	3195	92827	16510	6848
20:48	ZZZZZZ	3362	97746	16684	7551
20:52	ZZZZZZ	3147	92807	16491	6755
20:57	ZZZZZZ	3156	91562	16387	6668
21:01	ZZZZZZ	3425	100110	16837	7908
21:06	ZZZZZZ	3134	91006	16267	6701
21:10	MA42410-CCV12	3255	94083	16356	6976
21:14	MA42410-CCB13	3377	99376	16636	7799
21:18	MP1887-MB1	3402	101210	17117	7993
21:23	MP1887-B1	3290	96599	17065	7194
21:27	MP1887-S1	3192	93731	16841	6834
21:31	MP1887-S2	3192	93199	16888	6823
21:35	JC46773-7A	3245	95130	16937	7187
21:39	MP1887-SD1	3350	97831	16651	7600
21:43	JC46773-6A	3219	89175	16751	7064
21:48	JC46773-8A	3232	95166	16910	7163
21:52	ZZZZZZ	3099	92599	17154	6686
21:56	MA42410-CCV13	3239	94341	16333	6947
22:01	MA42410-CCB14	3366	98765	16567	7804
22:05	ZZZZZZ	3161	94582	17031	6900
22:09	ZZZZZZ	3265	96425	17316	7191
22:14	ZZZZZZ	3349	98909	17450	7461
22:18	ZZZZZZ	No results reported for the elements associated with this internal standard.			
22:22	ZZZZZZ	3206	94396	16894	6996
22:26	ZZZZZZ	3216	95292	17094	7020
22:32	ZZZZZZ	3235	95341	17021	7099
22:36	MA42410-CCV14	3260	94244	16420	6971
22:40	MA42410-CCB15	3414	99094	16559	7866
22:44	MA42410-CRI4	3432	99308	16797	7769
22:49	MA42410-CRID4	3395	98017	16469	7812
22:53	MA42410-CCV15	3255	93585	16220	6950
22:57	MA42410-CCB16	3440	99986	16592	7944

INTERNAL STANDARD SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
23:01	ZZZZZZ	3468	101600	17115	8136
23:06	ZZZZZZ	3440	100160	16945	8010
23:10	ZZZZZZ	3341	96794	16866	7303
23:14	ZZZZZZ	3319	95724	16658	7229
23:18	ZZZZZZ	3212	93156	16528	6959
23:23	ZZZZZZ	3208	92470	16398	6763
23:27	ZZZZZZ	3248	94037	16820	7030
23:31	ZZZZZZ	3293	96527	16352	7369
23:35	ZZZZZZ	3240	94124	16871	7010
23:40	MA42410-CCV16	3265	93792	16400	6984
23:44	MA42410-CCB17	3430	99686	16441	7911
23:48	ZZZZZZ	2946	83906	16060	5970
23:52	ZZZZZZ	3379	96864	16674	7512
23:57	ZZZZZZ	3377	97279	16840	7524
00:01	ZZZZZZ	3252	92799	16495	6915
00:05	ZZZZZZ	3115	89964	16165	6575
00:10	ZZZZZZ	3199	92774	16668	6780
00:14	ZZZZZZ	3260	93380	16267	6859
00:18	MP1872-B1	3361	96486	16824	7308
00:22	MA42410-CCV17	3274	93042	15884	6985
00:26	MA42410-CCB18	3450	98722	16107	7933
00:30	MP1872-MB1	3475	100620	17011	8129
00:35	MP1872-S1	3314	95966	17007	7184
00:39	MP1872-S2	3328	96482	16958	7211
00:43	JC46355-1	3372	100110	17289	7698
00:47	MP1872-SD1	3423	98906	16378	7868
00:51	ZZZZZZ	3414	99533	17524	7653
00:56	ZZZZZZ	3428	99350	17285	7684
01:00	ZZZZZZ	3439	100480	17490	7839
01:04	ZZZZZZ	3455	101310	17608	7884
01:09	ZZZZZZ	3403	99711	17217	7789
01:13	MA42410-CCV18	3257	93668	16414	6946
01:17	MA42410-CCB19	3425	99934	16724	7900

INTERNAL STANDARD SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
01:21	ZZZZZZ	3396	94875	17050	7582
01:26	ZZZZZZ	3292	98508	17382	7348
01:30	ZZZZZZ	3396	99251	17393	7618
01:34	MP1873-B1	3333	96969	17258	7268
01:38	MP1873-MB1	3473	101330	17325	8108
01:43	MP1873-S1	3280	95660	17131	7060
01:47	MP1873-S2	3392	99146	17728	7259
01:51	JC46696-1	3371	98053	17229	7513
01:55	MP1873-SD1	3443	99819	16890	7851
01:59	MA42410-CCV19	3284	94755	16592	7019
02:03	MA42410-CCB20	3539	102240	17312	8118
02:08	ZZZZZZ	3381	98173	17289	7537
02:12	ZZZZZZ	3506	102110	17784	7847
02:16	ZZZZZZ	3476	101450	17783	7775
02:21	ZZZZZZ	3450	100720	17521	7740
02:25	ZZZZZZ	3439	100290	17411	7824
02:29	ZZZZZZ	3472	101020	17199	7913
02:33	ZZZZZZ	3453	100510	17335	7867
02:38	ZZZZZZ	3435	94501	17114	7668
02:42	MA42410-CCV20	3278	93742	16273	6985
02:46	MA42410-CCB21	3429	99118	16448	7892
02:51	ZZZZZZ	3542	91399	17107	7047
02:55	ZZZZZZ	3524	90859	16593	8061
02:59	ZZZZZZ	3453	99795	16597	7905
03:04	ZZZZZZ	3460	100280	16787	7941
03:08	ZZZZZZ	3494	100500	16701	8007
03:12	ZZZZZZ	3474	100260	16787	7975
03:17	ZZZZZZ	3139	91142	16074	6724
03:21	ZZZZZZ	3151	91258	16213	6745
03:26	ZZZZZZ	3501	101150	16737	8023
03:30	ZZZZZZ	3462	99789	16536	7935

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %

INTERNAL STANDARD SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42410
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4

Istd#4	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

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BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time: / Sample ID:			11:28 ICB1		11:41 CCB1		12:28 CCB2		13:16 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2	anr							
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	0.40	<10	0.90	<10	0.90	<10	0.90	<10
Iron	100	2.7	-3.8	<100	-0.40	<100	-0.40	<100	-0.40	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	0.0	<10	-0.60	<10	0.0	<10	-0.10	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	0.10	<20	0.10	<20	0.10	<20	0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time: / Sample ID:			11:28 ICB1		11:41 CCB1		12:28 CCB2		13:16 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time: / Sample ID:			14:03 CCB4		14:55 CCB5		15:42 CCB6		16:29 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2	anr							
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	0.70	<10	1.0	<10	0.70	<10	0.40	<10
Iron	100	2.7	-3.1	<100	1.7	<100	-0.40	<100	0.20	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	-0.60	<10	0.0	<10	-0.30	<10	-0.10	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	0.0	<20	0.0	<20	-0.10	<20	-0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time: / Sample ID:			14:03 CCB4		14:55 CCB5		15:42 CCB6		16:29 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time:			17:16		18:03		18:50		19:39	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2	anr							
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	0.50	<10	1.0	<10	0.70	<10	0.90	<10
Iron	100	2.7	-0.80	<100	-1.7	<100	-0.20	<100	0.10	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	0.20	<10	-0.30	<10	0.40	<10	-1.0	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	-0.10	<20	-0.20	<20	-0.10	<20	-0.30	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time: / Sample ID:			17:16 CCB8		18:03 CCB9		18:50 CCB10		19:39 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time: / Sample ID:			20:26 CCB12		21:14 CCB13		22:01 CCB14		22:40 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2	anr							
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	0.40	<10	0.20	<10	0.20	<10	1.1	<10
Iron	100	2.7	0.30	<100	-1.0	<100	-0.30	<100	-0.70	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	-0.30	<10	-0.60	<10	0.0	<10	0.0	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	-0.20	<20	0.0	<20	0.0	<20	-0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time: / Sample ID:			20:26 CCB12		21:14 CCB13		22:01 CCB14		22:40 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time:			22:57	
Sample ID:			CCB16	
Metal	RL	IDL	raw	final
Aluminum	200	7.1	anr	
Antimony	6.0	1.9	anr	
Arsenic	3.0	1.5	anr	
Barium	200	.2	anr	
Beryllium	1.0	.1	anr	
Bismuth	20	2.6		
Boron	100	1.2	anr	
Cadmium	3.0	.3	anr	
Calcium	5000	3.3	anr	
Chromium	10	.8	anr	
Cobalt	50	.5	anr	
Copper	10	.9	0.30	<10
Iron	100	2.7	0.90	<100
Lead	3.0	2.2	anr	
Lithium	50	3.1		
Magnesium	5000	17	anr	
Manganese	15	.1	anr	
Molybdenum	20	.4	anr	
Nickel	10	.4	anr	
Phosphorus	50	2.1		
Potassium	10000	47	anr	
Selenium	10	2.5	anr	
Silicon	200	2.2		
Silver	10	1	0.10	<10
Sodium	10000	16	anr	
Strontium	10	.1		
Sulfur	50	4		
Thallium	2.0	1.9	anr	
Tin	10	1.3	anr	
Titanium	10	.6		
Tungsten	50	2		
Vanadium	50	.8	anr	
Zinc	20	.2	0.0	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42410 Units: ug/l

Time:			22:57	
Sample ID:			CCB16	
Metal	RL	IDL	raw	final
Zirconium	10	.5		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		11:33	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	2000	1980	99.0
Iron	40000	40900	102.3
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	249	99.6
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin	anr		
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2010	100.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		11:33	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		11:16			12:24			13:12	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1960	98.0	2000	1990	99.5	2000	1970	98.5
Iron	40000	41600	104.0	40000	41000	102.5	40000	40500	101.3
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	252	100.8	250	251	100.4	250	249	99.6
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	1980	99.0	2000	2020	101.0	2000	2010	100.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		11:16			12:24			13:12	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		13:59			14:51			15:38	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1980	99.0	2000	2000	100.0	2000	1990	99.5
Iron	40000	40800	102.0	40000	40700	101.8	40000	40800	102.0
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	249	99.6	250	251	100.4	250	252	100.8
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2030	101.5	2000	2040	102.0	2000	2040	102.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		13:59			14:51			15:38	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		16:25			17:11			17:59	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2000	100.0	2000	1970	98.5	2000	1980	99.0
Iron	40000	40500	101.3	40000	40300	100.8	40000	40000	100.0
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	251	100.4	250	250	100.0	250	250	100.0
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2020	101.0	2000	2020	101.0	2000	2000	100.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		16:25			17:11			17:59	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		18:46			19:35			20:22	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1970	98.5	2000	1960	98.0	2000	1950	97.5
Iron	40000	40000	100.0	40000	39800	99.5	40000	39800	99.5
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	248	99.2	250	248	99.2	250	248	99.2
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2010	100.5	2000	2010	100.5	2000	2020	101.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		18:46			19:35			20:22	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

8.2.4
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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		21:10			21:56			22:36	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1950	97.5	2000	1960	98.0	2000	1940	97.0
Iron	40000	39800	99.5	40000	39400	98.5	40000	39100	97.8
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	249	99.6	250	247	98.8	250	246	98.4
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2030	101.5	2000	1990	99.5	2000	2010	100.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		21:10			21:56			22:36	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		22:53	
Sample ID:	CCV	CCV15	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	2000	1960	98.0
Iron	40000	39600	99.0
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	249	99.6
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin	anr		
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2030	101.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42410 Units: ug/l

Time:		22:53	
Sample ID:	CCV	CCV15	
Metal	True	Results	% Rec
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42410 Units: ug/l

Time:		12:02			12:06	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	5000	5100	102.0			
Iron				150000	149000	99.3
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	625	618	98.9			
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin	anr					
Titanium						
Tungsten						
Vanadium	anr					
Zinc	5000	5090	101.8			

HIGH STANDARD CHECK SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42410 Units: ug/l

Time:		12:02			12:06	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42410 Units: ug/l

Time:				12:38		12:43		19:13	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0			10.7	107.0		
Iron	100	500				107	107.0		
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0			4.4	88.0		
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	10.5	105.0	21.3	106.5	10.8	108.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42410 Units: ug/l

Time:				12:38		12:43		19:13	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42410 Units: ug/l

Time:				19:17		22:44		22:49	
Sample ID:	CRI	CRIA	CRID	CRI3		CRI4		CRID4	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	11.3	113.0	10.7	107.0		
Iron	100	500		105	105.0	102	102.0		
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	5.1	102.0	4.1	82.0		
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10			anr					
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	21.7	108.5	21.2	106.0	10.7	107.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42410 Units: ug/l

Time:				19:17		22:44		22:49	
Sample ID:	CRI	CRIA	CRID	CRI3		CRI4		CRID4	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42410 Units: ug/l

Time:			11:53		11:58		19:26		19:30	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	510000	102.0	494000	98.8	512000	102.4	497000	99.4
Antimony		1000	2.9		867	86.7	5.3		863	86.3
Arsenic		1000	1.4		1030	103.0	-1.0		1030	103.0
Barium		500	-0.60		509	101.8	-0.70		505	101.0
Beryllium		500	0.30		496	99.2	0.30		487	97.4
Bismuth		500	13.0		547	109.4	11.2		546	109.2
Boron		500	-2.4		470	94.0	-3.3		472	94.4
Cadmium		1000	0.0		1020	102.0	0.30		1010	101.0
Calcium	400000	400000	371000	92.8	366000	91.5	370000	92.5	362000	90.5
Chromium		500	1.6		513	102.6	0.40		539	107.8
Cobalt		500	0.70		485	97.0	0.70		483	96.6
Copper		500	-3.7		520	104.0	-4.6		537	107.4
Iron	200000	200000	198000	99.0	194000	97.0	194000	97.0	187000	93.5
Lead		1000	0.90		958	95.8	-1.5		952	95.2
Lithium		500	12.7		549	109.8	11.6		533	106.6
Magnesium	500000	500000	498000	99.6	494000	98.8	494000	98.8	483000	96.6
Manganese		500	0.60		514	102.8	0.90		537	107.4
Molybdenum		500	-1.3		491	98.2	-1.2		486	97.2
Nickel		1000	-0.20		986	98.6	0.10		979	97.9
Phosphorus		500	13.9		491	98.2	13.2		491	98.2
Potassium			-340		-390		-400		-400	
Selenium		1000	-2.7		1020	102.0	-2.0		1020	102.0
Silicon		500	-8.4		476	95.2	-10		472	94.4
Silver		1000	3.8		1060	106.0	2.7		1100	110.0
Sodium			18.8		28.5		53.3		38.2	
Strontium		500	2.3		557	111.4	2.6		554	110.8
Sulfur		500	-14		464	92.8	-12		473	94.6
Thallium		1000	0.90		978	97.8	-1.8		962	96.2
Tin		500	-3.6		444	88.8	-3.8		446	89.2
Titanium		500	-0.40		508	101.6	-1.2		532	106.4
Tungsten		500	1.6		462	92.4	0.0		459	91.8
Vanadium		500	-0.60		500	100.0	-1.0		521	104.2
Zinc		1000	2.6		958	95.8	2.7		953	95.3

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE071317M1.ICP Date Analyzed: 07/13/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42410 Units: ug/l

Time:			11:53		11:58		19:26		19:30	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium		500	2.4		510	102.0	2.1		531	106.2

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/13/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	7.1	32		
Antimony	6.0	1.9	3		
Arsenic	3.0	1.5	2.6		
Barium	200	.2	1		
Beryllium	1.0	.1	.31		
Bismuth	20	2.6	5.5		
Boron	100	1.2	7.8		
Cadmium	3.0	.3	.69		
Calcium	5000	3.3	48		
Chromium	10	.8	1.6		
Cobalt	50	.5	.7		
Copper	10	.9	6.5	0.40	<10
Iron	100	2.7	20	-0.70	<100
Lead	3.0	2.2	2.6		
Lithium	50	3.1	11		
Magnesium	5000	17	59		
Manganese	15	.1	.78		
Molybdenum	20	.4	5.7		
Nickel	10	.4	5.2		
Phosphorus	50	2.1	14		
Potassium	10000	47	290		
Selenium	10	2.5	7.2		
Silicon	200	2.2	32		
Silver	10	1	3	-1.0	<10
Sodium	10000	16	170		
Strontium	10	.1	.3		
Sulfur	50	4	14		
Thallium	2.0	1.9	1.5		
Tin	50	1.3	7.6		
Titanium	10	.6	1.3		
Tungsten	50	2	7.8		
Vanadium	50	.8	.95		
Zinc	20	.2	2.2	0.20	<20

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/13/17

Metal	RL	IDL	MDL	MB raw	final
Zirconium	10	.5	1.2		

Associated samples MP1887: JC46773-6A, JC46773-7A, JC46773-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/13/17

Metal	JC46773-7A Original MS		Spikelot MPEPA200.7	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium	anr				
Chromium					
Cobalt					
Copper	1.5	1990	2000	99.4	70-130
Iron	269	26100	25000	103.3	70-130
Lead					
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver	0.0	86.9	80	108.6	70-130
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	0.30	1990	2000	99.5	70-130

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/13/17

Metal	JC46773-7A Original MS	Spikelot MPEPA200.7% Rec	QC Limits
Zirconium			

Associated samples MP1887: JC46773-6A, JC46773-7A, JC46773-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/13/17

Metal	JC46773-7A Original	MSD	Spikelot MPEPA200.7	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium	anr					
Chromium						
Cobalt						
Copper	1.5	2020	2000	100.9	1.5	10
Iron	269	26500	25000	104.9	1.5	10
Lead						
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver	0.0	88.5	80	110.6	1.8	10
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	0.30	2040	2000	102.0	2.5	10

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/13/17

Metal	JC46773-7A Original MSD	Spikelot MPEPA200.7% Rec	MSD RPD	QC Limit
Zirconium				

Associated samples MP1887: JC46773-6A, JC46773-7A, JC46773-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/13/17

Metal	BSP Result	Spikelot MPEPA200.7	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium	anr			
Chromium				
Cobalt				
Copper	1980	2000	99.0	85-115
Iron	26200	25000	104.8	85-115
Lead				
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver	86.4	80	108.0	85-115
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	2030	2000	101.5	85-115

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/13/17

Metal	BSP Result	Spikelot MPEPA200.7	% Rec	QC Limits
Zirconium				

Associated samples MP1887: JC46773-6A, JC46773-7A, JC46773-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/13/17

Metal	JC46773-7A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium	anr			
Chromium				
Cobalt				
Copper	1.50	6.90	360.0(a)	0-10
Iron	269	275	2.2	0-10
Lead				
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	0.300	0.00	100.0(a)	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1887
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/13/17

Metal	JC46773-7A Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP1887: JC46773-6A, JC46773-7A, JC46773-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1888 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/13/17

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.058	.082	0.028	<0.20

Associated samples MP1888: JC46773-6A, JC46773-7A, JC46773-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1888 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/13/17

Metal	JC46773-6A Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.0	2.2	2	110.0	9.5	19

Associated samples MP1888: JC46773-6A, JC46773-7A, JC46773-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

8.4.2
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1888 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/13/17

Metal	JC46773-6A Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0	2.0	2	100.0	70-130

Associated samples MP1888: JC46773-6A, JC46773-7A, JC46773-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP1888
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 07/13/17

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	2.2	2	110.0	85-115

Associated samples MP1888: JC46773-6A, JC46773-7A, JC46773-8A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide	GP6532/GN66880	0.010	0.0	mg/l	0.0833	0.0904	108.5	90-110%
HEM Oil and Grease	GP6516/GN66826	5.0	0.0	mg/l	40.16	39.9	99.4	78-114%
Solids, Total Suspended	GN66808	4.0	0.0	mg/l				

Associated Samples:
Batch GP6516: JC46773-6A, JC46773-7A, JC46773-8A
Batch GP6532: JC46773-6A, JC46773-7A, JC46773-8A
Batch GN66808: JC46773-6A, JC46773-7A, JC46773-8A
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Cyanide	GP6532/GN66880	JC46651-1	mg/l	0.0	0.0	0.0	0-32%
HEM Oil and Grease	GP6516/GN66826	JC46713-6	mg/l	0.0	1.6	200.0(a)	0-18%
Solids, Total Suspended	GN66808	JC46766-1	mg/l	5.6	5.6	0.0	0-17%

Associated Samples:
Batch GP6516: JC46773-6A, JC46773-7A, JC46773-8A
Batch GP6532: JC46773-6A, JC46773-7A, JC46773-8A
Batch GN66808: JC46773-6A, JC46773-7A, JC46773-8A
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Cyanide	GP6532/GN66880	JC46651-1	mg/l	0.0	0.0833	0.039	46.8N(a)	90-110%
HEM Oil and Grease	GP6516/GN66826	JC46703-3	mg/l	0.0	40.16	33.9	84.4	78-114%

Associated Samples:
Batch GP6516: JC46773-6A, JC46773-7A, JC46773-8A
Batch GP6532: JC46773-6A, JC46773-7A, JC46773-8A
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: D071417W1.CN Date Analyzed: 07/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Analyst: BM Run ID: GN66880
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:48	GN66880-STD1	1		STDA
09:49	GN66880-STD2	1		STDB
09:50	GN66880-STD3	1		STDC
09:51	GN66880-STD4	1		STDD
09:52	GN66880-STD5	1		STDE
09:53	GN66880-STD6	1		STDF
09:54	GN66880-STD7	1		STDG
09:55	GN66880-ICV1	1		
09:56	GN66880-ICB1	1		
09:57	GN66880-CCV1	1		
09:58	GN66880-CCB1	1		
09:59	GP6531-MB1	1		
10:00	GP6531-B1	1		
10:01	GP6531-S1	1		
10:02	GP6531-D1	1		
10:03	JC46630-1	1		(sample used for QC only; not part of login JC46773)
10:04	ZZZZZZ	1		
10:05	ZZZZZZ	1		
10:06	ZZZZZZ	1		
10:07	ZZZZZZ	1		
10:08	ZZZZZZ	1		
10:09	GN66880-CCV2	1		
10:10	GN66880-CCB2	1		
10:11	ZZZZZZ	1		
10:12	ZZZZZZ	1		
10:14	ZZZZZZ	1		
10:15	GP6460-MB2	1		
10:16	GP6460-B2	1		
10:17	ZZZZZZ	1		
10:18	ZZZZZZ	1		
10:19	ZZZZZZ	1		
10:20	ZZZZZZ	1		
10:21	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: D071417W1.CN Date Analyzed: 07/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Analyst: BM Run ID: GN66880
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:22	GN66880-CCV3	1		
10:23	GN66880-CCB3	1		
10:24	ZZZZZZ	1		
10:25	ZZZZZZ	1		
10:26	GP6532-MB1	1		
10:27	GP6532-B1	1		
10:28	GP6532-S1	1		
10:29	GP6532-S2	1		
10:30	GP6532-D1	1		
10:31	JC46651-1	1		(sample used for QC only; not part of login JC46773)
10:32	JC46651-2	1		(sample used for QC only; not part of login JC46773)
10:33	ZZZZZZ	1		
10:34	GN66880-CCV4	1		
10:35	GN66880-CCB4	1		
10:36	ZZZZZZ	1		
10:37	ZZZZZZ	1		
10:38	ZZZZZZ	1		
10:39	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:41	ZZZZZZ	1		
10:42	ZZZZZZ	1		
10:43	JC46773-6A	1		
10:44	JC46773-7A	1		
10:45	JC46773-8A	1		
10:46	GN66880-CCV5	1		
10:47	GN66880-CCB5	1		
10:48	ZZZZZZ	1		
10:49	ZZZZZZ	1		
10:50	ZZZZZZ	1		
10:51	ZZZZZZ	1		
10:52	ZZZZZZ	1		
10:53	ZZZZZZ	1		
10:54	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: D071417W1.CN Date Analyzed: 07/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Analyst: BM Run ID: GN66880
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:57	GN66880-CCV6	1		
10:58	GN66880-CCB6	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC46773
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: D071417W1.CN Date Analyzed: 07/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Run ID: GN66880 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN66880-ICV1	Cyanide	0.30	0.010	0.0085	.3	100.0	90-110
GN66880-ICB1	Cyanide	0.0085 U	0.010	0.0085			
GN66880-CCV1	Cyanide	0.40	0.010	0.0085	.4	100.0	90-110
GN66880-CCB1	Cyanide	0.0085 U	0.010	0.0085			
GN66880-CCV2	Cyanide	0.40	0.010	0.0085	.4	100.0	90-110
GN66880-CCB2	Cyanide	0.0085 U	0.010	0.0085			
GN66880-CCV3	Cyanide	0.40	0.010	0.0085	.4	100.0	90-110
GN66880-CCB3	Cyanide	0.0085 U	0.010	0.0085			
GN66880-CCV4	Cyanide	0.40	0.010	0.0085	.4	100.0	90-110
GN66880-CCB4	Cyanide	0.0085 U	0.010	0.0085			
GN66880-CCV5	Cyanide	0.40	0.010	0.0085	.4	100.0	90-110
GN66880-CCB5	Cyanide	0.0085 U	0.010	0.0085			
GN66880-CCV6	Cyanide	0.40	0.010	0.0085	.4	100.0	90-110
GN66880-CCB6	Cyanide	0.0085 U	0.010	0.0085			

(!) Outside of QC limits

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e-Hardcopy 2.0
Automated Report

Technical Report for

United Technologies Corporation

SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

190401097 200.0003

SGS Accutest Job Number: JC47859

Sampling Date: 07/26/17

Report to:

Stantec Consulting Corporation
8770 Guion Road Suite B
Indianapolis, IN 46268
susan.hall@stantec.com

ATTN: Susan Hall

Total number of pages in report: 45

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Diane Komar 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Sample Summary

United Technologies Corporation

Job No: JC47859

SECORINI: Zanesville, [redacted] Avenue, Zanesville, OH
Project No: 190401097 200.0003

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC47859-1	07/26/17	14:30	CJC	07/28/17	AQ	Ground Water	I-1

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	United Technologies Corporation	**Job No**	JC47859
Site:	SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH	**Report Date**	8/1/2017 10:25:05 AM

On 07/28/2017, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 3.1 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC47859 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method EPA 624

Matrix: AQ **Batch ID:** VT9272

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC47794-1MS, JC47794-2DUP were used as the QC samples indicated.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC47859
Account: United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH
Collected: 07/26/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC47859-1	**I-1**					
cis-1,2-Dichloroethene		21.9	1.0	0.54	ug/l	EPA 624
1,2-Dichloroethene (total)		21.9	1.0	0.40	ug/l	EPA 624
Trichloroethene		39.2	1.0	0.24	ug/l	EPA 624

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID: I-1
Lab Sample ID: JC47859-1 **Date Sampled:** 07/26/17
Matrix: AQ - Ground Water **Date Received:** 07/28/17
Method: EPA 624 **Percent Solids:** n/a
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225837.D	1	07/29/17 12:26	PR	n/a	n/a	VT9272
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	21.9	1.0	0.54	ug/l	
540-59-0	1,2-Dichloroethene (total)	21.9	1.0	0.40	ug/l	
79-01-6	Trichloroethene	39.2	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	98%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	99%		80-120%

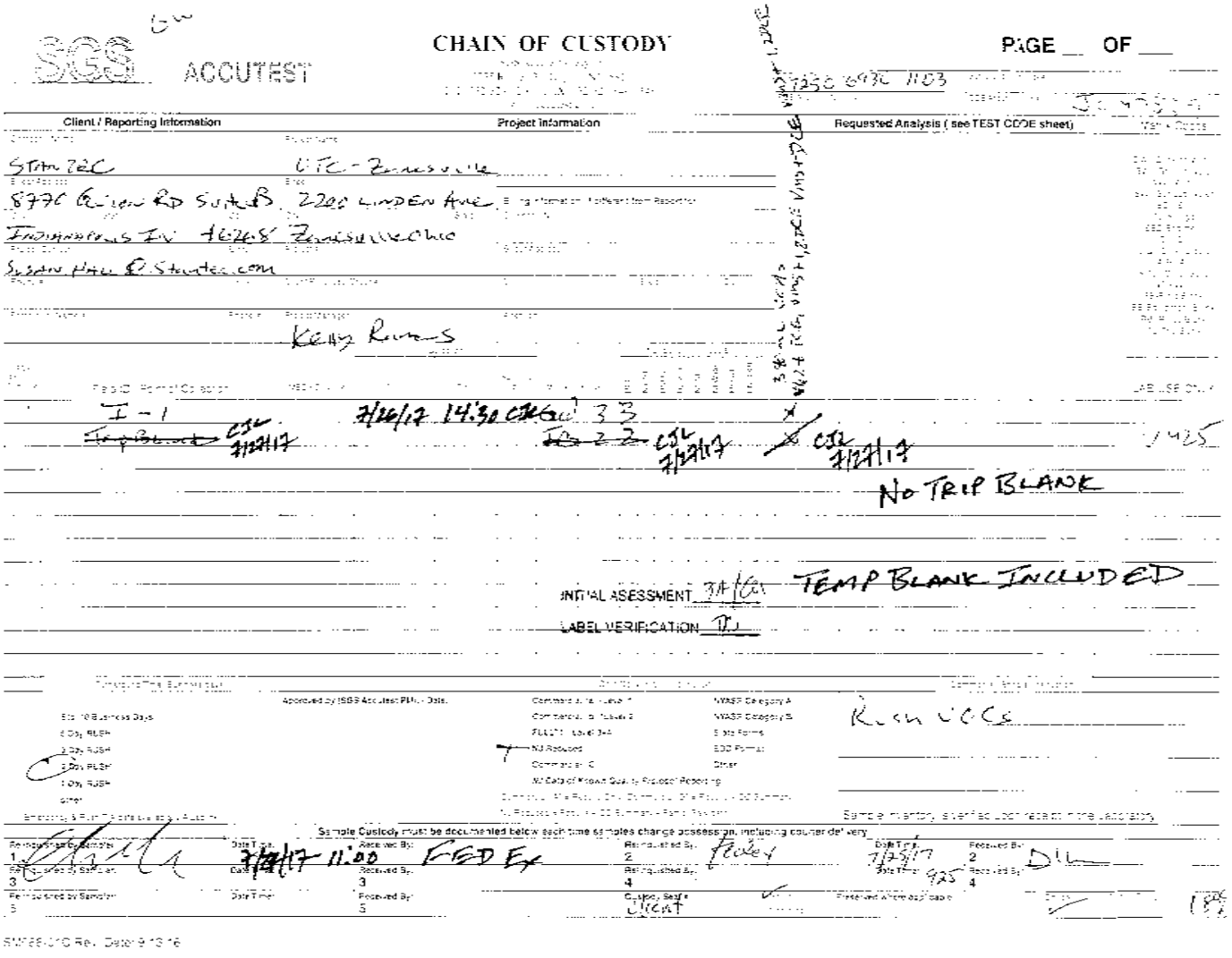
ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody



SGS ACCUTEST

CHAIN OF CUSTODY

PAGE __ OF __

7250 6930 1103

Client / Reporting Information	Project Information	Requested Analysis (see TEST CODE sheet)
Stantec	UTC - Zanesville	
8770 Guion Rd Suite B	2200 Linden Ave	
Indianapolis IN 46268	Zanesville Ohio	
Susan.Hall@Stantec.com		
	Kelly Ramos	

Field ID / Point of Collection: I-1 ~~Trip Blank~~ CJL 7/27/17 — 7/26/17 14:30 CJL — 33 ~~TB 2 2~~ CJL 7/27/17 — CJL 7/27/17

NO TRIP BLANK

INITIAL ASESSMENT 3A/GA TEMP BLANK INCLUDED

LABEL VERIFICATION TJ

Approved by SGS Accutest PM - Date

Commercial Level 1 / Commercial Level 2 / FULL1 Level 3+4 / NJ Reduced / Commercial C / NJ Data of Known Quality Protocol Reporting / NYASP Category A / NYASP Category B / State Forms / EDD Format / Other

Rush VOCs

Sample Custody must be documented below each time samples change possession, including courier delivery

Relinquished by Sampler	Date Time	Received By	Relinquished By	Date Time	Received By
1	7/27/17 11:00	FED Ex	2 Fedex	7/25/17	2 DIL
3		3	4	925	4
5		5	Custody Seal # Client		

SM088-01C Rev. Date 9/13/16

5.1

5

JC47859: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC47859 **Client:** _____ **Project:** _____

Date / Time Received: 7/28/2017 9:25:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.8);

Cooler Temps (Corrected) °C: Cooler 1: (3.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC47859: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC47859

SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH
Project No: 190401097 200.0003

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC47859-1 I-1	Collected: 26-JUL-17 14:30 By: CJC			Received: 28-JUL-17 By: DDH		
JC47859-1	EPA 624	29-JUL-17 12:26	PR			V624TCE,VMS+ 12DCE,VMS+ DCE

SGS Accutest Internal Chain of Custody

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH
Received: 07/28/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC47859-1.2	Secured Storage	Payal Rana	07/29/17 11:28	Retrieve from Storage
JC47859-1.2	Payal Rana	GCMST	07/29/17 11:28	Load on Instrument
JC47859-1.2	GCMST	Gabriela Alvarez	07/31/17 12:29	Unload from Instrument
JC47859-1.2	Gabriela Alvarez	Secured Storage	07/31/17 12:29	Return to Storage

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9272-MB	T225833.D	1	07/29/17	PR	n/a	n/a	VT9272

The QC reported here applies to the following samples: **Method:** EPA 624

JC47859-1

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	0.40	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	98%	76-122%
2037-26-5	Toluene-D8 (SUR)	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	80-120%
1868-53-7	Dibromofluoromethane (S)	98%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.75	16	ug/l	J
	system artifact	3.92	82	ug/l	J
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9272-BS	T225834.D	1	07/29/17	PR	n/a	n/a	VT9272

The QC reported here applies to the following samples: **Method:** EPA 624

JC47859-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	19.1	96	72-115
540-59-0	1,2-Dichloroethene (total)	40	38.8	97	72-117
79-01-6	Trichloroethene	20	20.7	104	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	99%	76-122%
2037-26-5	Toluene-D8 (SUR)	103%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	105%	80-120%
1868-53-7	Dibromofluoromethane (S)	96%	80-120%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47794-1MS	T225844.D	1	07/29/17	PR	n/a	n/a	VT9272
JC47794-1 [a]	T225838.D	1	07/29/17	PR	n/a	n/a	VT9272

The QC reported here applies to the following samples: **Method:** EPA 624

JC47859-1

CAS No.	Compound	JC47794-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
156-59-2	cis-1,2-Dichloroethene	ND		20	20.2	101	50-134
540-59-0	1,2-Dichloroethene (total)	ND		40	41.2	103	48-138
79-01-6	Trichloroethene	ND		20	22.1	111	46-145

CAS No.	Surrogate Recoveries	MS	JC47794-1	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	98%	98%	76-122%
2037-26-5	Toluene-D8 (SUR)	102%	102%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%	102%	80-120%
1868-53-7	Dibromofluoromethane (S)	97%	95%	80-120%

(a) Results reported from the HCl preserved sample. This reported result can only be used for screening purposes for acrolein and acrylonitrile.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47794-2DUP	T225846.D	1	07/29/17	PR	n/a	n/a	VT9272
JC47794-2 [a]	T225839.D	1	07/29/17	PR	n/a	n/a	VT9272

The QC reported here applies to the following samples: **Method:** EPA 624

JC47859-1

CAS No.	Compound	JC47794-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	22
540-59-0	1,2-Dichloroethene (total)	ND		ND		nc	22
79-01-6	Trichloroethene	ND		ND		nc	18

CAS No.	Surrogate Recoveries	DUP	JC47794-2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	97%	98%	76-122%
2037-26-5	Toluene-D8 (SUR)	101%	100%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	101%	80-120%
1868-53-7	Dibromofluoromethane (S)	95%	97%	80-120%

(a) Results reported from the HCl preserved sample. This reported result can only be used for screening purposes for acrolein and acrylonitrile.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample: VT9264-BFB
Lab File ID: T225627.D
Instrument ID: GCMST
Injection Date: 07/18/17
Injection Time: 12:47

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12312	16.8		Pass
75	30.0 - 60.0% of mass 95	33247	45.3		Pass
95	Base peak, 100% relative abundance	73386	100.0		Pass
96	5.0 - 9.0% of mass 95	5073	6.91		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	61066	83.2		Pass
175	5.0 - 9.0% of mass 174	4804	6.55	(7.87) [a]	Pass
176	95.0 - 101.0% of mass 174	59432	81.0	(97.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4054	5.52	(6.82) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9264-IC9264	T225628.D	07/18/17	14:43	01:56	Initial cal 0.5
VT9264-IC9264	T225630.D	07/18/17	15:43	02:56	Initial cal 1
VT9264-IC9264	T225631.D	07/18/17	16:14	03:27	Initial cal 2
VT9264-IC9264	T225632.D	07/18/17	16:44	03:57	Initial cal 5
VT9264-ICC9264	T225633.D	07/18/17	17:14	04:27	Initial cal 20
VT9264-IC9264	T225634.D	07/18/17	17:44	04:57	Initial cal 50
VT9264-IC9264	T225635.D	07/18/17	18:15	05:28	Initial cal 100
VT9264-IC9264	T225636.D	07/18/17	18:45	05:58	Initial cal 200
VT9264-ICV9264	T225639.D	07/18/17	20:16	07:29	Initial cal verification 20
VT9264-ICV9264	T225640.D	07/18/17	20:46	07:59	Initial cal verification 20
VT9264-ICV9264	T225642.D	07/18/17	22:06	09:19	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample:	VT9272-BFB	**Injection Date:**	07/29/17
Lab File ID:	T225830.D	**Injection Time:**	08:43
Instrument ID:	GCMST		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12370	16.0		Pass
75	30.0 - 60.0% of mass 95	34789	45.1		Pass
95	Base peak, 100% relative abundance	77101	100.0		Pass
96	5.0 - 9.0% of mass 95	5494	7.13		Pass
173	Less than 2.0% of mass 174	133	0.17	(0.22) [a]	Pass
174	50.0 - 120.0% of mass 95	61339	79.6		Pass
175	5.0 - 9.0% of mass 174	4769	6.19	(7.77) [a]	Pass
176	95.0 - 101.0% of mass 174	61008	79.1	(99.5) [a]	Pass
177	5.0 - 9.0% of mass 176	4171	5.41	(6.84) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9272-CC9264	T225831.D	07/29/17	09:13	00:30	Continuing cal 20
VT9272-MB	T225833.D	07/29/17	10:16	01:33	Method Blank
VT9272-BS	T225834.D	07/29/17	10:56	02:13	Blank Spike
ZZZZZZ	T225836.D	07/29/17	11:56	03:13	(unrelated sample)
JC47859-1	T225837.D	07/29/17	12:26	03:43	I-1
JC47794-1	T225838.D	07/29/17	12:56	04:13	(used for QC only; not part of job JC47859)
JC47794-2	T225839.D	07/29/17	13:26	04:43	(used for QC only; not part of job JC47859)
ZZZZZZ	T225840.D	07/29/17	13:56	05:13	(unrelated sample)
ZZZZZZ	T225841.D	07/29/17	14:26	05:43	(unrelated sample)
ZZZZZZ	T225842.D	07/29/17	14:56	06:13	(unrelated sample)
ZZZZZZ	T225843.D	07/29/17	15:26	06:43	(unrelated sample)
JC47794-1MS	T225844.D	07/29/17	15:57	07:14	Matrix Spike
ZZZZZZ	T225845.D	07/29/17	16:26	07:43	(unrelated sample)
JC47794-2DUP	T225846.D	07/29/17	16:56	08:13	Duplicate
ZZZZZZ	T225848.D	07/29/17	17:56	09:13	(unrelated sample)
ZZZZZZ	T225849.D	07/29/17	18:26	09:43	(unrelated sample)
ZZZZZZ	T225850.D	07/29/17	18:56	10:13	(unrelated sample)
ZZZZZZ	T225851.D	07/29/17	19:26	10:43	(unrelated sample)
ZZZZZZ	T225852.D	07/29/17	19:56	11:13	(unrelated sample)
ZZZZZZ	T225853.D	07/29/17	20:26	11:43	(unrelated sample)
ZZZZZZ	T225854.D	07/29/17	20:56	12:13	(unrelated sample)
ZZZZZZ	T225855.D	07/29/17	21:27	12:44	(unrelated sample)
ZZZZZZ	T225857.D	07/29/17	22:27	13:44	(unrelated sample)
ZZZZZZ	T225858.D	07/29/17	22:57	14:14	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample:	VT9272-BFB	**Injection Date:**	07/29/17
Lab File ID:	T225830.D	**Injection Time:**	08:43
Instrument ID:	GCMST		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9273-MB	T225860.D	07/29/17	23:57	15:14	Method Blank
VT9273-BS	T225861.D	07/30/17	00:27	15:44	Blank Spike
JC47755-2MS	T225862.D	07/30/17	00:57	16:14	Matrix Spike
JC47755-2MSD	T225863.D	07/30/17	01:27	16:44	Matrix Spike Duplicate
JC47755-2	T225865.D	07/30/17	02:27	17:44	(used for QC only; not part of job JC47859)
JC47755-2	T225866.D	07/30/17	02:57	18:14	(used for QC only; not part of job JC47859)
ZZZZZZ	T225867.D	07/30/17	03:27	18:44	(unrelated sample)
ZZZZZZ	T225868.D	07/30/17	03:57	19:14	(unrelated sample)
ZZZZZZ	T225869.D	07/30/17	04:27	19:44	(unrelated sample)
ZZZZZZ	T225870.D	07/30/17	04:57	20:14	(unrelated sample)
ZZZZZZ	T225871.D	07/30/17	05:27	20:44	(unrelated sample)
ZZZZZZ	T225872.D	07/30/17	05:57	21:14	(unrelated sample)
ZZZZZZ	T225873.D	07/30/17	06:27	21:44	(unrelated sample)
ZZZZZZ	T225874.D	07/30/17	06:57	22:14	(unrelated sample)

Volatile Internal Standard Area Summary

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, [redacted] Avenue, Zanesville, OH

Check Std:	VT9272-CC9264	**Injection Date:**	07/29/17
Lab File ID:	T225831.D	**Injection Time:**	09:13
Instrument ID:	GCMST	**Method:**	EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	123230	7.45	188130	9.48	281262	10.34	202762	16.09	278233	13.55
Upper Limit [a]	246460	7.95	376260	9.98	562524	10.84	405524	16.59	556466	14.05
Lower Limit [b]	61615	6.95	94065	8.98	140631	9.84	101381	15.59	139117	13.05

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VT9272-MB	112822	7.46	183248	9.48	276033	10.34	210237	16.09	277127	13.55
VT9272-BS	115347	7.44	192835	9.48	285899	10.34	194483	16.09	277961	13.55
ZZZZZZ	116354	7.44	185149	9.48	276390	10.34	210716	16.09	278630	13.55
JC47859-1	117263	7.45	182254	9.48	276498	10.34	216036	16.09	276934	13.55
JC47794-1	109140	7.45	206954	9.48	304975	10.34	214985	16.09	296111	13.55
JC47794-2	101200	7.45	206176	9.48	310854	10.34	227812	16.09	311175	13.55
ZZZZZZ	93148	7.45	192676	9.48	288116	10.34	217256	16.09	284490	13.55
ZZZZZZ	94579	7.44	188252	9.48	276353	10.34	214000	16.09	279882	13.55
ZZZZZZ	115966	7.44	186702	9.48	277716	10.34	217561	16.09	277730	13.55
ZZZZZZ	112008	7.45	177510	9.48	272975	10.34	209194	16.09	269963	13.55
JC47794-1MS	113155	7.45	191065	9.48	285197	10.34	205094	16.09	274784	13.55
ZZZZZZ	113730	7.45	182277	9.48	270862	10.34	206389	16.09	267795	13.55
JC47794-2DUP	103666	7.45	193106	9.48	291706	10.34	216792	16.09	288272	13.55
ZZZZZZ	109851	7.44	179917	9.48	265953	10.34	204573	16.09	266315	13.55
ZZZZZZ	112420	7.44	178921	9.48	267709	10.34	208364	16.09	270249	13.55
ZZZZZZ	114480	7.45	176982	9.48	265815	10.34	200649	16.09	262891	13.55
ZZZZZZ	117419	7.46	179779	9.48	268398	10.34	201320	16.09	266254	13.55
ZZZZZZ	108639	7.44	171202	9.48	261924	10.34	191377	16.09	261901	13.55
ZZZZZZ	105635	7.44	172879	9.48	262599	10.34	197485	16.09	262274	13.55
ZZZZZZ	111019	7.44	183989	9.48	276048	10.34	199716	16.09	266080	13.55
ZZZZZZ	110356	7.45	181296	9.48	272856	10.34	198880	16.09	268391	13.55
ZZZZZZ	115421	7.44	178441	9.48	269084	10.34	205220	16.09	268422	13.55
ZZZZZZ	111121	7.45	179396	9.48	267985	10.34	203031	16.09	267623	13.55
VT9273-MB	109947	7.44	176888	9.48	267074	10.34	202653	16.09	262107	13.55
VT9273-BS	106591	7.44	173700	9.47	263051	10.34	195627	16.09	262022	13.54
JC47755-2MS	108130	7.45	178118	9.48	270695	10.34	200029	16.09	268259	13.55
JC47755-2MSD	114047	7.45	187008	9.48	279630	10.34	205337	16.09	280409	13.54
JC47755-2	116110	7.45	183705	9.48	272407	10.34	206727	16.09	277294	13.55
JC47755-2	114163	7.44	177132	9.48	267411	10.34	204538	16.09	266737	13.55
ZZZZZZ	105661	7.44	173157	9.48	263827	10.34	195184	16.09	268209	13.55
ZZZZZZ	110946	7.45	176391	9.49	264630	10.34	203586	16.09	262153	13.55
ZZZZZZ	113888	7.45	175170	9.48	261316	10.34	197538	16.09	260625	13.55
ZZZZZZ	109636	7.44	172062	9.48	259728	10.34	196357	16.09	257054	13.55
ZZZZZZ	110940	7.45	185035	9.48	277303	10.34	191357	16.09	268415	13.55
ZZZZZZ	111270	7.44	186333	9.48	277836	10.34	196450	16.09	271842	13.55

Volatile Internal Standard Area Summary

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Check Std:	VT9272-CC9264	**Injection Date:**	07/29/17
Lab File ID:	T225831.D	**Injection Time:**	09:13
Instrument ID:	GCMST	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
ZZZZZZ	111481	7.45	175791	9.48	265929	10.34	196360	16.09	263717	13.55
ZZZZZZ	109313	7.44	172358	9.48	266615	10.34	193072	16.09	258523	13.55

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: JC47859
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC47859-1	T225837.D	98	100	97	99
JC47794-1MS	T225844.D	98	102	101	97
JC47794-2DUP	T225846.D	97	101	98	95
VT9272-BS	T225834.D	99	103	105	96
VT9272-MB	T225833.D	98	99	98	98

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4 (SUR)	76-122%
S2 = Toluene-D8 (SUR)	80-120%
S3 = 4-Bromofluorobenzene (SUR)	80-120%
S4 = Dibromofluoromethane (S)	80-120%

Initial Calibration Summary

Job Number: JC47859 **Sample:** VT9264-ICC9264
Account: UTC United Technologies Corporation **Lab FileID:** T225633.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Response Factor Report GCMST

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

Calibration Files
5 =T225632.D 20 =T225633.D 50 =T225634.D 100 =T225635.D
200 =T225636.D 2 =T225631.D 1 =T225630.D 0.5 =T225628.D

Compound	5	20	50	100	200	2	1	0.5	Avg	%RSD
1) TERT BUTYL ALCOHOL-d9	----------ISTD----------									
2) TERTIARY BUT	1.417	1.180	1.125	1.123	1.182	1.451			1.246	11.87
3) 1,4-DIOXANE	0.100	0.085	0.090	0.091	0.094	0.093	0.096		0.093	5.10
4) PENTAFLUOROBENZENE	----------ISTD----------									
5) CHLORODIFLUO	1.269	1.315	1.175	1.219	1.215	1.166	1.058		1.202	6.84
6) DICHLORODIFL	1.398	1.365	1.202	1.202	1.107	1.352	1.182		1.258	8.87
7) FREON 143A	1.606	1.535	1.368	1.413	1.299	1.296	1.245	1.257	1.377	9.64
8) FREON 142B	0.919	0.943	0.892	0.947	0.902	0.771	0.829		0.886	7.24
9) CHLOROMETHAN	1.290	1.228	1.130	1.167	1.132	1.250	1.159		1.194	5.24
10) VINYL CHLORI	1.320	1.310	1.214	1.239	1.195	1.275	1.202	1.442	1.275	6.49
11) BROMOMETHANE	0.765	0.741	0.680	0.659	0.543	0.673	0.819		0.697	12.75
12) CHLOROETHANE	0.626	0.603	0.558	0.548	0.515	0.622	0.606		0.583	7.27
13) VINYL BROMID	0.861	0.830	0.754	0.763	0.756	0.872	0.794	0.865	0.812	6.30
14) TRICHLOROFLU	1.162	1.113	0.997	1.020	0.977	1.125	0.963	1.079	1.055	7.12
15) PENTANE	0.872	0.867	0.782	0.764	0.719	0.865	0.833	0.990	0.836	9.97
16) FREON 141B	0.826	0.838	0.807	0.813	0.796	0.676	0.706	0.704	0.771	8.33
17) ETHYL ETHER	0.240	0.245	0.248	0.236	0.234	0.210	0.239		0.236	5.26
18) 1,1-DICHLORO	0.860	0.789	0.737	0.747	0.718	0.798	0.742	0.667	0.757	7.67
19) FREON 113	0.587	0.570	0.534	0.544	0.530	0.515	0.457	0.397	0.517	12.00
20) ACROLEIN	0.114	0.088	0.085	0.080	0.084	0.111			0.094	15.79
21) ACETONE	0.036	0.034	0.034	0.032	0.032	0.037	0.041		0.035	8.76
22) CARBON DISUL	2.003	1.895	1.777	1.812	1.701	1.888	1.614	1.586	1.785	8.11
23) IODOMETHANE	0.973	0.961	0.899	0.917	0.894	0.898	0.713		0.893	9.59
24) ACETONITRILE	0.064	0.060	0.056	0.054	0.054	0.059	0.048		0.056	9.09
25) METHYL ACETA	0.277	0.269	0.274	0.255	0.252				0.265	4.29
26) METHYLENE CH	0.565	0.550	0.508	0.498	0.486	0.536	0.510	0.509	0.520	5.21
27) ACRYLONITRIL	0.157	0.162	0.148	0.143	0.143	0.145	0.150		0.150	4.88
28) METHYL TERT	1.741	1.752	1.670	1.679	1.661	1.659	1.580	1.816	1.695	4.28
29) trans-1,2-DI	0.709	0.682	0.660	0.662	0.646	0.638	0.558	0.494	0.631	11.16
30) HEXANE	0.734	0.691	0.664	0.644	0.625	0.631	0.629	0.603	0.653	6.50
31) 1,1-DICHLORO	0.869	0.856	0.836	0.827	0.811	0.779	0.697	0.747	0.803	7.27
32) VINYL ACETAT	0.086	0.080	0.079	0.076	0.080				0.080	4.53
33) DI-ISOPROPYL	1.979	1.948	1.873	1.865	1.838	1.843	1.892	2.022	1.907	3.54
34) ETHYL TERT B	1.933	1.945	1.897	1.908	1.899	1.664	1.536	1.682	1.808	8.65
35) 2-BUTANONE	0.045	0.042	0.043	0.041	0.042	0.043	0.052	0.046	0.044	7.66
36) cis-1,2-DICH	0.564	0.535	0.510	0.507	0.502	0.551	0.575	0.432	0.522	8.70
37) 2,2-DICHLORO	1.039	0.974	0.911	0.937	0.924	0.941	0.957		0.955	4.45
38) ETHYL ACETAT	0.064	0.054	0.062	0.059	0.054				0.058	8.13
39) BROMOCHLOROM	0.248	0.238	0.237	0.234	0.237	0.235	0.198	0.195	0.228	8.63
40) TETRAHYDROFU	0.242	0.164	0.150	0.131	0.131	0.452			0.212	58.86
This compound does not meet initial calibration criteria										
----- Linear regression ----- Coefficient = 0.9994										
Response Ratio = 0.02401 + 0.12691 *A										
41) CHLOROFORM	0.862	0.821	0.792	0.784	0.779	0.780	0.796	0.949	0.820	7.18

Initial Calibration Summary

Job Number: JC47859 **Sample:** VT9264-ICC9264
Account: UTC United Technologies Corporation **Lab FileID:** T225633.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

42)	t-BUTYL FORM	0.408	0.391	0.378	0.381	0.394	0.329	0.359	0.319	0.370	8.58
43)	1,1,1-TRICHL	0.970	0.948	0.917	0.945	0.944	0.850	0.776	0.716	0.883	10.56
44)	CYCLOHEXANE	1.062	1.017	0.944	0.958	1.039	0.897			0.986	6.41
45)	DIBROMOFLUOR	0.479	0.472	0.475	0.473	0.477	0.501	0.484	0.469	0.479	2.13
46)	1,1-DICHLORO	0.607	0.606	0.612	0.609	0.614	0.500	0.541	0.499	0.574	8.96
47)	CARBON TETRA	0.852	0.824	0.809	0.835	0.839	0.729	0.707		0.799	7.19
48)	ISOPROPYL AC	0.098	0.091	0.091	0.089	0.094	0.074	0.100		0.091	9.12
49)	1,4-DIFLUOROBENZENE	----------	ISTD	----------							
50)	1,2-DICHLORO	0.317	0.313	0.306	0.307	0.305	0.321	0.321	0.321	0.314	2.25
51)	BENZENE	1.285	1.259	1.238	1.223	1.171	1.133	1.114	1.080	1.188	6.26
52)	1,2-DICHLORO	0.354	0.348	0.338	0.332	0.331	0.303	0.315	0.303	0.328	5.88
53)	2,2,4-TRIMET	1.474	1.503	1.425	1.499	1.515	1.233			1.442	7.42
54)	TERT-AMYL ME	1.267	1.242	1.201	1.213	1.194	1.077	1.131	1.215	1.192	5.12
55)	HEPTANE	0.276	0.265	0.252	0.248	0.245	0.231	0.253	0.236	0.251	5.87
56)	TRICHLOROETH	0.314	0.299	0.301	0.297	0.298	0.277	0.248	0.279	0.289	7.09
57)	1,2-DICHLORO	0.360	0.348	0.346	0.341	0.338	0.297	0.297	0.298	0.328	8.02
58)	DIBROMOMETHA	0.185	0.177	0.175	0.172	0.170	0.157	0.165	0.166	0.171	4.99
59)	METHYL METHA	0.064	0.068	0.071	0.067	0.068	0.071			0.068	3.93
60)	METHYLCYCLOH	0.761	0.749	0.714	0.749	0.726	0.634			0.722	6.43
61)	BROMODICHLOR	0.415	0.408	0.402	0.400	0.397	0.373	0.374	0.383	0.394	3.97
62)	2-CHLOROETHY	0.106	0.103	0.104	0.101	0.103	0.090	0.106	0.109	0.103	5.59
63)	EPICHLOROHYD	0.029	0.026	0.025	0.024	0.024	0.028			0.026	7.07
64)	cis-1,3-DICH	0.517	0.512	0.507	0.494	0.493	0.442	0.506	0.486	0.495	4.81
65)	4-METHYL-2-P	0.136	0.123	0.120	0.117	0.115	0.133	0.162		0.129	12.63
66)	I CHLOROBENZENE-D5	----------	ISTD	----------							
67)	TOLUENE-d8	1.242	1.266	1.251	1.279	1.262	1.249	1.237	1.262	1.256	1.11
68)	TOLUENE	0.810	0.780	0.768	0.772	0.757	0.686	0.645	0.632	0.731	9.17
69)	ETHYL METHAC	0.416	0.408	0.395	0.384	0.385	0.406	0.541		0.419	13.17
70)	trans-1,3-DI	0.470	0.455	0.448	0.432	0.428	0.445	0.524	0.523	0.466	8.13
71)	1,1,2-TRICHL	0.248	0.230	0.223	0.214	0.215	0.217	0.294	0.240	0.235	11.28
72)	TETRACHLOROE	0.277	0.267	0.263	0.269	0.271	0.228	0.239	0.245	0.257	6.88
73)	2-HEXANONE	0.134	0.111	0.110	0.101	0.101	0.131	0.162	0.147	0.125	18.14
74)	1,3-DICHLORO	0.473	0.455	0.433	0.425	0.418	0.398	0.486		0.441	7.12
75)	BUTYL ACETAT	0.238	0.212	0.200	0.188	0.193	0.243			0.212	10.93
76)	3,3-DIMETHYL	0.052	0.045	0.043	0.043	0.044	0.055	0.074		0.051	21.89
77)	DIBROMOCHLOR	0.354	0.329	0.313	0.310	0.312	0.311	0.400	0.348	0.335	9.40
78)	ETHYLENE DIB	0.279	0.271	0.258	0.256	0.258	0.244	0.320	0.250	0.267	9.05
79)	CHLOROBENZEN	0.984	0.921	0.895	0.891	0.880	0.868	0.937	0.849	0.903	4.77
80)	1,1,1,2-TETR	0.462	0.429	0.416	0.425	0.441	0.409	0.486	0.428	0.437	5.88
81)	ETHYLBENZENE	1.723	1.646	1.592	1.571	1.484	1.508	1.586	1.534	1.580	4.88
82)	m,p-XYLENE	0.664	0.631	0.614	0.606	0.593	0.549	0.592	0.522	0.596	7.50
83)	o-XYLENE	1.632	1.509	1.454	1.459	1.386	1.415	1.495	1.537	1.486	5.16
84)	STYRENE	1.134	1.082	1.053	1.036	1.031	1.020	1.155	1.003	1.064	5.16
85)	n-AMYL ACETA	0.258	0.265	0.257	0.245	0.249	0.264	0.280	0.283	0.263	5.13
86)	BROMOFORM	0.260	0.236	0.228	0.223	0.235	0.257	0.301	0.264	0.250	10.23
87)	CUMENE	2.080	2.018	1.931	1.928	1.782	1.782	1.873	1.727	1.890	6.49
88)	cis-1,4-DICH	0.123	0.115	0.113	0.110	0.117	0.126	0.173		0.125	17.33
89)	1,4-DICHLOROBENZENE-D	----------	ISTD	----------							
90)	4-BROMOFLUOR	0.619	0.620	0.636	0.633	0.612	0.622	0.623	0.638	0.625	1.49
91)	1,1,2,2-TETR	0.669	0.604	0.590	0.555	0.521	0.753	0.900		0.656	20.15
92)	trans-1,4-DI	0.155	0.130	0.137	0.122	0.118				0.133	11.04
93)	1,2,3-TRICHL	0.177	0.146	0.145	0.133	0.128	0.180	0.231		0.163	22.14
94)	N-PROPYLBENZ	3.398	3.213	3.204	3.029	2.522	2.914	3.318	2.913	3.064	9.21
95)	BROMOBENZENE	0.704	0.634	0.641	0.615	0.597	0.637	0.831	0.781	0.680	12.47
96)	2-CHLOROTOLU	0.689	0.665	0.674	0.661	0.634	0.599	0.703	0.697	0.665	5.25
97)	4-CHLOROTOLU	1.995	1.867	1.855	1.779	1.673	1.833	2.162	2.025	1.899	8.14
98)	1,3,5-TRIMET	2.701	2.638	2.688	2.601	2.269	2.279	2.551	2.337	2.508	7.32

Initial Calibration Summary

Job Number: JC47859 **Sample:** VT9264-ICC9264
Account: UTC United Technologies Corporation **Lab FileID:** T225633.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

99)	TERT-BUTYLBE	2.155	2.160	2.280	2.258	2.069	1.802	2.003	1.828	2.069	8.75
100)	1,2,4-TRIMET	2.991	2.801	2.789	2.726	2.364	2.585	2.970	2.532	2.720	7.96
101)	SEC-BUTYLBEN	3.747	3.678	3.735	3.550	2.887	3.046	3.471	2.961	3.384	10.69
102)	P-ISOPROPYLT	3.223	3.154	3.220	3.087	2.620	2.755	3.003	2.676	2.967	8.35
103)	1,3-DICHLORO	1.617	1.506	1.467	1.435	1.376	1.497	1.768	1.722	1.549	9.03
104)	1,4-DICHLORO	1.702	1.509	1.498	1.453	1.394	1.541	1.757	1.752	1.576	8.97
105)	N-BUTYLBENZE	0.911	0.866	0.850	0.839	0.817	0.774	0.867	0.815	0.842	4.93
106)	1,2-DICHLORO	1.799	1.650	1.619	1.548	1.472	1.670	2.010	1.815	1.698	10.06
107)	HEXACHLOROET	0.357	0.361	0.392	0.408	0.417	0.301	0.347	0.321	0.363	11.22
108)	1,2-DIBROMO-	0.195	0.173	0.173	0.168	0.161	0.230			0.183	13.90
109)	HEXACHLOROBU	0.936	0.882	0.897	0.865	0.834	0.744	0.904	0.839	0.863	6.82
110)	1,3,5-TRICHL	2.105	1.970	2.003	1.893	1.708	1.754	2.019	1.869	1.915	7.08
111)	NITROBENZENE	0.067	0.053	0.056	0.054	0.056	0.105			0.065	31.35
112)	1,2,4-TRICHL	1.578	1.526	1.580	1.487	1.348	1.324	1.581	1.463	1.486	6.90
113)	1,2,3-TRICHL	1.126	1.107	1.169	1.109	1.017	0.974	1.165	1.164	1.104	6.53
114)	NAPHTHALENE	2.590	2.403	2.537	2.380	2.052	2.299	2.813	2.720	2.474	9.86
115)	INDANE	2.592	2.827	2.782	2.655	2.301	2.555	2.482	2.823	2.627	7.00
116)	ETHYLENIMINE									0.000	-1.00
117)	BIS(CHLOROME									0.000	-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

MT9264.M Thu Jul 20 14:58:42 2017 MSDT

6.8.1

6

Initial Calibration Verification

Job Number: JC47859 **Sample:** VT9264-ICV9264
Account: UTC United Technologies Corporation **Lab FileID:** T225639.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T225639.D Vial: 14
Acq On : 18 Jul 2017 8:16 pm Operator: payalr
Sample : icv9264-20 Inst : GCMST
Misc : MS18159,VT9264,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jul 20 14:57:09 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	102	0.00	7.45
2	M	TERTIARY BUTYL ALCOHOL	1.246	1.175	5.7	102	0.00	7.55
3	M	1,4-DIOXANE	0.093	0.090	3.2	108	0.00	11.03
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	106	0.00	9.48
5		CHLORODIFLUOROMETHANE	1.202	1.018	15.3	82	0.00	4.39
6	M	DICHLORODIFLUOROMETHANE	1.258	1.062	15.6	83	-0.01	4.38
7	M	FREON 143A	1.377	0.712	48.3#	49#	0.00	4.04
8	M	FREON 142B	0.886	0.896	-1.1	101	0.00	4.64
9	M	CHLOROMETHANE	1.194	1.001	16.2	87	0.00	4.71
10	M	VINYL CHLORIDE	1.275	1.084	15.0	88	0.00	4.96
11	M	BROMOMETHANE	0.697	0.630	9.6	90	0.00	5.58
12	M	CHLOROETHANE	0.583	0.540	7.4	95	0.00	5.74
13		VINYL BROMIDE	0.812	0.704	13.3	90	0.00	6.06
14	M	TRICHLOROFLUOROMETHANE	1.055	0.871	17.4	83	-0.01	6.16
15	M	PENTANE	0.836	0.964	-15.3	118	0.00	6.25
16	M	FREON 141B	0.771	0.735	4.7	93	0.00	6.54
17		ETHYL ETHER	0.236	0.237	-0.4	103	0.00	6.52
18	M	1,1-DICHLOROETHYLENE	0.757	0.728	3.8	98	0.00	6.91
19	M	FREON 113	0.517	0.599	-15.9	112	0.00	6.90
20		ACROLEIN	0.094	0.077	18.1	93	0.00	6.74
21	M	ACETONE	0.035	0.031	11.4	95	0.00	6.94
22	M	CARBON DISULFIDE	1.785	2.084	-16.8	117	0.00	7.29
23	M	IODOMETHANE	0.893	0.868	2.8	96	0.00	7.17
24		ACETONITRILE	0.056	0.048	14.3	85	0.00	7.31
25		METHYL ACETATE	0.265	0.244	7.9	96	0.00	7.33
26	M	METHYLENE CHLORIDE	0.520	0.506	2.7	98	0.00	7.53
27	M	ACRYLONITRILE	0.150	0.165	-10.0	109	0.00	7.80
28	M	METHYL TERT BUTYL ETHER	1.695	1.679	0.9	102	0.00	7.84
29	M	trans-1,2-DICHLOROETHYLEN	0.631	0.641	-1.6	100	0.00	7.87
30	M	HEXANE	0.653	0.491	24.8	76	0.00	8.16
31	M	1,1-DICHLOROETHANE	0.803	0.820	-2.1	102	0.00	8.37
32	M	VINYL ACETATE	0.080	0.075	6.3	99	0.00	8.34
33	M	DI-ISOPROPYL ETHER	1.907	1.820	4.6	99	0.00	8.36
34	M	ETHYL TERT BUTYL ETHER	1.808	1.807	0.1	99	0.00	8.77
35	M	2-BUTANONE	0.044	0.038	13.6	97	0.00	8.99
36	M	cis-1,2-DICHLOROETHYLENE	0.522	0.505	3.3	101	0.00	9.03
37	M	2,2-DICHLOROPROPANE	0.955	0.877	8.2	96	0.00	9.06
38	M	ETHYL ACETATE	0.058	0.055	5.2	108	0.00	8.99
39		BROMOCHLOROMETHANE	0.228	0.230	-0.9	103	0.00	9.31

---------- True Calc. % Drift ----------

Initial Calibration Verification

Job Number: JC47859 **Sample:** VT9264-ICV9264
Account: UTC United Technologies Corporation **Lab FileID:** T225639.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

40	M	TETRAHYDROFURAN	20.000	18.869	5.7	101	0.00	9.35
			AvgRF	CCRF	% Dev			
41	M	CHLOROFORM	0.820	0.785	4.3	102	0.00	9.35
42		t-BUTYL FORMATE	0.370	0.366	1.1	100	0.00	9.41
43	M	1,1,1-TRICHLOROETHANE	0.883	0.897	-1.6	101	0.00	9.62
44		CYCLOHEXANE	0.986	0.668	32.3	70	0.00	9.71
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.470	1.9	106	0.00	9.53
46		1,1-DICHLOROPROPENE	0.574	0.585	-1.9	103	0.00	9.78
47		CARBON TETRACHLORIDE	0.799	0.784	1.9	101	0.00	9.82
48		ISOPROPYL ACETATE	0.091	0.088	3.3	103	0.00	9.91
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	105	0.00	10.35
50	S	1,2-DICHLOROETHANE-d4	0.314	0.325	-3.5	109	0.00	9.93
51	M	BENZENE	1.188	1.236	-4.0	103	0.00	10.03
52	M	1,2-DICHLOROETHANE	0.328	0.339	-3.4	102	0.00	10.02
53		2,2,4-TRIMETHYLPENTANE	1.442	1.297	10.1	90	0.00	10.04
54	M	TERT-AMYL METHYL ETHER	1.192	1.179	1.1	99	0.00	10.05
55	M	HEPTANE	0.251	0.252	-0.4	100	0.00	10.18
56	M	TRICHLOROETHYLENE	0.289	0.296	-2.4	104	0.00	10.68
57	M	1,2-DICHLOROPROPANE	0.328	0.346	-5.5	104	0.00	10.94
58	M	DIBROMOMETHANE	0.171	0.176	-2.9	104	0.00	11.07
59		METHYL METHACRYLATE	0.068	0.068	0.0	105	0.00	10.91
60		METHYLCYCLOHEXANE	0.722	0.655	9.3	92	0.00	10.93
61	M	BROMODICHLOROMETHANE	0.394	0.400	-1.5	103	0.00	11.19
62	M	2-CHLOROETHYL VINYL ETHER	0.103	0.112	-8.7	113	0.00	11.42
63	M	EPICHLOROHYDRIN	0.026	0.024	7.7	97	0.00	11.54
64	M	cis-1,3-DICHLOROPROPENE	0.495	0.501	-1.2	103	0.00	11.65
65	M	4-METHYL-2-PENTANONE	0.129	0.106	17.8	91	0.00	11.75
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	105	0.00	13.55
67	S	TOLUENE-d8	1.256	1.270	-1.1	106	0.00	11.97
68		TOLUENE	0.731	0.785	-7.4	106	0.00	12.04
69		ETHYL METHACRYLATE	0.419	0.376	10.3	97	0.00	12.21
70		trans-1,3-DICHLOROPROPENE	0.466	0.445	4.5	103	0.00	12.21
71		1,1,2-TRICHLOROETHANE	0.235	0.219	6.8	101	0.00	12.44
72	M	TETRACHLOROETHYLENE	0.257	0.270	-5.1	106	0.00	12.65
73	M	2-HEXANONE	0.125	0.097	22.4	92	0.00	12.63
74		1,3-DICHLOROPROPANE	0.441	0.442	-0.2	102	0.00	12.64
75	M	BUTYL ACETATE	0.212	0.199	6.1	99	0.00	12.69
76		3,3-DIMETHYL-1-BUTANOL	0.051	0.044	13.7	103	0.00	12.78
77	M	DIBROMOCHLOROMETHANE	0.335	0.314	6.3	101	0.00	12.91
78	M	ETHYLENE DIBROMIDE	0.267	0.269	-0.7	105	0.00	13.09
79	M	CHLOROBENZENE	0.903	0.911	-0.9	104	0.00	13.58
80	M	1,1,1,2-TETRACHLOROETHANE	0.437	0.429	1.8	105	0.00	13.65
81	M	ETHYLBENZENE	1.580	1.584	-0.3	101	0.00	13.65
82	M	m,p-XYLENE	0.596	0.615	-3.2	103	0.00	13.76
83	M	o-XYLENE	1.486	1.456	2.0	102	0.00	14.22
84	M	STYRENE	1.064	1.045	1.8	102	0.00	14.22
85		n-AMYL ACETATE	0.263	0.266	-1.1	106	0.00	14.24
86	M	BROMOFORM	0.250	0.230	8.0	103	0.00	14.50
87	M	CUMENE	1.890	1.971	-4.3	103	0.00	14.60
88		cis-1,4-DICHLORO-2-BUTENE	0.125	0.112	10.4	103	0.00	14.64
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	107	0.00	16.09
90	S	4-BROMOFLUOROBENZENE	0.625	0.627	-0.3	109	0.00	14.81
91		1,1,2,2-TETRACHLOROETHANE	0.656	0.574	12.5	102	0.00	14.90
92		trans-1,4-DICHLORO-2-BUTE	0.133	0.128	3.8	106	0.00	14.95
93		1,2,3-TRICHLOROPROPANE	0.163	0.137	16.0	100	0.00	14.99
94		N-PROPYLBENZENE	3.064	3.101	-1.2	104	0.00	15.05

Initial Calibration Verification

Job Number: JC47859 **Sample:** VT9264-ICV9264
Account: UTC United Technologies Corporation **Lab FileID:** T225639.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

95		BROMOBENZENE	0.680	0.618	9.1	105	0.00	15.03
96		2-CHLOROTOLUENE	0.665	0.646	2.9	104	0.00	15.20
97		4-CHLOROTOLUENE	1.899	1.809	4.7	104	0.00	15.31
98	M	1,3,5-TRIMETHYLBENZENE	2.508	2.556	-1.9	104	0.00	15.21
99		TERT-BUTYLBENZENE	2.069	2.086	-0.8	104	0.00	15.60
100	M	1,2,4-TRIMETHYLBENZENE	2.720	2.719	0.0	104	0.00	15.64
101		SEC-BUTYLBENZENE	3.384	3.496	-3.3	102	0.00	15.84
102		P-ISOPROPYLTOLUENE	2.967	3.039	-2.4	103	0.00	15.97
103	M	1,3-DICHLOROBENZENE	1.549	1.495	3.5	107	0.00	16.04
104	M	1,4-DICHLOROBENZENE	1.576	1.498	4.9	107	0.00	16.12
105		N-BUTYLBENZENE	0.842	0.835	0.8	103	0.00	16.42
106	M	1,2-DICHLOROBENZENE	1.698	1.631	3.9	106	0.00	16.56
107		HEXACHLOROETHANE	0.363	0.356	1.9	106	0.00	16.86
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.183	0.174	4.9	108	0.00	17.39
109		HEXACHLOROBUTADIENE	0.863	0.875	-1.4	106	0.00	18.44
110		1,3,5-TRICHLOROBENZENE	1.915	1.864	2.7	102	0.00	17.60
111		NITROBENZENE	0.065	0.052	20.0	105	0.00	17.62
112	M	1,2,4-TRICHLOROBENZENE	1.486	1.496	-0.7	105	0.00	18.30
113		1,2,3-TRICHLOROBENZENE	1.104	1.074	2.7	104	0.00	18.89
114	M	NAPHTHALENE	2.474	2.331	5.8	104	0.00	18.61
115	M	INDANE	2.627	2.434	7.3	92	0.00	16.40
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T225633.D MT9264.M Thu Jul 20 14:58:26 2017 MSDT

Initial Calibration Verification

Job Number: JC47859 **Sample:** VT9264-ICV9264
Account: UTC United Technologies Corporation **Lab FileID:** T225640.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T225640.D Vial: 15
Acq On : 18 Jul 2017 8:46 pm Operator: payalr
Sample : icv9264-20 Inst : GCMST
Misc : MS18159,VT9264,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Tue Jul 18 20:41:12 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	97	0.00	7.45
2	M	TERTIARY BUTYL ALCOHOL		----------NA----------				
3	M	1,4-DIOXANE		----------NA----------				
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	104	0.00	9.48
5		CHLORODIFLUOROMETHANE		----------NA----------				
6	M	DICHLORODIFLUOROMETHANE		----------NA----------				
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE		----------NA----------				
10	M	VINYL CHLORIDE		----------NA----------				
11	M	BROMOMETHANE		----------NA----------				
12	M	CHLOROETHANE		----------NA----------				
13		VINYL BROMIDE		----------NA----------				
14	M	TRICHLOROFLUOROMETHANE		----------NA----------				
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER		----------NA----------				
18	M	1,1-DICHLOROETHYLENE		----------NA----------				
19	M	FREON 113		----------NA----------				
20		ACROLEIN		----------NA----------				
21	M	ACETONE		----------NA----------				
22	M	CARBON DISULFIDE		----------NA----------				
23	M	IODOMETHANE		----------NA----------				
24		ACETONITRILE	0.056	0.052	7.1	90	0.00	7.31
25		METHYL ACETATE		----------NA----------				
26	M	METHYLENE CHLORIDE		----------NA----------				
27	M	ACRYLONITRILE		----------NA----------				
28	M	METHYL TERT BUTYL ETHER		----------NA----------				
29	M	trans-1,2-DICHLOROETHYLEN		----------NA----------				
30	M	HEXANE		----------NA----------				
31	M	1,1-DICHLOROETHANE		----------NA----------				
32	M	VINYL ACETATE		----------NA----------				
33	M	DI-ISOPROPYL ETHER		----------NA----------				
34	M	ETHYL TERT BUTYL ETHER		----------NA----------				
35	M	2-BUTANONE		----------NA----------				
36	M	cis-1,2-DICHLOROETHYLENE		----------NA----------				
37	M	2,2-DICHLOROPROPANE		----------NA----------				
38	M	ETHYL ACETATE		----------NA----------				
39		BROMOCHLOROMETHANE		----------NA----------				

---------- True Calc. % Drift ----------

Initial Calibration Verification

Job Number: JC47859 **Sample:** VT9264-ICV9264
Account: UTC United Technologies Corporation **Lab FileID:** T225640.D
Project: SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH

40	M	TETRAHYDROFURAN		----------NA----------					
		----------	AvgRF	CCRF	% Dev	----------			
41	M	CHLOROFORM		----------NA----------					
42		t-BUTYL FORMATE		----------NA----------					
43	M	1,1,1-TRICHLOROETHANE		----------NA----------					
44		CYCLOHEXANE		----------NA----------					
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.456	4.8	101	0.00	9.53	
46		1,1-DICHLOROPROPENE		----------NA----------					
47		CARBON TETRACHLORIDE		----------NA----------					
48		ISOPROPYL ACETATE		----------NA----------					
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	102	0.00	10.34	
50	S	1,2-DICHLOROETHANE-d4	0.314	0.307	2.2	100	0.00	9.93	
51	M	BENZENE		----------NA----------					
52	M	1,2-DICHLOROETHANE		----------NA----------					
53		2,2,4-TRIMETHYLPENTANE		----------NA----------					
54	M	TERT-AMYL METHYL ETHER		----------NA----------					
55	M	HEPTANE		----------NA----------					
56	M	TRICHLOROETHYLENE		----------NA----------					
57	M	1,2-DICHLOROPROPANE		----------NA----------					
58	M	DIBROMOMETHANE		----------NA----------					
59		METHYL METHACRYLATE		----------NA----------					
60		METHYLCYCLOHEXANE		----------NA----------					
61	M	BROMODICHLOROMETHANE		----------NA----------					
62	M	2-CHLOROETHYL VINYL ETHER		----------NA----------					
63	M	EPICHLOROHYDRIN		----------NA----------					
64	M	cis-1,3-DICHLOROPROPENE		----------NA----------					
65	M	4-METHYL-2-PENTANONE		----------NA----------					
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	104	0.00	13.55	
67	S	TOLUENE-d8	1.256	1.249	0.6	103	0.00	11.97	
68		TOLUENE		----------NA----------					
69		ETHYL METHACRYLATE		----------NA----------					
70		trans-1,3-DICHLOROPROPENE		----------NA----------					
71		1,1,2-TRICHLOROETHANE		----------NA----------					
72	M	TETRACHLOROETHYLENE		----------NA----------					
73	M	2-HEXANONE		----------NA----------					
74		1,3-DICHLOROPROPANE		----------NA----------					
75	M	BUTYL ACETATE		----------NA----------					
76		3,3-DIMETHYL-1-BUTANOL		----------NA----------					
77	M	DIBROMOCHLOROMETHANE		----------NA----------					
78	M	ETHYLENE DIBROMIDE		----------NA----------					
79	M	CHLOROBENZENE		----------NA----------					
80	M	1,1,1,2-TETRACHLOROETHANE		----------NA----------					
81	M	ETHYLBENZENE		----------NA----------					
82	M	m,p-XYLENE		----------NA----------					
83	M	o-XYLENE		----------NA----------					
84	M	STYRENE		----------NA----------					
85		n-AMYL ACETATE		----------NA----------					
86	M	BROMOFORM		----------NA----------					
87	M	CUMENE		----------NA----------					
88		cis-1,4-DICHLORO-2-BUTENE		----------NA----------					
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	112	0.00	16.10	
90	S	4-BROMOFLUOROBENZENE	0.625	0.608	2.7	109	0.00	14.81	
91		1,1,2,2-TETRACHLOROETHANE		----------NA----------					
92		trans-1,4-DICHLORO-2-BUTE		----------NA----------					
93		1,2,3-TRICHLOROPROPANE		----------NA----------					
94		N-PROPYLBENZENE		----------NA----------					

6.8.3

6

Initial Calibration Verification

Job Number: JC47859 **Sample:** VT9264-ICV9264
Account: UTC United Technologies Corporation **Lab FileID:** T225640.D
Project: SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH

95		BROMOBENZENE	----------NA----------	
96		2-CHLOROTOLUENE	----------NA----------	
97		4-CHLOROTOLUENE	----------NA----------	
98	M	1,3,5-TRIMETHYLBENZENE	----------NA----------	
99		TERT-BUTYLBENZENE	----------NA----------	
100	M	1,2,4-TRIMETHYLBENZENE	----------NA----------	
101		SEC-BUTYLBENZENE	----------NA----------	
102		P-ISOPROPYLTOLUENE	----------NA----------	
103	M	1,3-DICHLOROBENZENE	----------NA----------	
104	M	1,4-DICHLOROBENZENE	----------NA----------	
105		N-BUTYLBENZENE	----------NA----------	
106	M	1,2-DICHLOROBENZENE	----------NA----------	
107		HEXACHLOROETHANE	----------NA----------	
108	M	1,2-DIBROMO-3-CHLOROPROPA	----------NA----------	
109		HEXACHLOROBUTADIENE	----------NA----------	
110		1,3,5-TRICHLOROBENZENE	----------NA----------	
111		NITROBENZENE	----------NA----------	
112	M	1,2,4-TRICHLOROBENZENE	----------NA----------	
113		1,2,3-TRICHLOROBENZENE	----------NA----------	
114	M	NAPHTHALENE	----------NA----------	
115	M	INDANE	----------NA----------	
116		ETHYLENIMINE	----------NA----------	
117		BIS(CHLOROMETHYL)ETHER	----------NA----------	

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T225633.D MT9264.M Tue Jul 18 23:19:27 2017 MSDT

Initial Calibration Verification

Job Number: JC47859 **Sample:** VT9264-ICV9264
Account: UTC United Technologies Corporation **Lab FileID:** T225642.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T225642.D Vial: 17
Acq On : 18 Jul 2017 10:06 pm Operator: payalr
Sample : icv9264-20 Inst : GCMST
Misc : MS18159,VT9264,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Tue Jul 18 20:41:12 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	95	0.00	7.44
2	M	TERTIARY BUTYL ALCOHOL		----------NA----------				
3	M	1,4-DIOXANE		----------NA----------				
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	99	0.00	9.49
5		CHLORODIFLUOROMETHANE		----------NA----------				
6	M	DICHLORODIFLUOROMETHANE		----------NA----------				
7	M	FREON 143A	1.377	1.153	16.3	74	-0.01	4.04
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE		----------NA----------				
10	M	VINYL CHLORIDE		----------NA----------				
11	M	BROMOMETHANE		----------NA----------				
12	M	CHLOROETHANE		----------NA----------				
13		VINYL BROMIDE		----------NA----------				
14	M	TRICHLOROFLUOROMETHANE		----------NA----------				
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER		----------NA----------				
18	M	1,1-DICHLOROETHYLENE		----------NA----------				
19	M	FREON 113		----------NA----------				
20		ACROLEIN		----------NA----------				
21	M	ACETONE		----------NA----------				
22	M	CARBON DISULFIDE		----------NA----------				
23	M	IODOMETHANE		----------NA----------				
24		ACETONITRILE		----------NA----------				
25		METHYL ACETATE		----------NA----------				
26	M	METHYLENE CHLORIDE		----------NA----------				
27	M	ACRYLONITRILE		----------NA----------				
28	M	METHYL TERT BUTYL ETHER		----------NA----------				
29	M	trans-1,2-DICHLOROETHYLEN		----------NA----------				
30	M	HEXANE		----------NA----------				
31	M	1,1-DICHLOROETHANE		----------NA----------				
32	M	VINYL ACETATE		----------NA----------				
33	M	DI-ISOPROPYL ETHER		----------NA----------				
34	M	ETHYL TERT BUTYL ETHER		----------NA----------				
35	M	2-BUTANONE		----------NA----------				
36	M	cis-1,2-DICHLOROETHYLENE		----------NA----------				
37	M	2,2-DICHLOROPROPANE		----------NA----------				
38	M	ETHYL ACETATE		----------NA----------				
39		BROMOCHLOROMETHANE		----------NA----------				

---------- True Calc. % Drift ----------

Initial Calibration Verification

Job Number: JC47859 **Sample:** VT9264-ICV9264
Account: UTC United Technologies Corporation **Lab FileID:** T225642.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

40	M	TETRAHYDROFURAN		----------NA----------					
		----------	AvgRF	CCRF	% Dev		----------		
41	M	CHLOROFORM		----------NA----------					
42		t-BUTYL FORMATE		----------NA----------					
43	M	1,1,1-TRICHLOROETHANE		----------NA----------					
44		CYCLOHEXANE		----------NA----------					
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.460	4.0	96	0.00	9.54	
46		1,1-DICHLOROPROPENE		----------NA----------					
47		CARBON TETRACHLORIDE		----------NA----------					
48		ISOPROPYL ACETATE		----------NA----------					
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	97	0.00	10.34	
50	S	1,2-DICHLOROETHANE-d4	0.314	0.313	0.3	97	0.00	9.93	
51	M	BENZENE		----------NA----------					
52	M	1,2-DICHLOROETHANE		----------NA----------					
53		2,2,4-TRIMETHYLPENTANE		----------NA----------					
54	M	TERT-AMYL METHYL ETHER		----------NA----------					
55	M	HEPTANE		----------NA----------					
56	M	TRICHLOROETHYLENE		----------NA----------					
57	M	1,2-DICHLOROPROPANE		----------NA----------					
58	M	DIBROMOMETHANE		----------NA----------					
59		METHYL METHACRYLATE		----------NA----------					
60		METHYLCYCLOHEXANE		----------NA----------					
61	M	BROMODICHLOROMETHANE		----------NA----------					
62	M	2-CHLOROETHYL VINYL ETHER		----------NA----------					
63	M	EPICHLOROHYDRIN		----------NA----------					
64	M	cis-1,3-DICHLOROPROPENE		----------NA----------					
65	M	4-METHYL-2-PENTANONE		----------NA----------					
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	0.00	13.55	
67	S	TOLUENE-d8	1.256	1.257	-0.1	98	0.00	11.97	
68		TOLUENE		----------NA----------					
69		ETHYL METHACRYLATE		----------NA----------					
70		trans-1,3-DICHLOROPROPENE		----------NA----------					
71		1,1,2-TRICHLOROETHANE		----------NA----------					
72	M	TETRACHLOROETHYLENE		----------NA----------					
73	M	2-HEXANONE		----------NA----------					
74		1,3-DICHLOROPROPANE		----------NA----------					
75	M	BUTYL ACETATE		----------NA----------					
76		3,3-DIMETHYL-1-BUTANOL		----------NA----------					
77	M	DIBROMOCHLOROMETHANE		----------NA----------					
78	M	ETHYLENE DIBROMIDE		----------NA----------					
79	M	CHLOROBENZENE		----------NA----------					
80	M	1,1,1,2-TETRACHLOROETHANE		----------NA----------					
81	M	ETHYLBENZENE		----------NA----------					
82	M	m,p-XYLENE		----------NA----------					
83	M	o-XYLENE		----------NA----------					
84	M	STYRENE		----------NA----------					
85		n-AMYL ACETATE		----------NA----------					
86	M	BROMOFORM		----------NA----------					
87	M	CUMENE		----------NA----------					
88		cis-1,4-DICHLORO-2-BUTENE		----------NA----------					
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	100	0.00	16.09	
90	S	4-BROMOFLUOROBENZENE	0.625	0.609	2.6	98	0.00	14.81	
91		1,1,2,2-TETRACHLOROETHANE		----------NA----------					
92		trans-1,4-DICHLORO-2-BUTE		----------NA----------					
93		1,2,3-TRICHLOROPROPANE		----------NA----------					
94		N-PROPYLBENZENE		----------NA----------					

6.8.4

6

Initial Calibration Verification

Job Number: JC47859 **Sample:** VT9264-ICV9264
Account: UTC United Technologies Corporation **Lab FileID:** T225642.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

95		BROMOBENZENE	----------NA----------	
96		2-CHLOROTOLUENE	----------NA----------	
97		4-CHLOROTOLUENE	----------NA----------	
98	M	1,3,5-TRIMETHYLBENZENE	----------NA----------	
99		TERT-BUTYLBENZENE	----------NA----------	
100	M	1,2,4-TRIMETHYLBENZENE	----------NA----------	
101		SEC-BUTYLBENZENE	----------NA----------	
102		P-ISOPROPYLTOLUENE	----------NA----------	
103	M	1,3-DICHLOROBENZENE	----------NA----------	
104	M	1,4-DICHLOROBENZENE	----------NA----------	
105		N-BUTYLBENZENE	----------NA----------	
106	M	1,2-DICHLOROBENZENE	----------NA----------	
107		HEXACHLOROETHANE	----------NA----------	
108	M	1,2-DIBROMO-3-CHLOROPROPA	----------NA----------	
109		HEXACHLOROBUTADIENE	----------NA----------	
110		1,3,5-TRICHLOROBENZENE	----------NA----------	
111		NITROBENZENE	----------NA----------	
112	M	1,2,4-TRICHLOROBENZENE	----------NA----------	
113		1,2,3-TRICHLOROBENZENE	----------NA----------	
114	M	NAPHTHALENE	----------NA----------	
115	M	INDANE	----------NA----------	
116		ETHYLENIMINE	----------NA----------	
117		BIS(CHLOROMETHYL)ETHER	----------NA----------	

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T225633.D MT9264.M Tue Jul 18 23:19:28 2017 MSDT

Continuing Calibration Summary

Job Number: JC47859 **Sample:** VT9272-CC9264
Account: UTC United Technologies Corporation **Lab FileID:** T225831.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\T\T225831.D Vial: 2
Acq On : 29 Jul 2017 9:13 am Operator: payalr
Sample : cc9264-20 Inst : GCMST
Misc : MS18550,VT9272,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jul 20 14:57:09 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	106	0.00	7.45
2	M	TERTIARY BUTYL ALCOHOL	1.246	1.132	9.1	102	0.00	7.56
3	M	1,4-DIOXANE	0.093	0.094	-1.1	117	0.00	11.02
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	101	0.00	9.48
5		CHLORODIFLUOROMETHANE	1.202	1.155	3.9	88	0.00	4.38
6	M	DICHLORODIFLUOROMETHANE	1.258	1.245	1.0	92	-0.02	4.38
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE	1.194	0.990	17.1	81	0.00	4.70
10	M	VINYL CHLORIDE	1.275	1.119	12.2	86	-0.01	4.95
11	M	BROMOMETHANE	0.697	0.605	13.2	82	-0.01	5.57
12	M	CHLOROETHANE	0.583	0.474	18.7	79	-0.01	5.74
13		VINYL BROMIDE	0.812	0.646	20.4	78	0.00	6.05
14	M	TRICHLOROFLUOROMETHANE	1.055	1.004	4.8	91	-0.02	6.15
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER	0.236	0.231	2.1	95	0.00	6.52
18	M	1,1-DICHLOROETHYLENE	0.757	0.688	9.1	88	0.00	6.91
19	M	FREON 113	0.517	0.525	-1.5	93	-0.01	6.89
20		ACROLEIN	0.094	0.086	8.5	98	-0.01	6.73
21	M	ACETONE	0.035	0.053	-51.4#	155	-0.01	6.92
22	M	CARBON DISULFIDE	1.785	1.749	2.0	93	0.00	7.29
23	M	IODOMETHANE	0.893	0.860	3.7	90	0.00	7.16
24		ACETONITRILE	0.056	0.062	-10.7	104	0.00	7.30
25		METHYL ACETATE	0.265	0.354	-33.6	132	0.00	7.34
26	M	METHYLENE CHLORIDE	0.520	0.495	4.8	91	0.00	7.52
27	M	ACRYLONITRILE	0.150	0.157	-4.7	98	-0.01	7.80
28	M	METHYL TERT BUTYL ETHER	1.695	1.658	2.2	95	0.00	7.83
29	M	trans-1,2-DICHLOROETHYLEN	0.631	0.663	-5.1	98	0.00	7.86
30	M	HEXANE	0.653	0.701	-7.4	102	0.00	8.16
31	M	1,1-DICHLOROETHANE	0.803	0.823	-2.5	97	0.00	8.37
32	M	VINYL ACETATE	0.080	0.076	5.0	95	0.00	8.33
33	M	DI-ISOPROPYL ETHER	1.907	1.854	2.8	96	0.00	8.36
34	M	ETHYL TERT BUTYL ETHER	1.808	1.786	1.2	92	0.00	8.77
35	M	2-BUTANONE	0.044	0.052	-18.2	124	0.00	8.98
36	M	cis-1,2-DICHLOROETHYLENE	0.522	0.511	2.1	96	0.00	9.02
37	M	2,2-DICHLOROPROPANE	0.955	0.952	0.3	98	0.00	9.06
38	M	ETHYL ACETATE	0.058	0.075	-29.3	141	0.00	8.99
39		BROMOCHLOROMETHANE	0.228	0.229	-0.4	97	0.00	9.31

---------- True Calc. % Drift ----------

Continuing Calibration Summary

Job Number: JC47859 **Sample:** VT9272-CC9264
Account: UTC United Technologies Corporation **Lab FileID:** T225831.D
Project: SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH

40	M	TETRAHYDROFURAN	20.000	15.373	23.1	82	0.00	9.35
		----------	AvgRF	CCRF	% Dev	----------		
41	M	CHLOROFORM	0.820	0.782	4.6	96	0.00	9.34
42		t-BUTYL FORMATE	0.370	0.268	27.6	69	-0.01	9.40
43	M	1,1,1-TRICHLOROETHANE	0.883	0.921	-4.3	98	0.00	9.62
44		CYCLOHEXANE	0.986	0.884	10.3	88	0.00	9.70
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.467	2.5	99	0.00	9.53
46		1,1-DICHLOROPROPENE	0.574	0.593	-3.3	98	0.00	9.77
47		CARBON TETRACHLORIDE	0.799	0.813	-1.8	99	0.00	9.81
48		ISOPROPYL ACETATE	0.091	0.096	-5.5	106	0.00	9.91
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	101	0.00	10.34
50	S	1,2-DICHLOROETHANE-d4	0.314	0.317	-1.0	102	0.00	9.93
51	M	BENZENE	1.188	1.239	-4.3	99	0.00	10.02
52	M	1,2-DICHLOROETHANE	0.328	0.347	-5.8	100	0.00	10.01
53		2,2,4-TRIMETHYLPENTANE	1.442	1.400	2.9	94	0.00	10.04
54	M	TERT-AMYL METHYL ETHER	1.192	1.168	2.0	95	0.00	10.04
55	M	HEPTANE	0.251	0.277	-10.4	105	0.00	10.18
56	M	TRICHLOROETHYLENE	0.289	0.294	-1.7	99	0.00	10.68
57	M	1,2-DICHLOROPROPANE	0.328	0.344	-4.9	99	0.00	10.93
58	M	DIBROMOMETHANE	0.171	0.179	-4.7	102	0.00	11.07
59		METHYL METHACRYLATE	0.068	0.073	-7.4	109	0.00	10.91
60		METHYLCYCLOHEXANE	0.722	0.741	-2.6	100	0.00	10.92
61	M	BROMODICHLOROMETHANE	0.394	0.399	-1.3	99	0.00	11.19
62	M	2-CHLOROETHYL VINYL ETHER	0.103	0.152	-47.6#	148	0.00	11.41
63	M	EPICHLOROHYDRIN	0.026	0.028	-7.7	107	0.00	11.54
64	M	cis-1,3-DICHLOROPROPENE	0.495	0.509	-2.8	100	0.00	11.65
65	M	4-METHYL-2-PENTANONE	0.129	0.128	0.8	105	0.00	11.74
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	102	0.00	13.55
67	S	TOLUENE-d8	1.256	1.269	-1.0	103	0.00	11.96
68		TOLUENE	0.731	0.781	-6.8	103	0.00	12.04
69		ETHYL METHACRYLATE	0.419	0.400	4.5	100	0.00	12.20
70		trans-1,3-DICHLOROPROPENE	0.466	0.442	5.2	99	0.00	12.20
71		1,1,2-TRICHLOROETHANE	0.235	0.228	3.0	102	0.00	12.43
72	M	TETRACHLOROETHYLENE	0.257	0.275	-7.0	105	0.00	12.65
73	M	2-HEXANONE	0.125	0.132	-5.6	122	0.00	12.62
74		1,3-DICHLOROPROPANE	0.441	0.444	-0.7	100	0.00	12.63
75	M	BUTYL ACETATE	0.212	0.210	0.9	101	0.00	12.69
76		3,3-DIMETHYL-1-BUTANOL	0.051	0.041	19.6	94	0.00	12.78
77	M	DIBROMOCHLOROMETHANE	0.335	0.313	6.6	97	0.00	12.91
78	M	ETHYLENE DIBROMIDE	0.267	0.253	5.2	96	0.00	13.08
79	M	CHLOROBENZENE	0.903	0.893	1.1	99	0.00	13.58
80	M	1,1,1,2-TETRACHLOROETHANE	0.437	0.414	5.3	99	0.00	13.64
81	M	ETHYLBENZENE	1.580	1.637	-3.6	102	0.00	13.64
82	M	m,p-XYLENE	0.596	0.631	-5.9	102	0.00	13.76
83	M	o-XYLENE	1.486	1.495	-0.6	101	0.00	14.21
84	M	STYRENE	1.064	1.041	2.2	99	0.00	14.22
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.250	0.230	8.0	100	0.00	14.50
87	M	CUMENE	1.890	2.015	-6.6	102	0.00	14.59
88		cis-1,4-DICHLORO-2-BUTENE	0.125	0.107	14.4	95	0.00	14.64
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	103	0.00	16.09
90	S	4-BROMOFLUOROBENZENE	0.625	0.615	1.6	102	0.00	14.80
91		1,1,2,2-TETRACHLOROETHANE	0.656	0.590	10.1	100	0.00	14.89
92		trans-1,4-DICHLORO-2-BUTE	0.133	0.129	3.0	102	0.00	14.94
93		1,2,3-TRICHLOROPROPANE	0.163	0.142	12.9	100	0.00	14.98
94		N-PROPYLBENZENE	3.064	3.177	-3.7	101	0.00	15.04

Continuing Calibration Summary

Job Number: JC47859 **Sample:** VT9272-CC9264
Account: UTC United Technologies Corporation **Lab FileID:** T225831.D
Project: SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH

95		BROMOBENZENE	0.680	0.603	11.3	97	0.00	15.03
96		2-CHLOROTOLUENE	0.665	0.657	1.2	101	0.00	15.20
97		4-CHLOROTOLUENE	1.899	1.817	4.3	100	0.00	15.31
98	M	1,3,5-TRIMETHYLBENZENE	2.508	2.597	-3.5	101	0.00	15.21
99		TERT-BUTYLBENZENE	2.069	2.183	-5.5	104	0.00	15.60
100	M	1,2,4-TRIMETHYLBENZENE	2.720	2.783	-2.3	102	0.00	15.64
101		SEC-BUTYLBENZENE	3.384	3.645	-7.7	102	0.00	15.83
102		P-ISOPROPYLTOLUENE	2.967	3.181	-7.2	103	0.00	15.97
103	M	1,3-DICHLOROBENZENE	1.549	1.483	4.3	101	0.00	16.03
104	M	1,4-DICHLOROBENZENE	1.576	1.497	5.0	102	0.00	16.12
105		N-BUTYLBENZENE	0.842	0.877	-4.2	104	0.00	16.42
106	M	1,2-DICHLOROBENZENE	1.698	1.606	5.4	100	0.00	16.56
107		HEXACHLOROETHANE	0.363	0.358	1.4	102	0.00	16.85
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.183	0.165	9.8	98	0.00	17.39
109		HEXACHLOROBUTADIENE	0.863	0.882	-2.2	102	0.00	18.43
110		1,3,5-TRICHLOROBENZENE	1.915	1.950	-1.8	101	0.00	17.60
111		NITROBENZENE	0.065	0.051	21.5	99	0.00	17.61
112	M	1,2,4-TRICHLOROBENZENE	1.486	1.464	1.5	98	0.00	18.29
113		1,2,3-TRICHLOROBENZENE	1.104	1.000	9.4	93	0.00	18.88
114	M	NAPHTHALENE	2.474	2.168	12.4	93	0.00	18.61
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T225633.D MT9264.M Mon Jul 31 12:40:58 2017

6.8.5

6

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225837.D
Acq On : 29 Jul 2017 12:26 pm
Operator : payalr
Sample : jc47859-1
Misc : MS18594,VT9272,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 31 14:09:24 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

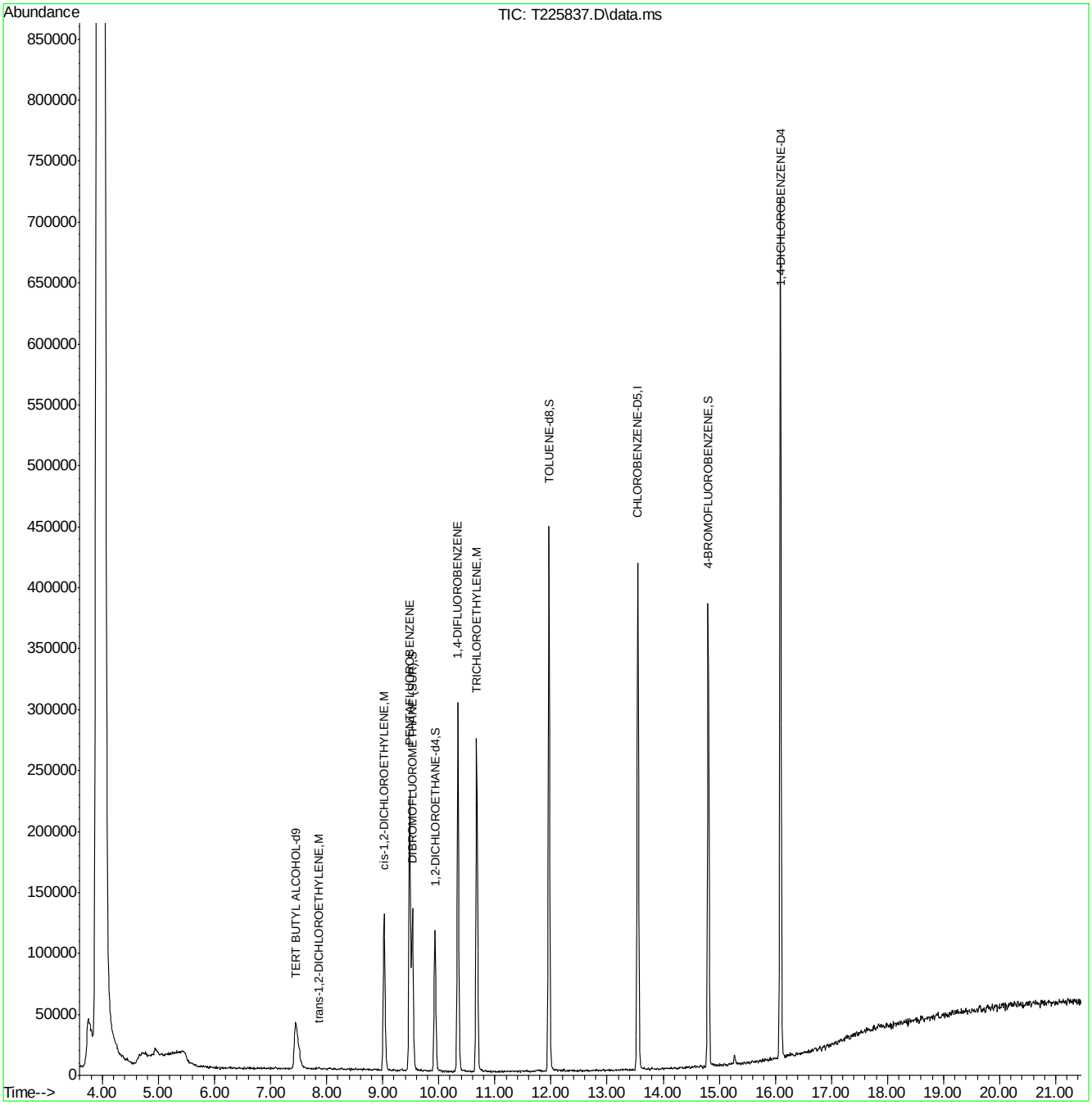
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.447	65	117263	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.482	168	182254	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.339	114	276498	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.545	117	276934	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.093	152	216036	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.529	113	86324	29.68	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 98.93%			
50) 1,2-DICHLOROETHANE-d4	9.931	65	85526	29.55	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 98.50%			
67) TOLUENE-d8	11.966	98	346944	29.92	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 99.73%			
90) 4-BROMOFLUOROBENZENE	14.806	174	131128	29.12	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.07%			
Target Compounds						Qvalue
29) trans-1,2-DICHLOROETHY...	7.860	61	899	0.23	PPb	97
36) cis-1,2-DICHLOROETHYLENE	9.027	96	69407	21.89	PPb	93
56) TRICHLOROETHYLENE	10.674	95	104403	39.19	PPb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

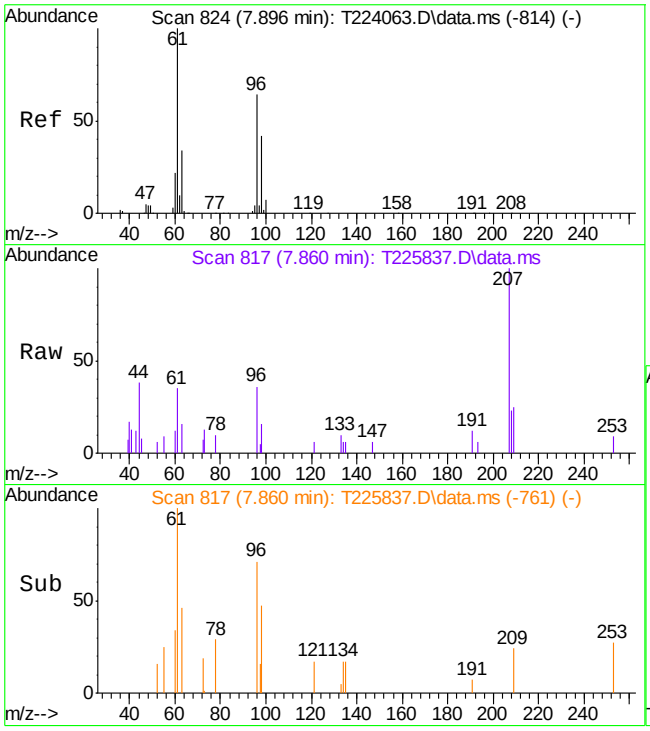
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225837.D
Acq On : 29 Jul 2017 12:26 pm
Operator : payalr
Sample : jc47859-1
Misc : MS18594,VT9272,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 31 14:09:24 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration



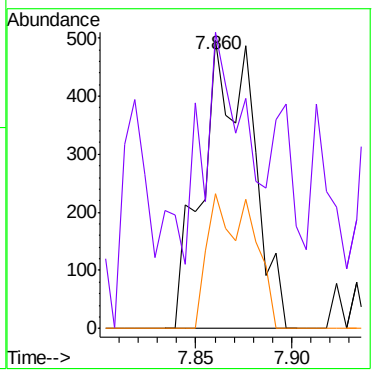
SGS ACCUTEST JC47859

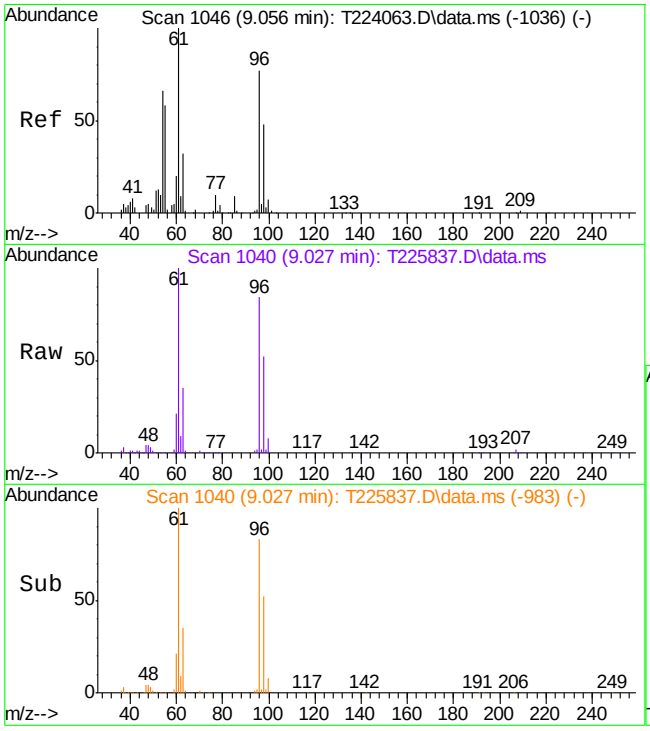


#29
trans-1,2-DICHLOROETHYLENE
Concen: 0.23 PPb
RT: 7.860 min Scan# 817
Delta R.T. -0.010 min
Lab File: T225837.D
Acq: 29 Jul 2017 12:26 pm

Tgt Ion: 61 Resp: 899

Ion	Ratio	Lower	Upper
61	100		
96	67.3	39.6	99.6
98	47.0	14.5	74.5

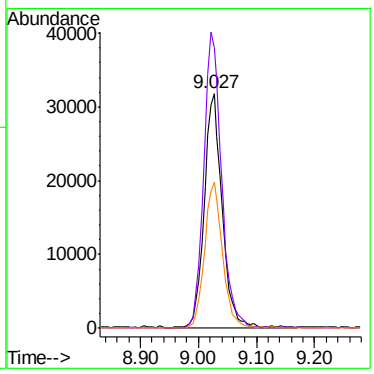


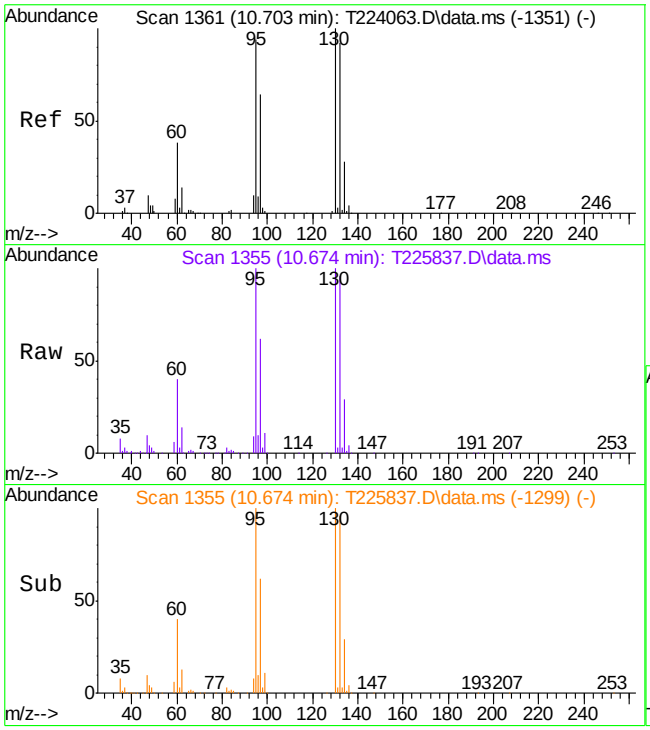


#36
cis-1,2-DICHLOROETHYLENE
Concen: 21.89 PPb
RT: 9.027 min Scan# 1040
Delta R.T. -0.000 min
Lab File: T225837.D
Acq: 29 Jul 2017 12:26 pm

Tgt Ion: 96 Resp: 69407

Ion	Ratio	Lower	Upper
96	100		
61	119.5	101.4	161.4
98	62.1	31.1	91.1

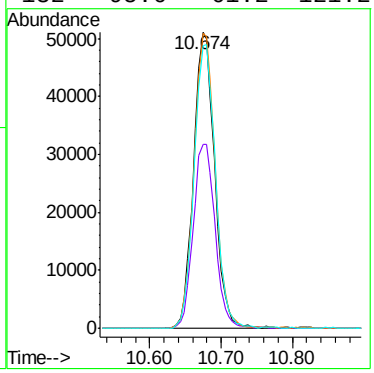




#56
TRICHLOROETHYLENE
Concen: 39.19 PPb
RT: 10.674 min Scan# 1355
Delta R.T. -0.005 min
Lab File: T225837.D
Acq: 29 Jul 2017 12:26 pm

Tgt Ion: 95 Resp: 104403

Ion	Ratio	Lower	Upper
95	100		
97	62.3	32.5	92.5
130	99.6	74.3	134.3
132	95.6	61.2	121.2



SGS ACCUTEST
JC47859

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225833.D
Acq On : 29 Jul 2017 10:16 am
Operator : payalr
Sample : mb
Misc : MS18550,VT9272,W,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 31 12:41:35 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.458	65	112822	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.482	168	183248	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.339	114	276033	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.545	117	277127	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.093	152	210237	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.529	113	86124	29.45	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 98.17%			
50) 1,2-DICHLOROETHANE-d4	9.926	65	85265	29.51	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 98.37%			
67) TOLUENE-d8	11.961	98	345209	29.75	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 99.17%			
90) 4-BROMOFLUOROBENZENE	14.806	174	128861	29.41	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.03%			
Target Compounds						Qvalue

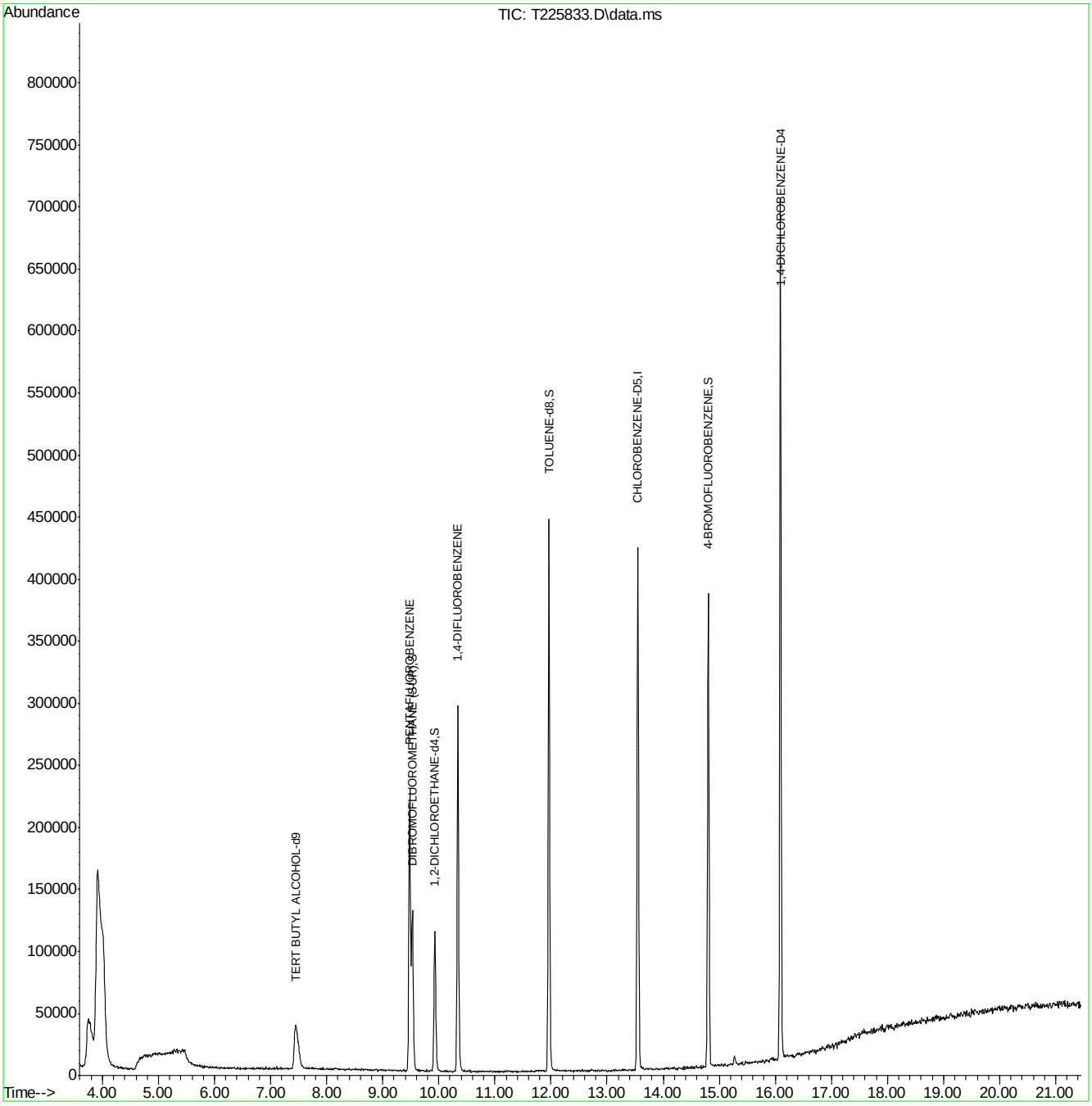
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC47859

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T\
Data File : T225833.D
Acq On : 29 Jul 2017 10:16 am
Operator : payalr
Sample : mb
Misc : MS18550,VT9272,W,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 31 12:41:35 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration



SGS ACCUTEST JC47859

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Automated Report

Technical Report for

United Technologies Corporation

SECORINI: Zanesville OH, Monthly

182602727

SGS Accutest Job Number: JC48691

Sampling Dates: 08/08/17 - 08/09/17

Report to:

Stantec Consulting Corporation
8770 Guion Road Suite B
Indianapolis, IN 46268
susan.hall@stantec.com

ATTN: Susan Hall

Total number of pages in report: **209**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Sample Summary

United Technologies Corporation

Job No: JC48691

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC48691-1	08/08/17	20:30	EC	08/10/17	AQ	Ground Water	I-1
JC48691-2	08/08/17	20:35	EC	08/10/17	AQ	Ground Water	I-2
JC48691-3	08/08/17	20:40	EC	08/10/17	AQ	Ground Water	I-3
JC48691-4	08/08/17	20:45	EC	08/10/17	AQ	Ground Water	I-4
JC48691-5	08/08/17	20:50	EC	08/10/17	AQ	Influent	INFLUENT
JC48691-6	08/08/17	20:55	EC	08/10/17	AQ	Effluent	EFFLUENT
JC48691-7	08/09/17	08:30	EC	08/10/17	AQ	Ground Water	RIVOUT
JC48691-7A	08/09/17	08:30	EC	08/10/17	AQ	Ground Water	RIVOUT
JC48691-8	08/09/17	09:00	EC	08/10/17	AQ	Ground Water	W-6
JC48691-8A	08/09/17	09:00	EC	08/10/17	AQ	Ground Water	W-6
JC48691-9	08/09/17	09:15	EC	08/10/17	AQ	Ground Water	W-12
JC48691-9A	08/09/17	09:15	EC	08/10/17	AQ	Ground Water	W-12
JC48691-10	08/09/17	09:15	EC	08/10/17	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	United Technologies Corporation	**Job No**	JC48691
Site:	SECORINI: Zanesville OH, Monthly	**Report Date**	8/17/2017 2:56:48 PM

On 08/10/2017, 9 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 1.1 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC48691 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Volatiles by GCMS By Method EPA 624

Matrix: AQ **Batch ID:** VT9285

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC48691-1MS, JC48691-1MSD were used as the QC samples indicated.

Metals By Method EPA 200.7

Matrix: AQ **Batch ID:** MP2378

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC48430-20MS, JC48430-20MSD, JC48430-20SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Zinc are outside control limits. Serial dilution indicates possible matrix interference.

Metals By Method EPA 245.1

Matrix: AQ **Batch ID:** MP2404

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC48720-1MS, JC48720-1MSD were used as the QC samples for metals.

Wet Chemistry By Method EPA 1664A

Matrix: AQ **Batch ID:** GP7228

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC48491-2MS, JC48783-2DUP were used as the QC samples for HEM Oil and Grease.
- RPD(s) for Duplicate for HEM Oil and Grease are outside control limits. High RPD due to possible nonhomogeniety between sample bottles.

Wet Chemistry By Method EPA 335.4/LACHAT

Matrix: AQ **Batch ID:** GP7122

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC48613-1DUP, JC48613-1MS were used as the QC samples for Cyanide.
- Matrix Spike Recovery(s) for Cyanide are outside control limits. Spike recovery indicates possible matrix interference.

Wet Chemistry By Method SM2540 D-11

Matrix: AQ **Batch ID:** GN68045

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC48644-3DUP were used as the QC samples for Solids, Total Suspended.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC48691
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 08/08/17 thru 08/09/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC48691-1	**I-1**					
cis-1,2-Dichloroethene		16.1	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		16.1	1.0		ug/l	EPA 624
Trichloroethene		29.0	1.0		ug/l	EPA 624
JC48691-2	**I-2**					
cis-1,2-Dichloroethene		7.7	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		7.7	1.0		ug/l	EPA 624
Trichloroethene		11.8	1.0		ug/l	EPA 624
JC48691-3	**I-3**					
cis-1,2-Dichloroethene		2.4	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		2.4	1.0		ug/l	EPA 624
Trichloroethene		8.5	1.0		ug/l	EPA 624
JC48691-4	**I-4**					
cis-1,2-Dichloroethene		84.2	1.0		ug/l	EPA 624
trans-1,2-Dichloroethene		1.3	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		85.5	1.0		ug/l	EPA 624
Trichloroethene		171	1.0		ug/l	EPA 624
JC48691-5	**INFLUENT**					
cis-1,2-Dichloroethene		22.1	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		22.1	1.0		ug/l	EPA 624
Trichloroethene		43.2	1.0		ug/l	EPA 624
JC48691-6	**EFFLUENT**					
cis-1,2-Dichloroethene		4.8	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		4.8	1.0		ug/l	EPA 624
Trichloroethene		5.4	1.0		ug/l	EPA 624
JC48691-7	**RIVOUT**					
cis-1,2-Dichloroethene		4.3	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		4.3	1.0		ug/l	EPA 624
Trichloroethene		4.7	1.0		ug/l	EPA 624

Summary of Hits

Job Number: JC48691
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 08/08/17 thru 08/09/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC48691-7A	**RIVOUT**					
Iron		738	100		ug/l	EPA 200.7
Zinc		36.7	20		ug/l	EPA 200.7
Solids, Total Suspended		12.3	4.0		mg/l	SM2540 D-11
JC48691-8	**W-6**					
cis-1,2-Dichloroethene		9.1	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		9.1	1.0		ug/l	EPA 624
Trichloroethene		4.8	1.0		ug/l	EPA 624
JC48691-8A	**W-6**					
Iron		252	100		ug/l	EPA 200.7
JC48691-9	**W-12**					
cis-1,2-Dichloroethene		2.4	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		2.4	1.0		ug/l	EPA 624
Trichloroethene		5.6	1.0		ug/l	EPA 624
JC48691-9A	**W-12**					
Iron		238	100		ug/l	EPA 200.7
JC48691-10	**TRIP BLANK**					

No hits reported in this sample.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID:	I-1		
Lab Sample ID:	JC48691-1	**Date Sampled:**	08/08/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226124.D	1	08/11/17 15:31	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	16.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	16.1	1.0	ug/l	
79-01-6	Trichloroethene	29.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	108%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	94%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-2		
Lab Sample ID:	JC48691-2	**Date Sampled:**	08/08/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226125.D	1	08/11/17 16:01	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	7.7	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	7.7	1.0	ug/l	
79-01-6	Trichloroethene	11.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	107%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	92%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-3		
Lab Sample ID:	JC48691-3	**Date Sampled:**	08/08/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226126.D	1	08/11/17 16:31	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.4	1.0	ug/l	
79-01-6	Trichloroethene	8.5	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	109%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	93%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-4		
Lab Sample ID:	JC48691-4	**Date Sampled:**	08/08/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226127.D	1	08/11/17 17:02	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	84.2	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.3	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	85.5	1.0	ug/l	
79-01-6	Trichloroethene	171	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	109%		76-122%
2037-26-5	Toluene-D8 (SUR)	99%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	93%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	INFLUENT		
Lab Sample ID:	JC48691-5	**Date Sampled:**	08/08/17
Matrix:	AQ - Influent	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226132.D	1	08/11/17 19:32	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	22.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	22.1	1.0	ug/l	
79-01-6	Trichloroethene	43.2	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	107%		76-122%
2037-26-5	Toluene-D8 (SUR)	99%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	92%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	EFFLUENT		
Lab Sample ID:	JC48691-6	**Date Sampled:**	08/08/17
Matrix:	AQ - Effluent	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226133.D	1	08/11/17 20:02	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	4.8	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	4.8	1.0	ug/l	
79-01-6	Trichloroethene	5.4	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	108%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	94%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC48691-7	**Date Sampled:**	08/09/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226134.D	1	08/11/17 20:32	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	4.3	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	4.3	1.0	ug/l	
79-01-6	Trichloroethene	4.7	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	110%		76-122%
2037-26-5	Toluene-D8 (SUR)	99%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	91%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC48691-7A	**Date Sampled:**	08/09/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Iron	738	100	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	08/12/17	08/12/17	JA	EPA 245.1 [2]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	36.7	20	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42588
(2) Instrument QC Batch: MA42592
(3) Prep QC Batch: MP2378
(4) Prep QC Batch: MP2404

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC48691-7A	**Date Sampled:**	08/09/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	08/11/17 13:07	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.2	5.2	mg/l	1	08/16/17 13:10	BM	EPA 1664A
Solids, Total Suspended	12.3	4.0	mg/l	1	08/11/17 11:05	RI	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-6		
Lab Sample ID:	JC48691-8	**Date Sampled:**	08/09/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226135.D	1	08/11/17 21:02	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	9.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	9.1	1.0	ug/l	
79-01-6	Trichloroethene	4.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	108%		76-122%
2037-26-5	Toluene-D8 (SUR)	99%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	94%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: W-6
Lab Sample ID: JC48691-8A
Matrix: AQ - Ground Water
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Iron	252	100	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	08/12/17	08/12/17	JA	EPA 245.1 [2]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42588
(2) Instrument QC Batch: MA42592
(3) Prep QC Batch: MP2378
(4) Prep QC Batch: MP2404

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-6		
Lab Sample ID:	JC48691-8A	**Date Sampled:**	08/09/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	08/11/17 13:09	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.1	5.1	mg/l	1	08/16/17 13:10	BM	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	08/11/17 11:05	RI	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-12		
Lab Sample ID:	JC48691-9	**Date Sampled:**	08/09/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226136.D	1	08/11/17 21:33	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.4	1.0	ug/l	
79-01-6	Trichloroethene	5.6	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	111%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	94%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: W-12
Lab Sample ID: JC48691-9A
Matrix: AQ - Ground Water
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Iron	238	100	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	08/12/17	08/12/17	JA	EPA 245.1 [2]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	08/11/17	08/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42588
(2) Instrument QC Batch: MA42592
(3) Prep QC Batch: MP2378
(4) Prep QC Batch: MP2404

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-12		
Lab Sample ID:	JC48691-9A	**Date Sampled:**	08/09/17
Matrix:	AQ - Ground Water	**Date Received:**	08/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	08/11/17 13:10	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.1	5.1	mg/l	1	08/16/17 13:10	BM	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	08/11/17 11:05	RI	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JC48691-10	**Date Sampled:**	08/09/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	08/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226131.D	1	08/11/17 19:02	PR	n/a	n/a	VT9285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	108%		76-122%
2037-26-5	Toluene-D8 (SUR)	98%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	95%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

7250 6932 3840 JC-8691

Client / Reporting Information | Project Information | Requested Analysis (see TEST CODE sheet) | Matrix Codes

STANTEC
8770 GREENWOOD
INDIANAPOLIS IN 46268
SUSAN.WAGNER@STANTEC.COM
317-876-8375
ERIC COX

ZANESVILLE MONTHLY SAMPLING
2000 LINDEMANN
ZANESVILLE OH
18260 7727

	Field ID / Point of Collection							VOC+TICs, VMS+10 DCE, VMS+17 DCE	METALS (Ag, Cu, Fe, Hg, Zn)	CN	TSS	OG 1664	4 VOA Cl2 8/10/17	LAB USE ONLY
1	I-1	8-8-17	2030	EC	GW	4		X						L27
2	I-2		2035			3		X						A32
3	I-3		2040			3		X						C21
4	I-4		2045			3		X						G22T4
5	INFLUENT		2050			3		X						U519
6	EFFLUENT		2055			3		X						
7	RIVER	8-9-17	0830			9	5	1	2	X	X	X	X	X
8	W-6		0900			9	5	1	2	X	X	X	X	X
9	W-12		0915			9	5	1	2	X	X	X	X	X
10	TRIP BLANK					2	2			X				

INITIAL ASSESSMENT
LABEL VERIFICATION

EC
X 5 Business Days
X 5 Day RUSH
X 2 Day RUSH
1 Day RUSH
Other

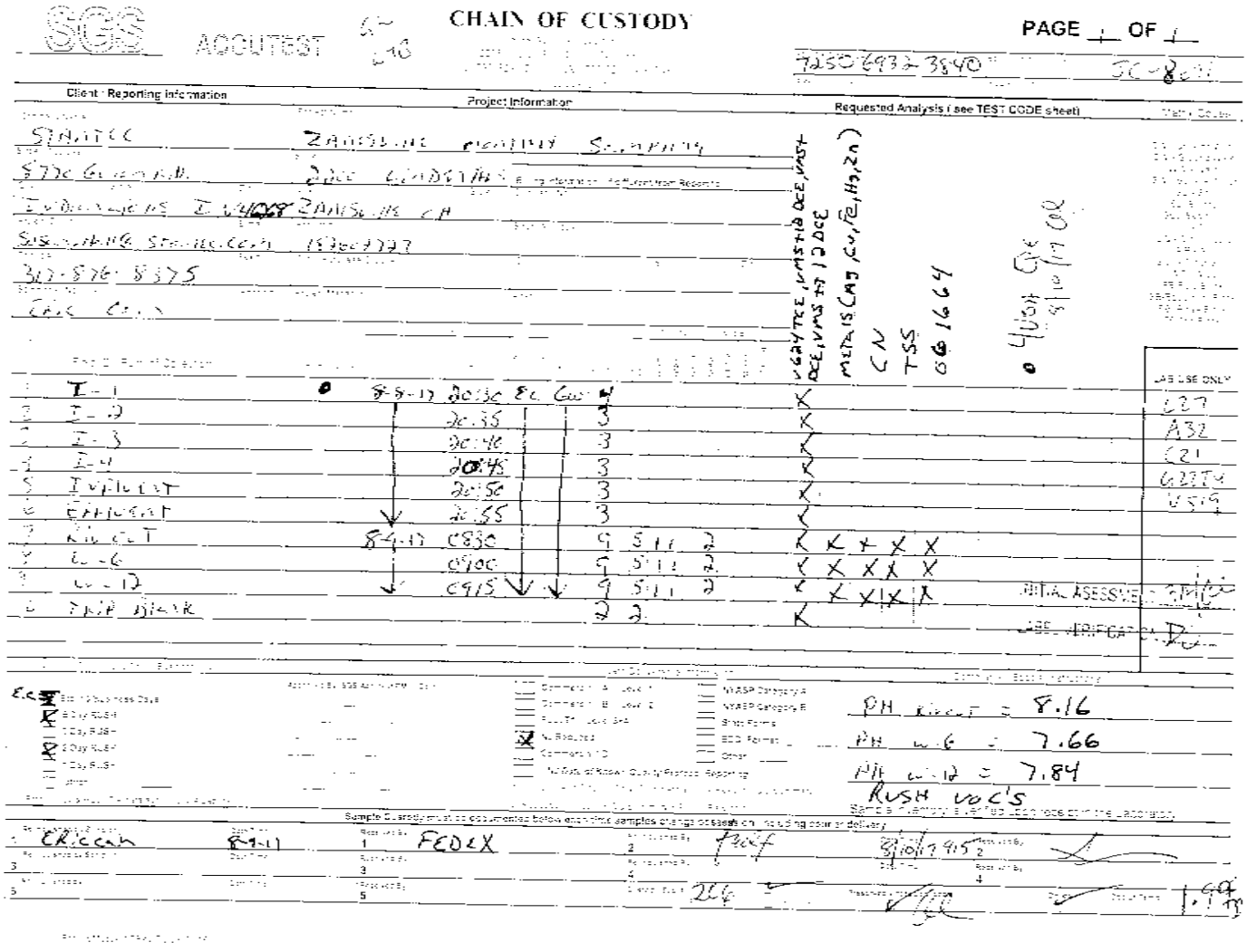
Comments: A Level 1, B Level 2, C Level 3A, D No Reduced, Other
NYASP Category A, NYASP Category B, State Forms, EDD Format, Other

PH RIVER = 8.16
PH W-6 = 7.66
PH W-12 = 7.84
RUSH VOC'S

Sample Custody must be documented below each time samples change possession, including courier delivery

Relinquished by	Date/Time	Received by	Relinquished by	Date/Time	Received by
1 ERiccan	8-9-17	1 FEDEX	2 [signature]	8/10/17 915	2 [signature]
3		3	4		4
5		5			

Cooler Temp: 2.6 Temp Blank: 1.9 °C



JC48691: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC48691 **Client:** _____ **Project:** _____

Date / Time Received: 8/10/2017 9:15:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.9);

Cooler Temps (Corrected) °C: Cooler 1: (1.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC48691: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC48691

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC48691-1 I-1	Collected: 08-AUG-17 20:30 By: EC		Received: 10-AUG-17 By: AS			
JC48691-1	EPA 624	11-AUG-17 15:31	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC48691-2 I-2	Collected: 08-AUG-17 20:35 By: EC		Received: 10-AUG-17 By: AS			
JC48691-2	EPA 624	11-AUG-17 16:01	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC48691-3 I-3	Collected: 08-AUG-17 20:40 By: EC		Received: 10-AUG-17 By: AS			
JC48691-3	EPA 624	11-AUG-17 16:31	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC48691-4 I-4	Collected: 08-AUG-17 20:45 By: EC		Received: 10-AUG-17 By: AS			
JC48691-4	EPA 624	11-AUG-17 17:02	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC48691-5 INFLUENT	Collected: 08-AUG-17 20:50 By: EC		Received: 10-AUG-17 By: AS			
JC48691-5	EPA 624	11-AUG-17 19:32	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC48691-6 EFFLUENT	Collected: 08-AUG-17 20:55 By: EC		Received: 10-AUG-17 By: AS			
JC48691-6	EPA 624	11-AUG-17 20:02	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC48691-7 RIVOUT	Collected: 09-AUG-17 08:30 By: EC		Received: 10-AUG-17 By: AS			

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC48691

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC48691-7	EPA 624	11-AUG-17 20:32	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC48691-8	Collected: 09-AUG-17 09:00 By: EC		Received: 10-AUG-17 By: AS			
W-6						
JC48691-8	EPA 624	11-AUG-17 21:02	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC48691-9	Collected: 09-AUG-17 09:15 By: EC		Received: 10-AUG-17 By: AS			
W-12						
JC48691-9	EPA 624	11-AUG-17 21:33	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC48691-10	Collected: 09-AUG-17 09:15 By: EC		Received: 10-AUG-17 By: AS			
TRIP BLANK						
JC48691-10	EPA 624	11-AUG-17 19:02	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC48691-7A	Collected: 09-AUG-17 08:30 By: EC		Received: 10-AUG-17 By: AS			
RIVOUT						
JC48691-7A	SM2540 D-11	11-AUG-17 11:05	RI			TSS
JC48691-7A	EPA 335.4/LACHAT	11-AUG-17 13:07	BM	11-AUG-17	RP	CN
JC48691-7A	EPA 200.7	12-AUG-17 01:34	ND	11-AUG-17	RM	AG,CU,FE,ZN
JC48691-7A	EPA 245.1	12-AUG-17 09:53	JA	12-AUG-17	JA	HG
JC48691-7A	EPA 1664A	16-AUG-17 13:10	BM	16-AUG-17	BM	OG1664
JC48691-8A	Collected: 09-AUG-17 09:00 By: EC		Received: 10-AUG-17 By: AS			
W-6						
JC48691-8A	SM2540 D-11	11-AUG-17 11:05	RI			TSS
JC48691-8A	EPA 335.4/LACHAT	11-AUG-17 13:09	BM	11-AUG-17	RP	CN
JC48691-8A	EPA 200.7	12-AUG-17 01:47	ND	11-AUG-17	RM	AG,CU,FE,ZN
JC48691-8A	EPA 245.1	12-AUG-17 09:54	JA	12-AUG-17	JA	HG
JC48691-8A	EPA 1664A	16-AUG-17 13:10	BM	16-AUG-17	BM	OG1664

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC48691

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC48691-9A	Collected: 09-AUG-17 09:15 By: EC			Received: 10-AUG-17 By: AS		
W-12						
JC48691-9A	SM2540 D-11	11-AUG-17 11:05	RI			TSS
JC48691-9A	EPA 335.4/LACHAT	11-AUG-17 13:10	BM	11-AUG-17	RP	CN
JC48691-9A	EPA 200.7	12-AUG-17 01:52	ND	11-AUG-17	RM	AG,CU,FE,ZN
JC48691-9A	EPA 245.1	12-AUG-17 09:55	JA	12-AUG-17	JA	HG
JC48691-9A	EPA 1664A	16-AUG-17 13:10	BM	16-AUG-17	BM	OG1664

SGS Accutest Internal Chain of Custody

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 08/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC48691-1.1	Secured Storage	Bridget Kelly	08/11/17 15:41	Retrieve from Storage
JC48691-1.1	Bridget Kelly	GCMST	08/11/17 15:41	Load on Instrument
JC48691-1.2	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-1.2	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument
JC48691-1.3	Secured Storage	Bridget Kelly	08/11/17 15:41	Retrieve from Storage
JC48691-1.3	Bridget Kelly	GCMST	08/11/17 15:41	Load on Instrument
JC48691-2.2	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-2.2	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument
JC48691-3.1	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-3.1	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument
JC48691-4.2	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-4.2	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument
JC48691-5.2	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-5.2	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument
JC48691-6.2	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-6.2	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument
JC48691-7.1	Secured Storage	Dwayne Johnson	08/11/17 08:08	Retrieve from Storage
JC48691-7.1	Dwayne Johnson	Secured Staging Area	08/11/17 08:08	Return to Storage
JC48691-7.1	Secured Staging Area	Kayla Weaver	08/11/17 08:17	Retrieve from Storage
JC48691-7.1	Kayla Weaver	Secured Storage	08/11/17 15:47	Return to Storage
JC48691-7.1	Secured Storage	Eric Barksdale	08/15/17 22:36	Retrieve from Storage
JC48691-7.1	Eric Barksdale	Secured Staging Area	08/15/17 22:37	Return to Storage
JC48691-7.1	Secured Staging Area	Tyrus Takacs	08/16/17 08:29	Retrieve from Storage
JC48691-7.1	Tyrus Takacs		08/16/17 17:20	Depleted
JC48691-7.3	Secured Storage	Dwayne Johnson	08/11/17 08:40	Retrieve from Storage
JC48691-7.3	Dwayne Johnson	Secured Staging Area	08/11/17 08:40	Return to Storage
JC48691-7.3	Secured Staging Area	Colleen Hill	08/11/17 08:44	Retrieve from Storage
JC48691-7.3	Secured Storage	Jennifer Voitovitch	08/11/17 22:32	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC48691-7.3	Jennifer Voitovitch	Secured Staging Area	08/11/17 22:32	Return to Storage
JC48691-7.3	Secured Staging Area	Jessica Adametz	08/12/17 07:55	Retrieve from Storage
JC48691-7.3	Jessica Adametz	Secured Storage	08/12/17 11:15	Return to Storage
JC48691-7.3.1	Colleen Hill	Metals Digestion	08/11/17 10:13	Digestate from JC48691-7.3
JC48691-7.3.1	Metals Digestion	Colleen Hill	08/11/17 10:13	Digestate from JC48691-7.3

SGS Accutest Internal Chain of Custody

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 08/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC48691-7.3.1	Colleen Hill	Metals Digestate Storage	08/11/17 10:13	Return to Storage
JC48691-7.5	Secured Storage	Dwayne Johnson	08/11/17 09:05	Retrieve from Storage
JC48691-7.5	Dwayne Johnson	Secured Staging Area	08/11/17 09:05	Return to Storage
JC48691-7.5	Secured Staging Area	Rie Iwasaki	08/11/17 09:11	Retrieve from Storage
JC48691-7.5	Rie Iwasaki		08/11/17 12:16	Depleted
JC48691-7.6	Secured Storage	Alfredo Crespo	08/11/17 07:59	Retrieve from Storage
JC48691-7.6	Alfredo Crespo	Secured Staging Area	08/11/17 07:59	Return to Storage
JC48691-7.6	Secured Staging Area	Rinku Patel	08/11/17 08:10	Retrieve from Storage
JC48691-7.6	Rinku Patel	Secured Storage	08/11/17 14:54	Return to Storage
JC48691-7.8	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-7.8	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument
JC48691-8.1	Secured Storage	Dwayne Johnson	08/11/17 08:08	Retrieve from Storage
JC48691-8.1	Dwayne Johnson	Secured Staging Area	08/11/17 08:08	Return to Storage
JC48691-8.1	Secured Staging Area	Kayla Weaver	08/11/17 08:17	Retrieve from Storage
JC48691-8.1	Kayla Weaver	Secured Storage	08/11/17 15:47	Return to Storage
JC48691-8.1	Secured Storage	Eric Barksdale	08/15/17 22:36	Retrieve from Storage
JC48691-8.1	Eric Barksdale	Secured Staging Area	08/15/17 22:37	Return to Storage
JC48691-8.1	Secured Staging Area	Tyrus Takacs	08/16/17 08:29	Retrieve from Storage
JC48691-8.1	Tyrus Takacs		08/16/17 17:20	Depleted
JC48691-8.3	Secured Storage	Dwayne Johnson	08/11/17 08:40	Retrieve from Storage
JC48691-8.3	Dwayne Johnson	Secured Staging Area	08/11/17 08:40	Return to Storage
JC48691-8.3	Secured Staging Area	Colleen Hill	08/11/17 08:44	Retrieve from Storage
JC48691-8.3	Secured Storage	Jennifer Voitovitch	08/11/17 22:32	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC48691-8.3	Jennifer Voitovitch	Secured Staging Area	08/11/17 22:32	Return to Storage
JC48691-8.3	Secured Staging Area	Jessica Adametz	08/12/17 07:55	Retrieve from Storage
JC48691-8.3	Jessica Adametz	Secured Storage	08/12/17 11:15	Return to Storage
JC48691-8.3.1	Colleen Hill	Metals Digestion	08/11/17 10:13	Digestate from JC48691-8.3
JC48691-8.3.1	Metals Digestion	Colleen Hill	08/11/17 10:13	Digestate from JC48691-8.3
JC48691-8.3.1	Colleen Hill	Metals Digestate Storage	08/11/17 10:13	Return to Storage
JC48691-8.5	Secured Storage	Dwayne Johnson	08/11/17 09:05	Retrieve from Storage
JC48691-8.5	Dwayne Johnson	Secured Staging Area	08/11/17 09:05	Return to Storage
JC48691-8.5	Secured Staging Area	Rie Iwasaki	08/11/17 09:11	Retrieve from Storage
JC48691-8.5	Rie Iwasaki	Secured Storage	08/11/17 16:19	Return to Storage
JC48691-8.6	Secured Storage	Alfredo Crespo	08/11/17 07:59	Retrieve from Storage
JC48691-8.6	Alfredo Crespo	Secured Staging Area	08/11/17 07:59	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 08/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC48691-8.6	Secured Staging Area	Rinku Patel	08/11/17 08:10	Retrieve from Storage
JC48691-8.6	Rinku Patel	Secured Storage	08/11/17 14:54	Return to Storage
JC48691-8.8	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-8.8	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument
JC48691-9.2	Secured Storage	Dwayne Johnson	08/11/17 08:08	Retrieve from Storage
JC48691-9.2	Dwayne Johnson	Secured Staging Area	08/11/17 08:08	Return to Storage
JC48691-9.2	Secured Staging Area	Kayla Weaver	08/11/17 08:17	Retrieve from Storage
JC48691-9.2	Kayla Weaver	Secured Storage	08/11/17 15:47	Return to Storage
JC48691-9.2	Secured Storage	Eric Barksdale	08/15/17 22:36	Retrieve from Storage
JC48691-9.2	Eric Barksdale	Secured Staging Area	08/15/17 22:37	Return to Storage
JC48691-9.2	Secured Staging Area	Tyrus Takacs	08/16/17 08:29	Retrieve from Storage
JC48691-9.2	Tyrus Takacs		08/16/17 17:20	Depleted
JC48691-9.3	Secured Storage	Dwayne Johnson	08/11/17 08:40	Retrieve from Storage
JC48691-9.3	Dwayne Johnson	Secured Staging Area	08/11/17 08:40	Return to Storage
JC48691-9.3	Secured Staging Area	Colleen Hill	08/11/17 08:44	Retrieve from Storage
JC48691-9.3	Secured Storage	Jennifer Voitovitch	08/11/17 22:32	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC48691-9.3	Jennifer Voitovitch	Secured Staging Area	08/11/17 22:32	Return to Storage
JC48691-9.3	Secured Staging Area	Jessica Adametz	08/12/17 07:55	Retrieve from Storage
JC48691-9.3	Jessica Adametz	Secured Storage	08/12/17 11:15	Return to Storage
JC48691-9.3.1	Colleen Hill	Metals Digestion	08/11/17 10:13	Digestate from JC48691-9.3
JC48691-9.3.1	Metals Digestion	Colleen Hill	08/11/17 10:13	Digestate from JC48691-9.3
JC48691-9.3.1	Colleen Hill	Metals Digestate Storage	08/11/17 10:13	Return to Storage
JC48691-9.4	Secured Storage	Dwayne Johnson	08/11/17 09:05	Retrieve from Storage
JC48691-9.4	Dwayne Johnson	Secured Staging Area	08/11/17 09:05	Return to Storage
JC48691-9.4	Secured Staging Area	Rie Iwasaki	08/11/17 09:11	Retrieve from Storage
JC48691-9.4	Rie Iwasaki	Secured Storage	08/11/17 16:19	Return to Storage
JC48691-9.6	Secured Storage	Alfredo Crespo	08/11/17 07:59	Retrieve from Storage
JC48691-9.6	Alfredo Crespo	Secured Staging Area	08/11/17 07:59	Return to Storage
JC48691-9.6	Secured Staging Area	Rinku Patel	08/11/17 08:10	Retrieve from Storage
JC48691-9.6	Rinku Patel	Secured Storage	08/11/17 14:54	Return to Storage
JC48691-9.8	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-9.8	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument
JC48691-10.1	Secured Storage	Bridget Kelly	08/11/17 15:26	Retrieve from Storage
JC48691-10.1	Bridget Kelly	GCMST	08/11/17 15:26	Load on Instrument

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9285-MB	T226121.D	1	08/11/17	PR	n/a	n/a	VT9285

The QC reported here applies to the following samples: **Method:** EPA 624

JC48691-1, JC48691-2, JC48691-3, JC48691-4, JC48691-5, JC48691-6, JC48691-7, JC48691-8, JC48691-9, JC48691-10

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%	76-122%
2037-26-5	Toluene-D8 (SUR)	98%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%	80-120%
1868-53-7	Dibromofluoromethane (S)	92%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.76	35	ug/l	J
124-38-9	system artifact-Carbon dioxide	3.92	88	ug/l	JN
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9285-BS	T226140.D	1	08/11/17	PR	n/a	n/a	VT9285

The QC reported here applies to the following samples: **Method:** EPA 624

JC48691-1, JC48691-2, JC48691-3, JC48691-4, JC48691-5, JC48691-6, JC48691-7, JC48691-8, JC48691-9, JC48691-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	18.3	92	72-115
156-60-5	trans-1,2-Dichloroethene	20	19.8	99	70-121
540-59-0	1,2-Dichloroethene (total)	40	38.1	95	72-117
79-01-6	Trichloroethene	20	19.2	96	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	111%	76-122%
2037-26-5	Toluene-D8 (SUR)	102%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%	80-120%
1868-53-7	Dibromofluoromethane (S)	95%	80-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48691-1MS	T226128.D	1	08/11/17	PR	n/a	n/a	VT9285
JC48691-1MSD	T226129.D	1	08/11/17	PR	n/a	n/a	VT9285
JC48691-1	T226124.D	1	08/11/17	PR	n/a	n/a	VT9285

The QC reported here applies to the following samples: **Method:** EPA 624

JC48691-1, JC48691-2, JC48691-3, JC48691-4, JC48691-5, JC48691-6, JC48691-7, JC48691-8, JC48691-9, JC48691-10

CAS No.	Compound	JC48691-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	16.1		20	34.4	92	20	33.9	89	1	50-134/14
156-60-5	trans-1,2-Dichloroethene	ND		20	20.2	101	20	21.2	106	5	63-129/18
540-59-0	1,2-Dichloroethene (total)	16.1		40	54.7	97	40	55.1	98	1	48-138/15
79-01-6	Trichloroethene	29.0		20	49.0	100	20	49.5	103	1	46-145/12

CAS No.	Surrogate Recoveries	MS	MSD	JC48691-1	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	107%	111%	108%	76-122%
2037-26-5	Toluene-D8 (SUR)	100%	101%	100%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%	101%	100%	80-120%
1868-53-7	Dibromofluoromethane (S)	94%	93%	94%	80-120%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-BFB
Lab File ID: T225627.D
Instrument ID: GCMST
Injection Date: 07/18/17
Injection Time: 12:47

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12312	16.8		Pass
75	30.0 - 60.0% of mass 95	33247	45.3		Pass
95	Base peak, 100% relative abundance	73386	100.0		Pass
96	5.0 - 9.0% of mass 95	5073	6.91		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	61066	83.2		Pass
175	5.0 - 9.0% of mass 174	4804	6.55	(7.87) [a]	Pass
176	95.0 - 101.0% of mass 174	59432	81.0	(97.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4054	5.52	(6.82) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9264-IC9264	T225628.D	07/18/17	14:43	01:56	Initial cal 0.5
VT9264-IC9264	T225630.D	07/18/17	15:43	02:56	Initial cal 1
VT9264-IC9264	T225631.D	07/18/17	16:14	03:27	Initial cal 2
VT9264-IC9264	T225632.D	07/18/17	16:44	03:57	Initial cal 5
VT9264-ICC9264	T225633.D	07/18/17	17:14	04:27	Initial cal 20
VT9264-IC9264	T225634.D	07/18/17	17:44	04:57	Initial cal 50
VT9264-IC9264	T225635.D	07/18/17	18:15	05:28	Initial cal 100
VT9264-IC9264	T225636.D	07/18/17	18:45	05:58	Initial cal 200
VT9264-ICV9264	T225639.D	07/18/17	20:16	07:29	Initial cal verification 20
VT9264-ICV9264	T225640.D	07/18/17	20:46	07:59	Initial cal verification 20
VT9264-ICV9264	T225642.D	07/18/17	22:06	09:19	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9285-BFB
Lab File ID: T226119.D
Instrument ID: GCMST
Injection Date: 08/11/17
Injection Time: 12:58

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	10166	16.3		Pass
75	30.0 - 60.0% of mass 95	29416	47.1		Pass
95	Base peak, 100% relative abundance	62501	100.0		Pass
96	5.0 - 9.0% of mass 95	4096	6.55		Pass
173	Less than 2.0% of mass 174	255	0.41	(0.48) [a]	Pass
174	50.0 - 120.0% of mass 95	53640	85.8		Pass
175	5.0 - 9.0% of mass 174	3962	6.34	(7.39) [a]	Pass
176	95.0 - 101.0% of mass 174	51010	81.6	(95.1) [a]	Pass
177	5.0 - 9.0% of mass 176	3503	5.60	(6.87) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9285-CC9264	T226120.D	08/11/17	13:28	00:30	Continuing cal 20
VT9285-MB	T226121.D	08/11/17	13:58	01:00	Method Blank
JC48691-1	T226124.D	08/11/17	15:31	02:33	I-1
JC48691-2	T226125.D	08/11/17	16:01	03:03	I-2
JC48691-3	T226126.D	08/11/17	16:31	03:33	I-3
JC48691-4	T226127.D	08/11/17	17:02	04:04	I-4
JC48691-1MS	T226128.D	08/11/17	17:32	04:34	Matrix Spike
JC48691-1MSD	T226129.D	08/11/17	18:02	05:04	Matrix Spike Duplicate
JC48691-10	T226131.D	08/11/17	19:02	06:04	TRIP BLANK
JC48691-5	T226132.D	08/11/17	19:32	06:34	INFLUENT
JC48691-6	T226133.D	08/11/17	20:02	07:04	EFFLUENT
JC48691-7	T226134.D	08/11/17	20:32	07:34	RIVOUT
JC48691-8	T226135.D	08/11/17	21:02	08:04	W-6
JC48691-9	T226136.D	08/11/17	21:33	08:35	W-12
ZZZZZZ	T226137.D	08/11/17	22:03	09:05	(unrelated sample)
ZZZZZZ	T226139.D	08/11/17	23:03	10:05	(unrelated sample)
VT9285-BS	T226140.D	08/11/17	23:33	10:35	Blank Spike
ZZZZZZ	T226141.D	08/12/17	00:33	11:35	(unrelated sample)
ZZZZZZ	T226142.D	08/12/17	01:03	12:05	(unrelated sample)
ZZZZZZ	T226143.D	08/12/17	01:33	12:35	(unrelated sample)
ZZZZZZ	T226144.D	08/12/17	02:03	13:05	(unrelated sample)
ZZZZZZ	T226145.D	08/12/17	02:33	13:35	(unrelated sample)
ZZZZZZ	T226146.D	08/12/17	03:03	14:05	(unrelated sample)
ZZZZZZ	T226147.D	08/12/17	03:33	14:35	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VT9285-BFB	**Injection Date:**	08/11/17
Lab File ID:	T226119.D	**Injection Time:**	12:58
Instrument ID:	GCMST		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	T226148.D	08/12/17	04:03	15:05	(unrelated sample)
ZZZZZZ	T226149.D	08/12/17	04:33	15:35	(unrelated sample)

Volatile Internal Standard Area Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std:	VT9285-CC9264	**Injection Date:**	08/11/17
Lab File ID:	T226120.D	**Injection Time:**	13:28
Instrument ID:	GCMST	**Method:**	EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	91655	7.45	158575	9.48	226357	10.33	167507	16.09	224084	13.54
Upper Limit [a]	183310	7.95	317150	9.98	452714	10.83	335014	16.59	448168	14.04
Lower Limit [b]	45828	6.95	79288	8.98	113179	9.83	83754	15.59	112042	13.04

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VT9285-MB	94774	7.44	154652	9.48	223491	10.34	173902	16.09	226570	13.54
JC48691-1	84128	7.45	156227	9.48	221452	10.34	165986	16.09	223943	13.54
JC48691-2	94509	7.44	161960	9.47	232260	10.34	178773	16.09	230109	13.55
JC48691-3	94302	7.44	151628	9.47	220896	10.34	172632	16.09	220946	13.54
JC48691-4	99207	7.44	159779	9.48	231800	10.34	177563	16.09	234036	13.54
JC48691-1MS	100359	7.46	162361	9.48	238462	10.34	177193	16.09	237366	13.54
JC48691-1MSD	104072	7.45	162747	9.48	240635	10.34	175742	16.09	236024	13.54
JC48691-10	101227	7.45	162065	9.48	239195	10.33	186319	16.09	241436	13.54
JC48691-5	105729	7.45	166253	9.48	238100	10.34	184795	16.09	241961	13.54
JC48691-6	107477	7.44	166151	9.48	242148	10.34	186260	16.09	245145	13.55
JC48691-7	101572	7.44	167351	9.48	242053	10.34	181290	16.09	244945	13.55
JC48691-8	102436	7.44	166981	9.48	242842	10.34	188886	16.09	245818	13.54
JC48691-9	105320	7.45	168742	9.48	243554	10.34	186444	16.09	243793	13.54
ZZZZZZ	105768	7.44	169083	9.48	249023	10.34	185235	16.08	243526	13.54
ZZZZZZ	103681	7.44	164436	9.48	242797	10.34	188027	16.09	244446	13.54
VT9285-BS	108444	7.45	172327	9.48	251288	10.34	193787	16.09	255449	13.54
ZZZZZZ	109562	7.45	174999	9.47	256596	10.34	192286	16.09	250057	13.54
ZZZZZZ	107231	7.44	172098	9.47	254983	10.34	194285	16.09	258654	13.54
ZZZZZZ	109559	7.45	174757	9.48	261145	10.34	197004	16.09	263746	13.54
ZZZZZZ	116477	7.45	176882	9.48	262225	10.34	201348	16.08	261228	13.54
ZZZZZZ	111631	7.44	174478	9.48	259378	10.33	200534	16.08	264361	13.54
ZZZZZZ	112133	7.44	172892	9.48	258756	10.34	192099	16.08	254137	13.54
ZZZZZZ	100577	7.45	170565	9.48	250173	10.34	193557	16.08	252781	13.54
ZZZZZZ	119125	7.45	181494	9.48	264994	10.34	204159	16.09	267701	13.55
ZZZZZZ	116592	7.45	176778	9.48	254481	10.34	199068	16.09	256394	13.54

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC48691-1	T226124.D	108	100	100	94
JC48691-2	T226125.D	107	100	97	92
JC48691-3	T226126.D	109	100	99	93
JC48691-4	T226127.D	109	99	99	93
JC48691-5	T226132.D	107	99	97	92
JC48691-6	T226133.D	108	100	100	94
JC48691-7	T226134.D	110	99	100	91
JC48691-8	T226135.D	108	99	98	94
JC48691-9	T226136.D	111	100	97	94
JC48691-10	T226131.D	108	98	98	95
JC48691-1MS	T226128.D	107	100	101	94
JC48691-1MSD	T226129.D	111	101	101	93
VT9285-BS	T226140.D	111	102	97	95
VT9285-MB	T226121.D	104	98	99	92

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4 (SUR)	76-122%
S2 = Toluene-D8 (SUR)	80-120%
S3 = 4-Bromofluorobenzene (SUR)	80-120%
S4 = Dibromofluoromethane (S)	80-120%

Initial Calibration Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICC9264
Lab FileID: T225633.D

Response Factor Report GCMST

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

Calibration Files
5 =T225632.D 20 =T225633.D 50 =T225634.D 100 =T225635.D
200 =T225636.D 2 =T225631.D 1 =T225630.D 0.5 =T225628.D

Compound	5	20	50	100	200	2	1	0.5	Avg	%RSD
1) TERT BUTYL ALCOHOL-d9	----------ISTD----------									
2) TERTIARY BUT	1.417	1.180	1.125	1.123	1.182	1.451			1.246	11.87
3) 1,4-DIOXANE	0.100	0.085	0.090	0.091	0.094	0.093	0.096		0.093	5.10
4) PENTAFLUOROBENZENE	----------ISTD----------									
5) CHLORODIFLUO	1.269	1.315	1.175	1.219	1.215	1.166	1.058		1.202	6.84
6) DICHLORODIFL	1.398	1.365	1.202	1.202	1.107	1.352	1.182		1.258	8.87
7) FREON 143A	1.606	1.535	1.368	1.413	1.299	1.296	1.245	1.257	1.377	9.64
8) FREON 142B	0.919	0.943	0.892	0.947	0.902	0.771	0.829		0.886	7.24
9) CHLOROMETHAN	1.290	1.228	1.130	1.167	1.132	1.250	1.159		1.194	5.24
10) VINYL CHLORI	1.320	1.310	1.214	1.239	1.195	1.275	1.202	1.442	1.275	6.49
11) BROMOMETHANE	0.765	0.741	0.680	0.659	0.543	0.673	0.819		0.697	12.75
12) CHLOROETHANE	0.626	0.603	0.558	0.548	0.515	0.622	0.606		0.583	7.27
13) VINYL BROMID	0.861	0.830	0.754	0.763	0.756	0.872	0.794	0.865	0.812	6.30
14) TRICHLOROFLU	1.162	1.113	0.997	1.020	0.977	1.125	0.963	1.079	1.055	7.12
15) PENTANE	0.872	0.867	0.782	0.764	0.719	0.865	0.833	0.990	0.836	9.97
16) FREON 141B	0.826	0.838	0.807	0.813	0.796	0.676	0.706	0.704	0.771	8.33
17) ETHYL ETHER	0.240	0.245	0.248	0.236	0.234	0.210	0.239		0.236	5.26
18) 1,1-DICHLORO	0.860	0.789	0.737	0.747	0.718	0.798	0.742	0.667	0.757	7.67
19) FREON 113	0.587	0.570	0.534	0.544	0.530	0.515	0.457	0.397	0.517	12.00
20) ACROLEIN	0.114	0.088	0.085	0.080	0.084	0.111			0.094	15.79
21) ACETONE	0.036	0.034	0.034	0.032	0.032	0.037	0.041		0.035	8.76
22) CARBON DISUL	2.003	1.895	1.777	1.812	1.701	1.888	1.614	1.586	1.785	8.11
23) IODOMETHANE	0.973	0.961	0.899	0.917	0.894	0.898	0.713		0.893	9.59
24) ACETONITRILE	0.064	0.060	0.056	0.054	0.054	0.059	0.048		0.056	9.09
25) METHYL ACETA	0.277	0.269	0.274	0.255	0.252				0.265	4.29
26) METHYLENE CH	0.565	0.550	0.508	0.498	0.486	0.536	0.510	0.509	0.520	5.21
27) ACRYLONITRIL	0.157	0.162	0.148	0.143	0.143	0.145	0.150		0.150	4.88
28) METHYL TERT	1.741	1.752	1.670	1.679	1.661	1.659	1.580	1.816	1.695	4.28
29) trans-1,2-DI	0.709	0.682	0.660	0.662	0.646	0.638	0.558	0.494	0.631	11.16
30) HEXANE	0.734	0.691	0.664	0.644	0.625	0.631	0.629	0.603	0.653	6.50
31) 1,1-DICHLORO	0.869	0.856	0.836	0.827	0.811	0.779	0.697	0.747	0.803	7.27
32) VINYL ACETAT	0.086	0.080	0.079	0.076	0.080				0.080	4.53
33) DI-ISOPROPYL	1.979	1.948	1.873	1.865	1.838	1.843	1.892	2.022	1.907	3.54
34) ETHYL TERT B	1.933	1.945	1.897	1.908	1.899	1.664	1.536	1.682	1.808	8.65
35) 2-BUTANONE	0.045	0.042	0.043	0.041	0.042	0.043	0.052	0.046	0.044	7.66
36) cis-1,2-DICH	0.564	0.535	0.510	0.507	0.502	0.551	0.575	0.432	0.522	8.70
37) 2,2-DICHLORO	1.039	0.974	0.911	0.937	0.924	0.941	0.957		0.955	4.45
38) ETHYL ACETAT	0.064	0.054	0.062	0.059	0.054				0.058	8.13
39) BROMOCHLOROM	0.248	0.238	0.237	0.234	0.237	0.235	0.198	0.195	0.228	8.63
40) TETRAHYDROFU	0.242	0.164	0.150	0.131	0.131	0.452			0.212	58.86
This compound does not meet initial calibration criteria										
----- Linear regression ----- Coefficient = 0.9994										
Response Ratio = 0.02401 + 0.12691 *A										
41) CHLOROFORM	0.862	0.821	0.792	0.784	0.779	0.780	0.796	0.949	0.820	7.18

Initial Calibration Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICC9264
Lab FileID: T225633.D

42)	t-BUTYL FORM	0.408	0.391	0.378	0.381	0.394	0.329	0.359	0.319	0.370	8.58
43)	1,1,1-TRICHL	0.970	0.948	0.917	0.945	0.944	0.850	0.776	0.716	0.883	10.56
44)	CYCLOHEXANE	1.062	1.017	0.944	0.958	1.039	0.897			0.986	6.41
45)	DIBROMOFLUOR	0.479	0.472	0.475	0.473	0.477	0.501	0.484	0.469	0.479	2.13
46)	1,1-DICHLORO	0.607	0.606	0.612	0.609	0.614	0.500	0.541	0.499	0.574	8.96
47)	CARBON TETRA	0.852	0.824	0.809	0.835	0.839	0.729	0.707		0.799	7.19
48)	ISOPROPYL AC	0.098	0.091	0.091	0.089	0.094	0.074	0.100		0.091	9.12
49)	1,4-DIFLUOROBENZENE	----------	ISTD	----------							
50)	1,2-DICHLORO	0.317	0.313	0.306	0.307	0.305	0.321	0.321	0.321	0.314	2.25
51)	BENZENE	1.285	1.259	1.238	1.223	1.171	1.133	1.114	1.080	1.188	6.26
52)	1,2-DICHLORO	0.354	0.348	0.338	0.332	0.331	0.303	0.315	0.303	0.328	5.88
53)	2,2,4-TRIMET	1.474	1.503	1.425	1.499	1.515	1.233			1.442	7.42
54)	TERT-AMYL ME	1.267	1.242	1.201	1.213	1.194	1.077	1.131	1.215	1.192	5.12
55)	HEPTANE	0.276	0.265	0.252	0.248	0.245	0.231	0.253	0.236	0.251	5.87
56)	TRICHLOROETH	0.314	0.299	0.301	0.297	0.298	0.277	0.248	0.279	0.289	7.09
57)	1,2-DICHLORO	0.360	0.348	0.346	0.341	0.338	0.297	0.297	0.298	0.328	8.02
58)	DIBROMOMETHA	0.185	0.177	0.175	0.172	0.170	0.157	0.165	0.166	0.171	4.99
59)	METHYL METHA	0.064	0.068	0.071	0.067	0.068	0.071			0.068	3.93
60)	METHYLCYCLOH	0.761	0.749	0.714	0.749	0.726	0.634			0.722	6.43
61)	BROMODICHLOR	0.415	0.408	0.402	0.400	0.397	0.373	0.374	0.383	0.394	3.97
62)	2-CHLOROETHY	0.106	0.103	0.104	0.101	0.103	0.090	0.106	0.109	0.103	5.59
63)	EPICHLOROHYD	0.029	0.026	0.025	0.024	0.024	0.028			0.026	7.07
64)	cis-1,3-DICH	0.517	0.512	0.507	0.494	0.493	0.442	0.506	0.486	0.495	4.81
65)	4-METHYL-2-P	0.136	0.123	0.120	0.117	0.115	0.133	0.162		0.129	12.63
66)	I CHLOROBENZENE-D5	----------	ISTD	----------							
67)	TOLUENE-d8	1.242	1.266	1.251	1.279	1.262	1.249	1.237	1.262	1.256	1.11
68)	TOLUENE	0.810	0.780	0.768	0.772	0.757	0.686	0.645	0.632	0.731	9.17
69)	ETHYL METHAC	0.416	0.408	0.395	0.384	0.385	0.406	0.541		0.419	13.17
70)	trans-1,3-DI	0.470	0.455	0.448	0.432	0.428	0.445	0.524	0.523	0.466	8.13
71)	1,1,2-TRICHL	0.248	0.230	0.223	0.214	0.215	0.217	0.294	0.240	0.235	11.28
72)	TETRACHLOROE	0.277	0.267	0.263	0.269	0.271	0.228	0.239	0.245	0.257	6.88
73)	2-HEXANONE	0.134	0.111	0.110	0.101	0.101	0.131	0.162	0.147	0.125	18.14
74)	1,3-DICHLORO	0.473	0.455	0.433	0.425	0.418	0.398	0.486		0.441	7.12
75)	BUTYL ACETAT	0.238	0.212	0.200	0.188	0.193	0.243			0.212	10.93
76)	3,3-DIMETHYL	0.052	0.045	0.043	0.043	0.044	0.055	0.074		0.051	21.89
77)	DIBROMOCHLOR	0.354	0.329	0.313	0.310	0.312	0.311	0.400	0.348	0.335	9.40
78)	ETHYLENE DIB	0.279	0.271	0.258	0.256	0.258	0.244	0.320	0.250	0.267	9.05
79)	CHLOROBENZEN	0.984	0.921	0.895	0.891	0.880	0.868	0.937	0.849	0.903	4.77
80)	1,1,1,2-TETR	0.462	0.429	0.416	0.425	0.441	0.409	0.486	0.428	0.437	5.88
81)	ETHYLBENZENE	1.723	1.646	1.592	1.571	1.484	1.508	1.586	1.534	1.580	4.88
82)	m,p-XYLENE	0.664	0.631	0.614	0.606	0.593	0.549	0.592	0.522	0.596	7.50
83)	o-XYLENE	1.632	1.509	1.454	1.459	1.386	1.415	1.495	1.537	1.486	5.16
84)	STYRENE	1.134	1.082	1.053	1.036	1.031	1.020	1.155	1.003	1.064	5.16
85)	n-AMYL ACETA	0.258	0.265	0.257	0.245	0.249	0.264	0.280	0.283	0.263	5.13
86)	BROMOFORM	0.260	0.236	0.228	0.223	0.235	0.257	0.301	0.264	0.250	10.23
87)	CUMENE	2.080	2.018	1.931	1.928	1.782	1.782	1.873	1.727	1.890	6.49
88)	cis-1,4-DICH	0.123	0.115	0.113	0.110	0.117	0.126	0.173		0.125	17.33
89)	1,4-DICHLOROBENZENE-D	----------	ISTD	----------							
90)	4-BROMOFLUOR	0.619	0.620	0.636	0.633	0.612	0.622	0.623	0.638	0.625	1.49
91)	1,1,2,2-TETR	0.669	0.604	0.590	0.555	0.521	0.753	0.900		0.656	20.15
92)	trans-1,4-DI	0.155	0.130	0.137	0.122	0.118				0.133	11.04
93)	1,2,3-TRICHL	0.177	0.146	0.145	0.133	0.128	0.180	0.231		0.163	22.14
94)	N-PROPYLBENZ	3.398	3.213	3.204	3.029	2.522	2.914	3.318	2.913	3.064	9.21
95)	BROMOBENZENE	0.704	0.634	0.641	0.615	0.597	0.637	0.831	0.781	0.680	12.47
96)	2-CHLOROTOLU	0.689	0.665	0.674	0.661	0.634	0.599	0.703	0.697	0.665	5.25
97)	4-CHLOROTOLU	1.995	1.867	1.855	1.779	1.673	1.833	2.162	2.025	1.899	8.14
98)	1,3,5-TRIMET	2.701	2.638	2.688	2.601	2.269	2.279	2.551	2.337	2.508	7.32

Initial Calibration Summary

Job Number: JC48691
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Sample: VT9264-ICC9264
Lab FileID: T225633.D

99)	TERT-BUTYLBE	2.155	2.160	2.280	2.258	2.069	1.802	2.003	1.828	2.069	8.75
100)	1,2,4-TRIMET	2.991	2.801	2.789	2.726	2.364	2.585	2.970	2.532	2.720	7.96
101)	SEC-BUTYLBEN	3.747	3.678	3.735	3.550	2.887	3.046	3.471	2.961	3.384	10.69
102)	P-ISOPROPYLT	3.223	3.154	3.220	3.087	2.620	2.755	3.003	2.676	2.967	8.35
103)	1,3-DICHLORO	1.617	1.506	1.467	1.435	1.376	1.497	1.768	1.722	1.549	9.03
104)	1,4-DICHLORO	1.702	1.509	1.498	1.453	1.394	1.541	1.757	1.752	1.576	8.97
105)	N-BUTYLBENZE	0.911	0.866	0.850	0.839	0.817	0.774	0.867	0.815	0.842	4.93
106)	1,2-DICHLORO	1.799	1.650	1.619	1.548	1.472	1.670	2.010	1.815	1.698	10.06
107)	HEXACHLOROET	0.357	0.361	0.392	0.408	0.417	0.301	0.347	0.321	0.363	11.22
108)	1,2-DIBROMO-	0.195	0.173	0.173	0.168	0.161	0.230			0.183	13.90
109)	HEXACHLOROBU	0.936	0.882	0.897	0.865	0.834	0.744	0.904	0.839	0.863	6.82
110)	1,3,5-TRICHL	2.105	1.970	2.003	1.893	1.708	1.754	2.019	1.869	1.915	7.08
111)	NITROBENZENE	0.067	0.053	0.056	0.054	0.056	0.105			0.065	31.35
112)	1,2,4-TRICHL	1.578	1.526	1.580	1.487	1.348	1.324	1.581	1.463	1.486	6.90
113)	1,2,3-TRICHL	1.126	1.107	1.169	1.109	1.017	0.974	1.165	1.164	1.104	6.53
114)	NAPHTHALENE	2.590	2.403	2.537	2.380	2.052	2.299	2.813	2.720	2.474	9.86
115)	INDANE	2.592	2.827	2.782	2.655	2.301	2.555	2.482	2.823	2.627	7.00
116)	ETHYLENIMINE									0.000	-1.00
117)	BIS(CHLOROME									0.000	-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

MT9264.M Thu Jul 20 14:58:42 2017 MSDT

Initial Calibration Verification

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICV9264
Lab FileID: T225639.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T225639.D Vial: 14
Acq On : 18 Jul 2017 8:16 pm Operator: payalr
Sample : icv9264-20 Inst : GCMST
Misc : MS18159,VT9264,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jul 20 14:57:09 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	102	0.00	7.45
2	M	TERTIARY BUTYL ALCOHOL	1.246	1.175	5.7	102	0.00	7.55
3	M	1,4-DIOXANE	0.093	0.090	3.2	108	0.00	11.03
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	106	0.00	9.48
5		CHLORODIFLUOROMETHANE	1.202	1.018	15.3	82	0.00	4.39
6	M	DICHLORODIFLUOROMETHANE	1.258	1.062	15.6	83	-0.01	4.38
7	M	FREON 143A	1.377	0.712	48.3#	49#	0.00	4.04
8	M	FREON 142B	0.886	0.896	-1.1	101	0.00	4.64
9	M	CHLOROMETHANE	1.194	1.001	16.2	87	0.00	4.71
10	M	VINYL CHLORIDE	1.275	1.084	15.0	88	0.00	4.96
11	M	BROMOMETHANE	0.697	0.630	9.6	90	0.00	5.58
12	M	CHLOROETHANE	0.583	0.540	7.4	95	0.00	5.74
13		VINYL BROMIDE	0.812	0.704	13.3	90	0.00	6.06
14	M	TRICHLOROFLUOROMETHANE	1.055	0.871	17.4	83	-0.01	6.16
15	M	PENTANE	0.836	0.964	-15.3	118	0.00	6.25
16	M	FREON 141B	0.771	0.735	4.7	93	0.00	6.54
17		ETHYL ETHER	0.236	0.237	-0.4	103	0.00	6.52
18	M	1,1-DICHLOROETHYLENE	0.757	0.728	3.8	98	0.00	6.91
19	M	FREON 113	0.517	0.599	-15.9	112	0.00	6.90
20		ACROLEIN	0.094	0.077	18.1	93	0.00	6.74
21	M	ACETONE	0.035	0.031	11.4	95	0.00	6.94
22	M	CARBON DISULFIDE	1.785	2.084	-16.8	117	0.00	7.29
23	M	IODOMETHANE	0.893	0.868	2.8	96	0.00	7.17
24		ACETONITRILE	0.056	0.048	14.3	85	0.00	7.31
25		METHYL ACETATE	0.265	0.244	7.9	96	0.00	7.33
26	M	METHYLENE CHLORIDE	0.520	0.506	2.7	98	0.00	7.53
27	M	ACRYLONITRILE	0.150	0.165	-10.0	109	0.00	7.80
28	M	METHYL TERT BUTYL ETHER	1.695	1.679	0.9	102	0.00	7.84
29	M	trans-1,2-DICHLOROETHYLEN	0.631	0.641	-1.6	100	0.00	7.87
30	M	HEXANE	0.653	0.491	24.8	76	0.00	8.16
31	M	1,1-DICHLOROETHANE	0.803	0.820	-2.1	102	0.00	8.37
32	M	VINYL ACETATE	0.080	0.075	6.3	99	0.00	8.34
33	M	DI-ISOPROPYL ETHER	1.907	1.820	4.6	99	0.00	8.36
34	M	ETHYL TERT BUTYL ETHER	1.808	1.807	0.1	99	0.00	8.77
35	M	2-BUTANONE	0.044	0.038	13.6	97	0.00	8.99
36	M	cis-1,2-DICHLOROETHYLENE	0.522	0.505	3.3	101	0.00	9.03
37	M	2,2-DICHLOROPROPANE	0.955	0.877	8.2	96	0.00	9.06
38	M	ETHYL ACETATE	0.058	0.055	5.2	108	0.00	8.99
39		BROMOCHLOROMETHANE	0.228	0.230	-0.9	103	0.00	9.31

---------- True Calc. % Drift ----------

Initial Calibration Verification

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICV9264
Lab FileID: T225639.D

40	M	TETRAHYDROFURAN	20.000	18.869	5.7	101	0.00	9.35
			AvgRF	CCRF	% Dev			
41	M	CHLOROFORM	0.820	0.785	4.3	102	0.00	9.35
42		t-BUTYL FORMATE	0.370	0.366	1.1	100	0.00	9.41
43	M	1,1,1-TRICHLOROETHANE	0.883	0.897	-1.6	101	0.00	9.62
44		CYCLOHEXANE	0.986	0.668	32.3	70	0.00	9.71
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.470	1.9	106	0.00	9.53
46		1,1-DICHLOROPROPENE	0.574	0.585	-1.9	103	0.00	9.78
47		CARBON TETRACHLORIDE	0.799	0.784	1.9	101	0.00	9.82
48		ISOPROPYL ACETATE	0.091	0.088	3.3	103	0.00	9.91
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	105	0.00	10.35
50	S	1,2-DICHLOROETHANE-d4	0.314	0.325	-3.5	109	0.00	9.93
51	M	BENZENE	1.188	1.236	-4.0	103	0.00	10.03
52	M	1,2-DICHLOROETHANE	0.328	0.339	-3.4	102	0.00	10.02
53		2,2,4-TRIMETHYLPENTANE	1.442	1.297	10.1	90	0.00	10.04
54	M	TERT-AMYL METHYL ETHER	1.192	1.179	1.1	99	0.00	10.05
55	M	HEPTANE	0.251	0.252	-0.4	100	0.00	10.18
56	M	TRICHLOROETHYLENE	0.289	0.296	-2.4	104	0.00	10.68
57	M	1,2-DICHLOROPROPANE	0.328	0.346	-5.5	104	0.00	10.94
58	M	DIBROMOMETHANE	0.171	0.176	-2.9	104	0.00	11.07
59		METHYL METHACRYLATE	0.068	0.068	0.0	105	0.00	10.91
60		METHYLCYCLOHEXANE	0.722	0.655	9.3	92	0.00	10.93
61	M	BROMODICHLOROMETHANE	0.394	0.400	-1.5	103	0.00	11.19
62	M	2-CHLOROETHYL VINYL ETHER	0.103	0.112	-8.7	113	0.00	11.42
63	M	EPICHLOROHYDRIN	0.026	0.024	7.7	97	0.00	11.54
64	M	cis-1,3-DICHLOROPROPENE	0.495	0.501	-1.2	103	0.00	11.65
65	M	4-METHYL-2-PENTANONE	0.129	0.106	17.8	91	0.00	11.75
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	105	0.00	13.55
67	S	TOLUENE-d8	1.256	1.270	-1.1	106	0.00	11.97
68		TOLUENE	0.731	0.785	-7.4	106	0.00	12.04
69		ETHYL METHACRYLATE	0.419	0.376	10.3	97	0.00	12.21
70		trans-1,3-DICHLOROPROPENE	0.466	0.445	4.5	103	0.00	12.21
71		1,1,2-TRICHLOROETHANE	0.235	0.219	6.8	101	0.00	12.44
72	M	TETRACHLOROETHYLENE	0.257	0.270	-5.1	106	0.00	12.65
73	M	2-HEXANONE	0.125	0.097	22.4	92	0.00	12.63
74		1,3-DICHLOROPROPANE	0.441	0.442	-0.2	102	0.00	12.64
75	M	BUTYL ACETATE	0.212	0.199	6.1	99	0.00	12.69
76		3,3-DIMETHYL-1-BUTANOL	0.051	0.044	13.7	103	0.00	12.78
77	M	DIBROMOCHLOROMETHANE	0.335	0.314	6.3	101	0.00	12.91
78	M	ETHYLENE DIBROMIDE	0.267	0.269	-0.7	105	0.00	13.09
79	M	CHLOROBENZENE	0.903	0.911	-0.9	104	0.00	13.58
80	M	1,1,1,2-TETRACHLOROETHANE	0.437	0.429	1.8	105	0.00	13.65
81	M	ETHYLBENZENE	1.580	1.584	-0.3	101	0.00	13.65
82	M	m,p-XYLENE	0.596	0.615	-3.2	103	0.00	13.76
83	M	o-XYLENE	1.486	1.456	2.0	102	0.00	14.22
84	M	STYRENE	1.064	1.045	1.8	102	0.00	14.22
85		n-AMYL ACETATE	0.263	0.266	-1.1	106	0.00	14.24
86	M	BROMOFORM	0.250	0.230	8.0	103	0.00	14.50
87	M	CUMENE	1.890	1.971	-4.3	103	0.00	14.60
88		cis-1,4-DICHLORO-2-BUTENE	0.125	0.112	10.4	103	0.00	14.64
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	107	0.00	16.09
90	S	4-BROMOFLUOROBENZENE	0.625	0.627	-0.3	109	0.00	14.81
91		1,1,2,2-TETRACHLOROETHANE	0.656	0.574	12.5	102	0.00	14.90
92		trans-1,4-DICHLORO-2-BUTE	0.133	0.128	3.8	106	0.00	14.95
93		1,2,3-TRICHLOROPROPANE	0.163	0.137	16.0	100	0.00	14.99
94		N-PROPYLBENZENE	3.064	3.101	-1.2	104	0.00	15.05

Initial Calibration Verification

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICV9264
Lab FileID: T225639.D

95		BROMOBENZENE	0.680	0.618	9.1	105	0.00	15.03
96		2-CHLOROTOLUENE	0.665	0.646	2.9	104	0.00	15.20
97		4-CHLOROTOLUENE	1.899	1.809	4.7	104	0.00	15.31
98	M	1,3,5-TRIMETHYLBENZENE	2.508	2.556	-1.9	104	0.00	15.21
99		TERT-BUTYLBENZENE	2.069	2.086	-0.8	104	0.00	15.60
100	M	1,2,4-TRIMETHYLBENZENE	2.720	2.719	0.0	104	0.00	15.64
101		SEC-BUTYLBENZENE	3.384	3.496	-3.3	102	0.00	15.84
102		P-ISOPROPYLTOLUENE	2.967	3.039	-2.4	103	0.00	15.97
103	M	1,3-DICHLOROBENZENE	1.549	1.495	3.5	107	0.00	16.04
104	M	1,4-DICHLOROBENZENE	1.576	1.498	4.9	107	0.00	16.12
105		N-BUTYLBENZENE	0.842	0.835	0.8	103	0.00	16.42
106	M	1,2-DICHLOROBENZENE	1.698	1.631	3.9	106	0.00	16.56
107		HEXACHLOROETHANE	0.363	0.356	1.9	106	0.00	16.86
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.183	0.174	4.9	108	0.00	17.39
109		HEXACHLOROBUTADIENE	0.863	0.875	-1.4	106	0.00	18.44
110		1,3,5-TRICHLOROBENZENE	1.915	1.864	2.7	102	0.00	17.60
111		NITROBENZENE	0.065	0.052	20.0	105	0.00	17.62
112	M	1,2,4-TRICHLOROBENZENE	1.486	1.496	-0.7	105	0.00	18.30
113		1,2,3-TRICHLOROBENZENE	1.104	1.074	2.7	104	0.00	18.89
114	M	NAPHTHALENE	2.474	2.331	5.8	104	0.00	18.61
115	M	INDANE	2.627	2.434	7.3	92	0.00	16.40
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T225633.D MT9264.M Thu Jul 20 14:58:26 2017 MSDT

Initial Calibration Verification

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICV9264
Lab FileID: T225640.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T225640.D Vial: 15
Acq On : 18 Jul 2017 8:46 pm Operator: payalr
Sample : icv9264-20 Inst : GCMST
Misc : MS18159,VT9264,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Tue Jul 18 20:41:12 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	97	0.00	7.45
2	M	TERTIARY BUTYL ALCOHOL		----------NA----------				
3	M	1,4-DIOXANE		----------NA----------				
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	104	0.00	9.48
5		CHLORODIFLUOROMETHANE		----------NA----------				
6	M	DICHLORODIFLUOROMETHANE		----------NA----------				
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE		----------NA----------				
10	M	VINYL CHLORIDE		----------NA----------				
11	M	BROMOMETHANE		----------NA----------				
12	M	CHLOROETHANE		----------NA----------				
13		VINYL BROMIDE		----------NA----------				
14	M	TRICHLOROFLUOROMETHANE		----------NA----------				
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER		----------NA----------				
18	M	1,1-DICHLOROETHYLENE		----------NA----------				
19	M	FREON 113		----------NA----------				
20		ACROLEIN		----------NA----------				
21	M	ACETONE		----------NA----------				
22	M	CARBON DISULFIDE		----------NA----------				
23	M	IODOMETHANE		----------NA----------				
24		ACETONITRILE	0.056	0.052	7.1	90	0.00	7.31
25		METHYL ACETATE		----------NA----------				
26	M	METHYLENE CHLORIDE		----------NA----------				
27	M	ACRYLONITRILE		----------NA----------				
28	M	METHYL TERT BUTYL ETHER		----------NA----------				
29	M	trans-1,2-DICHLOROETHYLEN		----------NA----------				
30	M	HEXANE		----------NA----------				
31	M	1,1-DICHLOROETHANE		----------NA----------				
32	M	VINYL ACETATE		----------NA----------				
33	M	DI-ISOPROPYL ETHER		----------NA----------				
34	M	ETHYL TERT BUTYL ETHER		----------NA----------				
35	M	2-BUTANONE		----------NA----------				
36	M	cis-1,2-DICHLOROETHYLENE		----------NA----------				
37	M	2,2-DICHLOROPROPANE		----------NA----------				
38	M	ETHYL ACETATE		----------NA----------				
39		BROMOCHLOROMETHANE		----------NA----------				

---------- True Calc. % Drift ----------

Initial Calibration Verification

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICV9264
Lab FileID: T225640.D

40	M	TETRAHYDROFURAN		----------NA----------					
		----------	AvgRF	CCRF	% Dev	----------			
41	M	CHLOROFORM		----------NA----------					
42		t-BUTYL FORMATE		----------NA----------					
43	M	1,1,1-TRICHLOROETHANE		----------NA----------					
44		CYCLOHEXANE		----------NA----------					
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.456	4.8	101	0.00	9.53	
46		1,1-DICHLOROPROPENE		----------NA----------					
47		CARBON TETRACHLORIDE		----------NA----------					
48		ISOPROPYL ACETATE		----------NA----------					
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	102	0.00	10.34	
50	S	1,2-DICHLOROETHANE-d4	0.314	0.307	2.2	100	0.00	9.93	
51	M	BENZENE		----------NA----------					
52	M	1,2-DICHLOROETHANE		----------NA----------					
53		2,2,4-TRIMETHYLPENTANE		----------NA----------					
54	M	TERT-AMYL METHYL ETHER		----------NA----------					
55	M	HEPTANE		----------NA----------					
56	M	TRICHLOROETHYLENE		----------NA----------					
57	M	1,2-DICHLOROPROPANE		----------NA----------					
58	M	DIBROMOMETHANE		----------NA----------					
59		METHYL METHACRYLATE		----------NA----------					
60		METHYLCYCLOHEXANE		----------NA----------					
61	M	BROMODICHLOROMETHANE		----------NA----------					
62	M	2-CHLOROETHYL VINYL ETHER		----------NA----------					
63	M	EPICHLOROHYDRIN		----------NA----------					
64	M	cis-1,3-DICHLOROPROPENE		----------NA----------					
65	M	4-METHYL-2-PENTANONE		----------NA----------					
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	104	0.00	13.55	
67	S	TOLUENE-d8	1.256	1.249	0.6	103	0.00	11.97	
68		TOLUENE		----------NA----------					
69		ETHYL METHACRYLATE		----------NA----------					
70		trans-1,3-DICHLOROPROPENE		----------NA----------					
71		1,1,2-TRICHLOROETHANE		----------NA----------					
72	M	TETRACHLOROETHYLENE		----------NA----------					
73	M	2-HEXANONE		----------NA----------					
74		1,3-DICHLOROPROPANE		----------NA----------					
75	M	BUTYL ACETATE		----------NA----------					
76		3,3-DIMETHYL-1-BUTANOL		----------NA----------					
77	M	DIBROMOCHLOROMETHANE		----------NA----------					
78	M	ETHYLENE DIBROMIDE		----------NA----------					
79	M	CHLOROBENZENE		----------NA----------					
80	M	1,1,1,2-TETRACHLOROETHANE		----------NA----------					
81	M	ETHYLBENZENE		----------NA----------					
82	M	m,p-XYLENE		----------NA----------					
83	M	o-XYLENE		----------NA----------					
84	M	STYRENE		----------NA----------					
85		n-AMYL ACETATE		----------NA----------					
86	M	BROMOFORM		----------NA----------					
87	M	CUMENE		----------NA----------					
88		cis-1,4-DICHLORO-2-BUTENE		----------NA----------					
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	112	0.00	16.10	
90	S	4-BROMOFLUOROBENZENE	0.625	0.608	2.7	109	0.00	14.81	
91		1,1,2,2-TETRACHLOROETHANE		----------NA----------					
92		trans-1,4-DICHLORO-2-BUTE		----------NA----------					
93		1,2,3-TRICHLOROPROPANE		----------NA----------					
94		N-PROPYLBENZENE		----------NA----------					

Initial Calibration Verification

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICV9264
Lab FileID: T225640.D

95		BROMOBENZENE	----------NA----------	
96		2-CHLOROTOLUENE	----------NA----------	
97		4-CHLOROTOLUENE	----------NA----------	
98	M	1,3,5-TRIMETHYLBENZENE	----------NA----------	
99		TERT-BUTYLBENZENE	----------NA----------	
100	M	1,2,4-TRIMETHYLBENZENE	----------NA----------	
101		SEC-BUTYLBENZENE	----------NA----------	
102		P-ISOPROPYLTOLUENE	----------NA----------	
103	M	1,3-DICHLOROBENZENE	----------NA----------	
104	M	1,4-DICHLOROBENZENE	----------NA----------	
105		N-BUTYLBENZENE	----------NA----------	
106	M	1,2-DICHLOROBENZENE	----------NA----------	
107		HEXACHLOROETHANE	----------NA----------	
108	M	1,2-DIBROMO-3-CHLOROPROPA	----------NA----------	
109		HEXACHLOROBUTADIENE	----------NA----------	
110		1,3,5-TRICHLOROBENZENE	----------NA----------	
111		NITROBENZENE	----------NA----------	
112	M	1,2,4-TRICHLOROBENZENE	----------NA----------	
113		1,2,3-TRICHLOROBENZENE	----------NA----------	
114	M	NAPHTHALENE	----------NA----------	
115	M	INDANE	----------NA----------	
116		ETHYLENIMINE	----------NA----------	
117		BIS(CHLOROMETHYL)ETHER	----------NA----------	

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T225633.D MT9264.M Tue Jul 18 23:19:27 2017 MSDT

Initial Calibration Verification

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICV9264
Lab FileID: T225642.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T225642.D Vial: 17
Acq On : 18 Jul 2017 10:06 pm Operator: payalr
Sample : icv9264-20 Inst : GCMST
Misc : MS18159,VT9264,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Tue Jul 18 20:41:12 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	95	0.00	7.44
2	M	TERTIARY BUTYL ALCOHOL		----------NA----------				
3	M	1,4-DIOXANE		----------NA----------				
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	99	0.00	9.49
5		CHLORODIFLUOROMETHANE		----------NA----------				
6	M	DICHLORODIFLUOROMETHANE		----------NA----------				
7	M	FREON 143A	1.377	1.153	16.3	74	-0.01	4.04
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE		----------NA----------				
10	M	VINYL CHLORIDE		----------NA----------				
11	M	BROMOMETHANE		----------NA----------				
12	M	CHLOROETHANE		----------NA----------				
13		VINYL BROMIDE		----------NA----------				
14	M	TRICHLOROFLUOROMETHANE		----------NA----------				
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER		----------NA----------				
18	M	1,1-DICHLOROETHYLENE		----------NA----------				
19	M	FREON 113		----------NA----------				
20		ACROLEIN		----------NA----------				
21	M	ACETONE		----------NA----------				
22	M	CARBON DISULFIDE		----------NA----------				
23	M	IODOMETHANE		----------NA----------				
24		ACETONITRILE		----------NA----------				
25		METHYL ACETATE		----------NA----------				
26	M	METHYLENE CHLORIDE		----------NA----------				
27	M	ACRYLONITRILE		----------NA----------				
28	M	METHYL TERT BUTYL ETHER		----------NA----------				
29	M	trans-1,2-DICHLOROETHYLEN		----------NA----------				
30	M	HEXANE		----------NA----------				
31	M	1,1-DICHLOROETHANE		----------NA----------				
32	M	VINYL ACETATE		----------NA----------				
33	M	DI-ISOPROPYL ETHER		----------NA----------				
34	M	ETHYL TERT BUTYL ETHER		----------NA----------				
35	M	2-BUTANONE		----------NA----------				
36	M	cis-1,2-DICHLOROETHYLENE		----------NA----------				
37	M	2,2-DICHLOROPROPANE		----------NA----------				
38	M	ETHYL ACETATE		----------NA----------				
39		BROMOCHLOROMETHANE		----------NA----------				

---------- True Calc. % Drift ----------

Initial Calibration Verification

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICV9264
Lab FileID: T225642.D

40	M	TETRAHYDROFURAN		----------NA----------					
		----------	AvgRF	CCRF	% Dev	----------			
41	M	CHLOROFORM		----------NA----------					
42		t-BUTYL FORMATE		----------NA----------					
43	M	1,1,1-TRICHLOROETHANE		----------NA----------					
44		CYCLOHEXANE		----------NA----------					
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.460	4.0	96	0.00	9.54	
46		1,1-DICHLOROPROPENE		----------NA----------					
47		CARBON TETRACHLORIDE		----------NA----------					
48		ISOPROPYL ACETATE		----------NA----------					
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	97	0.00	10.34	
50	S	1,2-DICHLOROETHANE-d4	0.314	0.313	0.3	97	0.00	9.93	
51	M	BENZENE		----------NA----------					
52	M	1,2-DICHLOROETHANE		----------NA----------					
53		2,2,4-TRIMETHYLPENTANE		----------NA----------					
54	M	TERT-AMYL METHYL ETHER		----------NA----------					
55	M	HEPTANE		----------NA----------					
56	M	TRICHLOROETHYLENE		----------NA----------					
57	M	1,2-DICHLOROPROPANE		----------NA----------					
58	M	DIBROMOMETHANE		----------NA----------					
59		METHYL METHACRYLATE		----------NA----------					
60		METHYLCYCLOHEXANE		----------NA----------					
61	M	BROMODICHLOROMETHANE		----------NA----------					
62	M	2-CHLOROETHYL VINYL ETHER		----------NA----------					
63	M	EPICHLOROHYDRIN		----------NA----------					
64	M	cis-1,3-DICHLOROPROPENE		----------NA----------					
65	M	4-METHYL-2-PENTANONE		----------NA----------					
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	0.00	13.55	
67	S	TOLUENE-d8	1.256	1.257	-0.1	98	0.00	11.97	
68		TOLUENE		----------NA----------					
69		ETHYL METHACRYLATE		----------NA----------					
70		trans-1,3-DICHLOROPROPENE		----------NA----------					
71		1,1,2-TRICHLOROETHANE		----------NA----------					
72	M	TETRACHLOROETHYLENE		----------NA----------					
73	M	2-HEXANONE		----------NA----------					
74		1,3-DICHLOROPROPANE		----------NA----------					
75	M	BUTYL ACETATE		----------NA----------					
76		3,3-DIMETHYL-1-BUTANOL		----------NA----------					
77	M	DIBROMOCHLOROMETHANE		----------NA----------					
78	M	ETHYLENE DIBROMIDE		----------NA----------					
79	M	CHLOROBENZENE		----------NA----------					
80	M	1,1,1,2-TETRACHLOROETHANE		----------NA----------					
81	M	ETHYLBENZENE		----------NA----------					
82	M	m,p-XYLENE		----------NA----------					
83	M	o-XYLENE		----------NA----------					
84	M	STYRENE		----------NA----------					
85		n-AMYL ACETATE		----------NA----------					
86	M	BROMOFORM		----------NA----------					
87	M	CUMENE		----------NA----------					
88		cis-1,4-DICHLORO-2-BUTENE		----------NA----------					
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	100	0.00	16.09	
90	S	4-BROMOFLUOROBENZENE	0.625	0.609	2.6	98	0.00	14.81	
91		1,1,2,2-TETRACHLOROETHANE		----------NA----------					
92		trans-1,4-DICHLORO-2-BUTE		----------NA----------					
93		1,2,3-TRICHLOROPROPANE		----------NA----------					
94		N-PROPYLBENZENE		----------NA----------					

Initial Calibration Verification

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9264-ICV9264
Lab FileID: T225642.D

95		BROMOBENZENE	----------NA----------	
96		2-CHLOROTOLUENE	----------NA----------	
97		4-CHLOROTOLUENE	----------NA----------	
98	M	1,3,5-TRIMETHYLBENZENE	----------NA----------	
99		TERT-BUTYLBENZENE	----------NA----------	
100	M	1,2,4-TRIMETHYLBENZENE	----------NA----------	
101		SEC-BUTYLBENZENE	----------NA----------	
102		P-ISOPROPYLTOLUENE	----------NA----------	
103	M	1,3-DICHLOROBENZENE	----------NA----------	
104	M	1,4-DICHLOROBENZENE	----------NA----------	
105		N-BUTYLBENZENE	----------NA----------	
106	M	1,2-DICHLOROBENZENE	----------NA----------	
107		HEXACHLOROETHANE	----------NA----------	
108	M	1,2-DIBROMO-3-CHLOROPROPA	----------NA----------	
109		HEXACHLOROBUTADIENE	----------NA----------	
110		1,3,5-TRICHLOROBENZENE	----------NA----------	
111		NITROBENZENE	----------NA----------	
112	M	1,2,4-TRICHLOROBENZENE	----------NA----------	
113		1,2,3-TRICHLOROBENZENE	----------NA----------	
114	M	NAPHTHALENE	----------NA----------	
115	M	INDANE	----------NA----------	
116		ETHYLENIMINE	----------NA----------	
117		BIS(CHLOROMETHYL)ETHER	----------NA----------	

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T225633.D MT9264.M Tue Jul 18 23:19:28 2017 MSDT

Continuing Calibration Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9285-CC9264
Lab FileID: T226120.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\T core\vt9285\T226120.D Vial: 2
Acq On : 11 Aug 2017 1:28 pm Operator: payalr
Sample : cc9264-20 Inst : GCMST
Misc : MS18990,VT9285,W,,,,1 Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\MSDChem\1\METHODS\MT9264.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jul 20 14:57:09 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	79	0.00	7.45
2	M	TERTIARY BUTYL ALCOHOL	1.246	1.169	6.2	78	-0.01	7.55
3	M	1,4-DIOXANE	0.093	0.088	5.4	82	0.00	11.02
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	85	-0.01	9.48
5		CHLORODIFLUOROMETHANE	1.202	1.038	13.6	67	-0.02	4.37
6	M	DICHLORODIFLUOROMETHANE	1.258	1.078	14.3	67	-0.01	4.38
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE	1.194	0.849	28.9	59	-0.02	4.69
10	M	VINYL CHLORIDE	1.275	1.033	19.0	67	-0.02	4.94
11	M	BROMOMETHANE	0.697	0.569	18.4	65	-0.02	5.57
12	M	CHLOROETHANE	0.583	0.469	19.6	66	-0.01	5.73
13		VINYL BROMIDE	0.812	0.642	20.9	66	0.00	6.06
14	M	TRICHLOROFLUOROMETHANE	1.055	0.970	8.1	74	0.00	6.16
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER	0.236	0.232	1.7	80	0.00	6.52
18	M	1,1-DICHLOROETHYLENE	0.757	0.659	12.9	71	0.00	6.91
19	M	FREON 113	0.517	0.450	13.0	67	0.00	6.89
20		ACROLEIN	0.094	0.084	10.6	81	0.00	6.74
21	M	ACETONE	0.035	0.031	11.4	77	-0.02	6.92
22	M	CARBON DISULFIDE	1.785	1.673	6.3	75	0.00	7.29
23	M	IODOMETHANE	0.893	0.841	5.8	74	0.00	7.16
24		ACETONITRILE	0.056	0.058	-3.6	82	-0.01	7.30
25		METHYL ACETATE	0.265	0.292	-10.2	92	-0.02	7.33
26	M	METHYLENE CHLORIDE	0.520	0.474	8.8	73	0.00	7.52
27	M	ACRYLONITRILE	0.150	0.147	2.0	77	-0.02	7.79
28	M	METHYL TERT BUTYL ETHER	1.695	1.769	-4.4	86	0.00	7.83
29	M	trans-1,2-DICHLOROETHYLEN	0.631	0.628	0.5	78	0.00	7.86
30	M	HEXANE	0.653	0.637	2.5	78	0.00	8.15
31	M	1,1-DICHLOROETHANE	0.803	0.784	2.4	78	0.00	8.37
32	M	VINYL ACETATE	0.080	0.069	13.7	72	-0.01	8.33
33	M	DI-ISOPROPYL ETHER	1.907	1.894	0.7	82	0.00	8.35
34	M	ETHYL TERT BUTYL ETHER	1.808	1.862	-3.0	81	0.00	8.77
35	M	2-BUTANONE	0.044	0.041	6.8	82	0.00	8.97
36	M	cis-1,2-DICHLOROETHYLENE	0.522	0.474	9.2	75	0.00	9.02
37	M	2,2-DICHLOROPROPANE	0.955	0.847	11.3	74	-0.02	9.05
38	M	ETHYL ACETATE	0.058	0.062	-6.9	98	0.00	8.99
39		BROMOCHLOROMETHANE	0.228	0.219	3.9	78	-0.02	9.30

---------- True Calc. % Drift ----------

Continuing Calibration Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9285-CC9264
Lab FileID: T226120.D

40	M	TETRAHYDROFURAN	20.000	15.317	23.4	69	0.00	9.35
		----------	AvgRF	CCRF	% Dev	----------		
41	M	CHLOROFORM	0.820	0.755	7.9	78	0.00	9.35
42		t-BUTYL FORMATE	0.370	0.334	9.7	72	-0.02	9.40
43	M	1,1,1-TRICHLOROETHANE	0.883	0.884	-0.1	79	0.00	9.62
44		CYCLOHEXANE	0.986	0.893	9.4	75	0.00	9.71
45	S	DIBROMOFLUOROMETHANE (SUR	0.479	0.430	10.2	77	0.00	9.52
46		1,1-DICHLOROPROPENE	0.574	0.552	3.8	77	-0.01	9.77
47		CARBON TETRACHLORIDE	0.799	0.790	1.1	81	-0.01	9.81
48		ISOPROPYL ACETATE	0.091	0.089	2.2	83	0.00	9.90
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	81	-0.01	10.33
50	S	1,2-DICHLOROETHANE-d4	0.314	0.323	-2.9	83	0.00	9.93
51	M	BENZENE	1.188	1.207	-1.6	78	0.00	10.02
52	M	1,2-DICHLOROETHANE	0.328	0.350	-6.7	82	-0.01	10.00
53		2,2,4-TRIMETHYLPENTANE	1.442	1.382	4.2	75	0.00	10.04
54	M	TERT-AMYL METHYL ETHER	1.192	1.252	-5.0	82	0.00	10.04
55	M	HEPTANE	0.251	0.263	-4.8	80	0.00	10.18
56	M	TRICHLOROETHYLENE	0.289	0.286	1.0	77	0.00	10.67
57	M	1,2-DICHLOROPROPANE	0.328	0.336	-2.4	78	0.00	10.93
58	M	DIBROMOMETHANE	0.171	0.172	-0.6	79	0.00	11.07
59		METHYL METHACRYLATE	0.068	0.072	-5.9	86	-0.01	10.90
60		METHYLCYCLOHEXANE	0.722	0.716	0.8	77	0.00	10.92
61	M	BROMODICHLOROMETHANE	0.394	0.398	-1.0	79	0.00	11.19
62	M	2-CHLOROETHYL VINYL ETHER	0.103	0.158	-53.4#	124	0.00	11.42
63	M	EPICHLOROHYDRIN	0.026	0.027	-3.8	84	0.00	11.54
64	M	cis-1,3-DICHLOROPROPENE	0.495	0.490	1.0	78	0.00	11.65
65	M	4-METHYL-2-PENTANONE	0.129	0.125	3.1	83	0.00	11.74
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	83	0.00	13.54
67	S	TOLUENE-d8	1.256	1.267	-0.9	83	0.00	11.96
68		TOLUENE	0.731	0.759	-3.8	80	0.00	12.04
69		ETHYL METHACRYLATE	0.419	0.419	0.0	85	0.00	12.20
70		trans-1,3-DICHLOROPROPENE	0.466	0.441	5.4	80	0.00	12.20
71		1,1,2-TRICHLOROETHANE	0.235	0.212	9.8	76	-0.01	12.43
72	M	TETRACHLOROETHYLENE	0.257	0.261	-1.6	81	0.00	12.64
73	M	2-HEXANONE	0.125	0.116	7.2	86	-0.01	12.61
74		1,3-DICHLOROPROPANE	0.441	0.437	0.9	79	0.00	12.63
75	M	BUTYL ACETATE	0.212	0.209	1.4	81	0.00	12.69
76		3,3-DIMETHYL-1-BUTANOL	0.051	0.041	19.6	76	-0.01	12.77
77	M	DIBROMOCHLOROMETHANE	0.335	0.318	5.1	80	-0.01	12.90
78	M	ETHYLENE DIBROMIDE	0.267	0.260	2.6	79	0.00	13.08
79	M	CHLOROBENZENE	0.903	0.878	2.8	79	-0.01	13.57
80	M	1,1,1,2-TETRACHLOROETHANE	0.437	0.406	7.1	78	0.00	13.64
81	M	ETHYLBENZENE	1.580	1.607	-1.7	81	0.00	13.64
82	M	m,p-XYLENE	0.596	0.620	-4.0	81	0.00	13.75
83	M	o-XYLENE	1.486	1.494	-0.5	82	0.00	14.21
84	M	STYRENE	1.064	1.027	3.5	78	0.00	14.21
85		n-AMYL ACETATE		----------	NA	----------		
86	M	BROMOFORM	0.250	0.225	10.0	79	0.00	14.49
87	M	CUMENE	1.890	1.969	-4.2	81	0.00	14.59
88		cis-1,4-DICHLORO-2-BUTENE	0.125	0.107	14.4	77	-0.01	14.64
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	85	0.00	16.09
90	S	4-BROMOFLUOROBENZENE	0.625	0.626	-0.2	86	-0.01	14.80
91		1,1,2,2-TETRACHLOROETHANE	0.656	0.555	15.4	78	0.00	14.89
92		trans-1,4-DICHLORO-2-BUTE	0.133	0.103	22.6	67	0.00	14.94
93		1,2,3-TRICHLOROPROPANE	0.163	0.142	12.9	82	0.00	14.98
94		N-PROPYLBENZENE	3.064	3.062	0.1	81	0.00	15.04

Continuing Calibration Summary

Job Number: JC48691
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9285-CC9264
Lab FileID: T226120.D

95		BROMOBENZENE	0.680	0.601	11.6	80	-0.01	15.02
96		2-CHLOROTOLUENE	0.665	0.626	5.9	80	0.00	15.20
97		4-CHLOROTOLUENE	1.899	1.757	7.5	80	0.00	15.31
98	M	1,3,5-TRIMETHYLBENZENE	2.508	2.525	-0.7	81	0.00	15.20
99		TERT-BUTYLBENZENE	2.069	2.155	-4.2	85	0.00	15.59
100	M	1,2,4-TRIMETHYLBENZENE	2.720	2.652	2.5	80	0.00	15.63
101		SEC-BUTYLBENZENE	3.384	3.407	-0.7	78	-0.01	15.83
102		P-ISOPROPYLTOLUENE	2.967	3.046	-2.7	82	0.00	15.96
103	M	1,3-DICHLOROBENZENE	1.549	1.388	10.4	78	0.00	16.03
104	M	1,4-DICHLOROBENZENE	1.576	1.388	11.9	78	0.00	16.12
105		N-BUTYLBENZENE	0.842	0.807	4.2	79	0.00	16.41
106	M	1,2-DICHLOROBENZENE	1.698	1.500	11.7	77	0.00	16.55
107		HEXACHLOROETHANE	0.363	0.343	5.5	81	0.00	16.85
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.183	0.151	17.5	74	0.00	17.38
109		HEXACHLOROBUTADIENE	0.863	0.830	3.8	80	0.00	18.43
110		1,3,5-TRICHLOROBENZENE	1.915	1.847	3.6	79	0.00	17.59
111		NITROBENZENE	0.065	0.048	26.2	76	0.00	17.61
112	M	1,2,4-TRICHLOROBENZENE	1.486	1.263	15.0	70	0.00	18.28
113		1,2,3-TRICHLOROBENZENE	1.104	0.817	26.0	63	-0.01	18.88
114	M	NAPHTHALENE	2.474	1.769	28.5	62	-0.01	18.60
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE	0.000	0.000	0.0	0#	-0.03	18.28
117		BIS(CHLOROMETHYL)ETHER	0.000	0.000	0.0	0#	0.00	20.67

(#) = Out of Range SPCC's out = 0 CCC's out = 0

T225633.D MT9264.M Mon Aug 14 14:49:00 2017 ACC-VOA-CLN-05A

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226124.D
Acq On : 11 Aug 2017 3:31 pm
Operator : payalr
Sample : jc48691-1
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 14 14:52:45 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

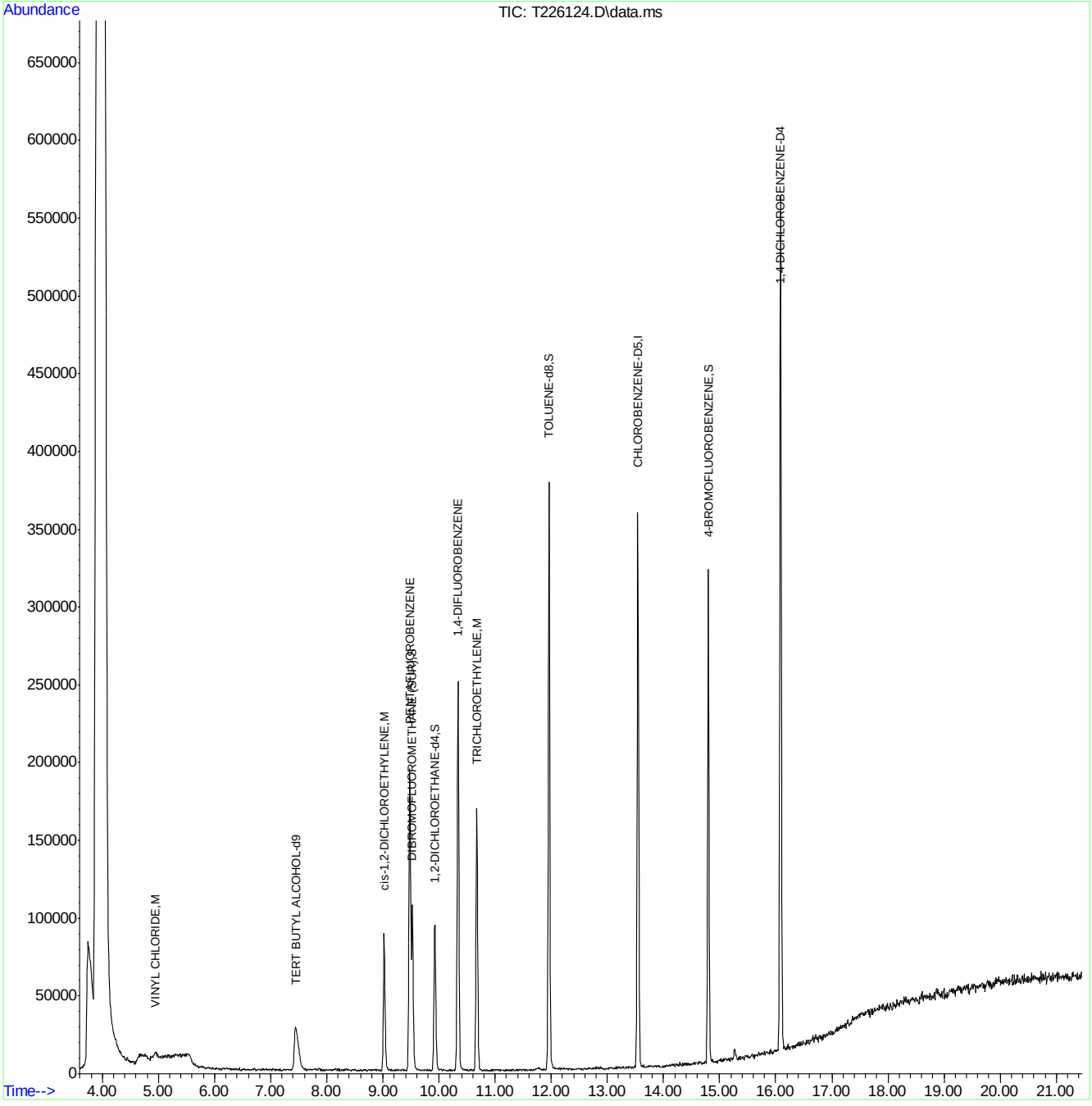
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.452	65	84128	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.481	168	156227	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.338	114	221452	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.543	117	223943	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.089	152	165986	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.523	113	70354	28.22	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 94.07%			
50) 1,2-DICHLOROETHANE-d4	9.920	65	75101	32.40	PPB	-0.01
Spiked Amount 30.000	Range 72 - 125		Recovery = 108.00%			
67) TOLUENE-d8	11.959	98	280153	29.88	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 99.60%			
90) 4-BROMOFLUOROBENZENE	14.803	174	103458	29.91	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 99.70%			
Target Compounds						Qvalue
10) VINYL CHLORIDE	4.948	62	8555	1.29	PPb	93
36) cis-1,2-DICHLOROETHYLENE	9.026	96	43781	16.11	PPb	96
56) TRICHLOROETHYLENE	10.673	95	61850	28.99	PPb	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

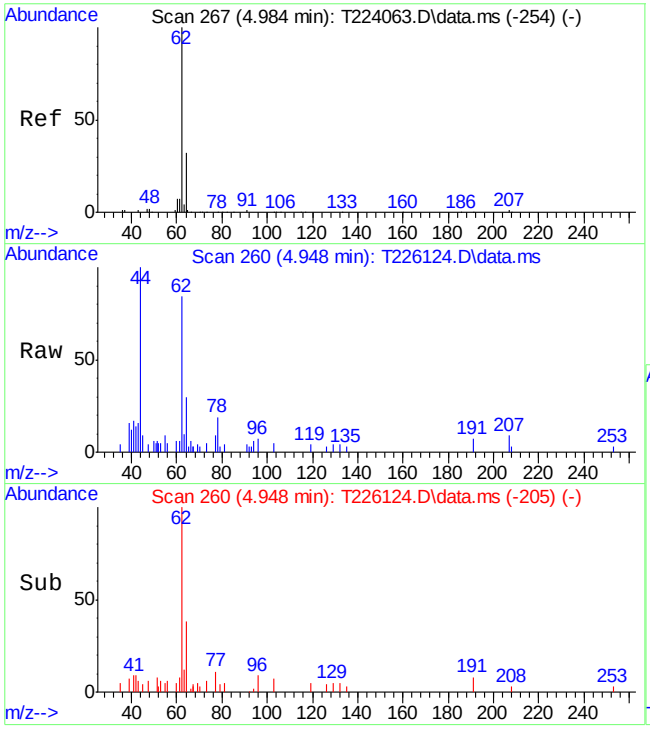
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226124.D
Acq On : 11 Aug 2017 3:31 pm
Operator : payalr
Sample : jc48691-1
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 14 14:52:45 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration



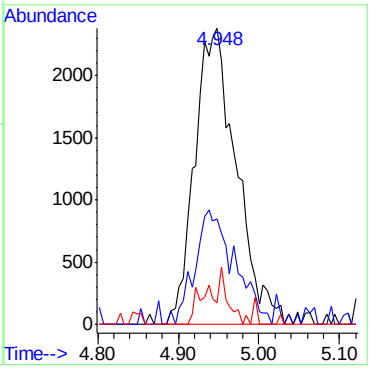
SGS ACCUTEST JC48691

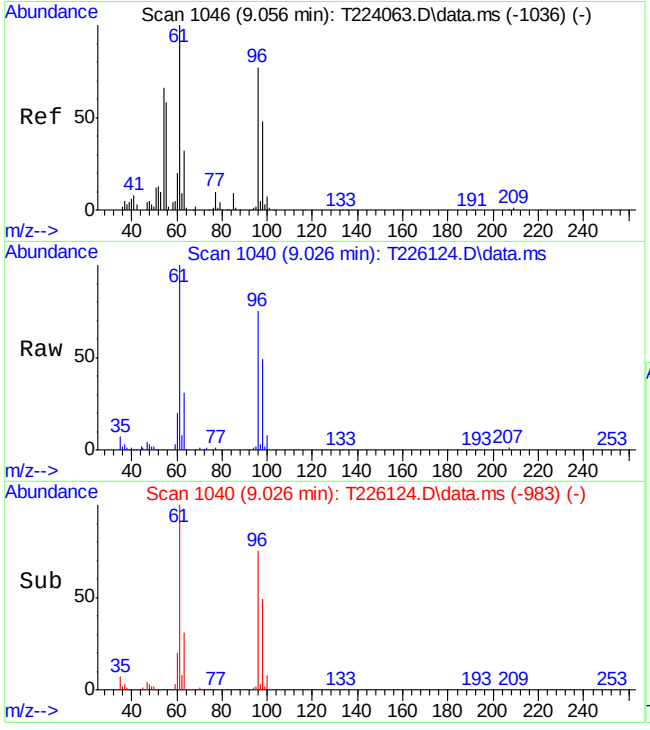


#10
VINYL CHLORIDE
Concen: 1.29 PPb
RT: 4.948 min Scan# 260
Delta R.T. -0.015 min
Lab File: T226124.D
Acq: 11 Aug 2017 3:31 pm

Tgt Ion: 62 Resp: 8555

Ion	Ratio	Lower	Upper
62	100		
64	35.8	1.0	61.0
61	7.1	0.0	38.0

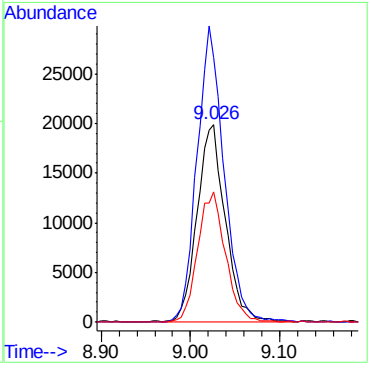


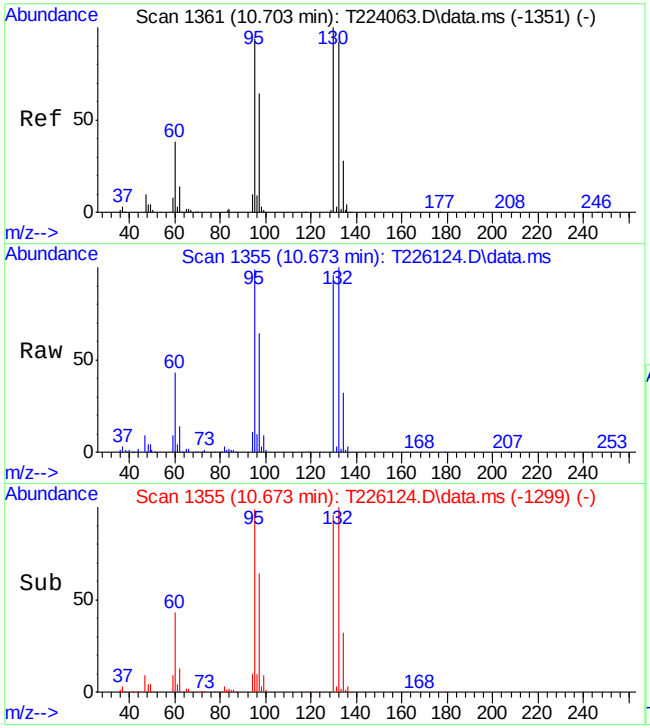


#36
cis-1,2-DICHLOROETHYLENE
Concen: 16.11 PPb
RT: 9.026 min Scan# 1040
Delta R.T. -0.001 min
Lab File: T226124.D
Acq: 11 Aug 2017 3:31 pm

Tgt Ion: 96 Resp: 43781

Ion	Ratio	Lower	Upper
96	100		
61	134.1	101.4	161.4
98	65.7	31.1	91.1

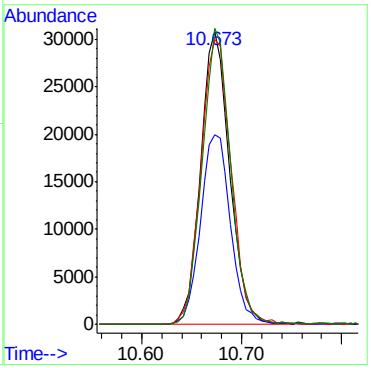




#56
TRICHLOROETHYLENE
Concen: 28.99 PPb
RT: 10.673 min Scan# 1355
Delta R.T. -0.007 min
Lab File: T226124.D
Acq: 11 Aug 2017 3:31 pm

Tgt Ion: 95 Resp: 61850

Ion	Ratio	Lower	Upper
95	100		
97	64.6	32.5	92.5
130	97.2	74.3	134.3
132	101.1	61.2	121.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226125.D
Acq On : 11 Aug 2017 4:01 pm
Operator : payalr
Sample : jc48691-2
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 14 14:53:51 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

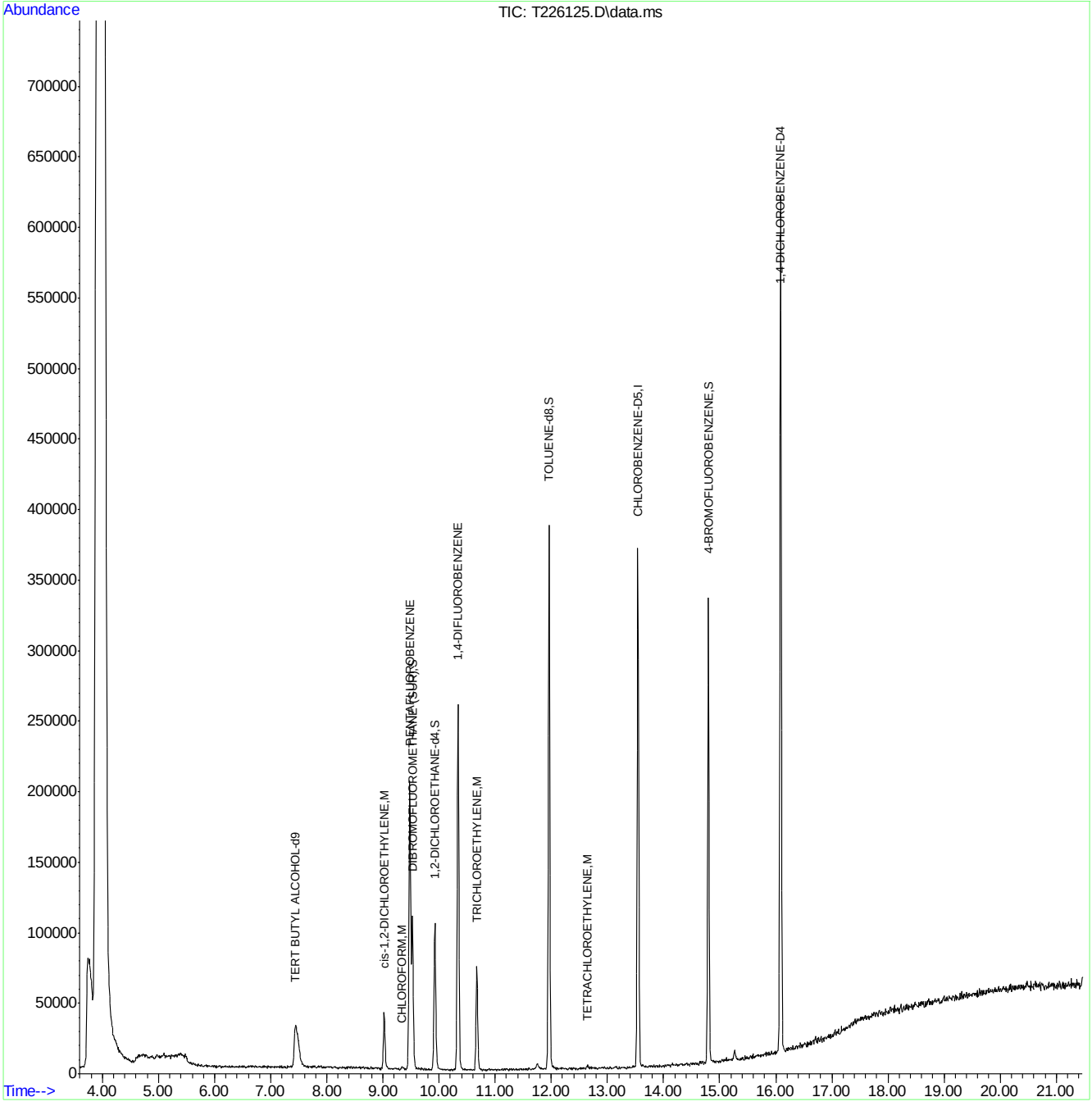
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) TERT BUTYL ALCOHOL-d9	7.441	65	94509	300.00	PPb		-0.01
4) PENTAFLUOROBENZENE	9.475	168	161960	30.00	PPB		-0.01
49) 1,4-DIFLUOROBENZENE	10.337	114	232260	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.547	117	230109	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.088	152	178773	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.527	113	71072	27.50	PPb		0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 91.67%				
50) 1,2-DICHLOROETHANE-d4	9.924	65	77918	32.05	PPB		0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 106.83%				
67) TOLUENE-d8	11.958	98	289700	30.07	PPB		0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 100.23%				
90) 4-BROMOFLUOROBENZENE	14.802	174	108756	29.19	PPB		0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.30%				
Target Compounds							Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.025	96	21705	7.70	PPb		97
41) CHLOROFORM	9.339	83	861	0.19	PPb		87
56) TRICHLOROETHYLENE	10.672	95	26498	11.84	PPb		95
72) TETRACHLOROETHYLENE	12.643	164	645	0.33	PPb	#	70

(#) = qualifier out of range (m) = manual integration (+) = signals summed

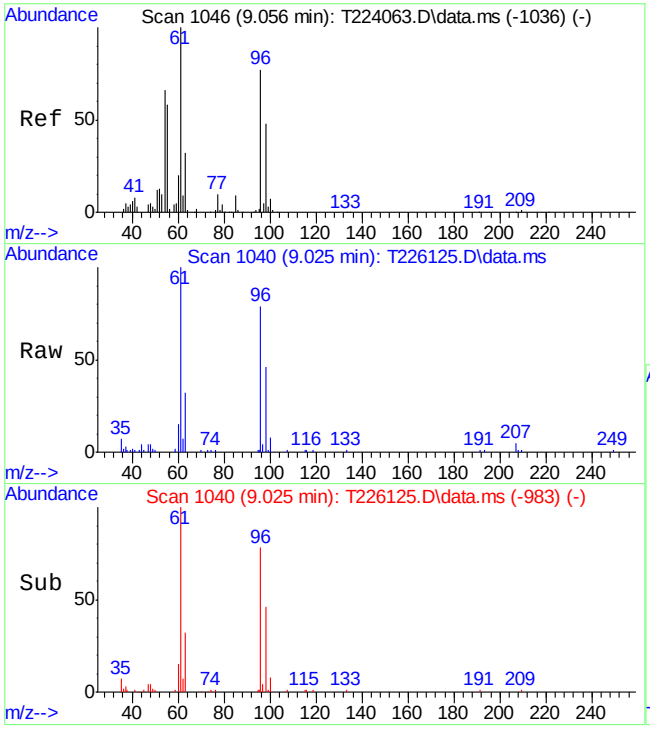
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226125.D
Acq On : 11 Aug 2017 4:01 pm
Operator : payalr
Sample : jc48691-2
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 14 14:53:51 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration



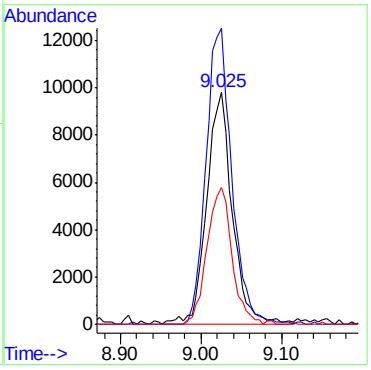
SGS ACCUTEST JC48691

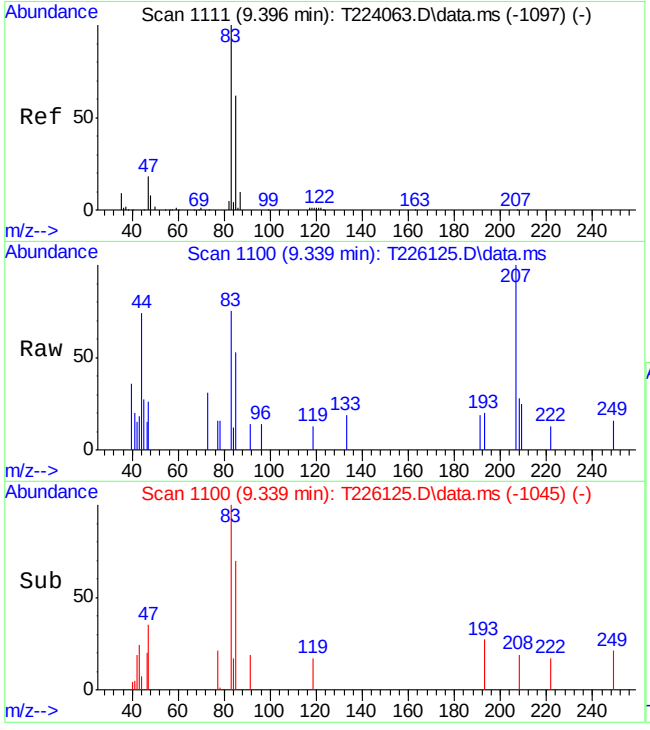


#36
cis-1,2-DICHLOROETHYLENE
Concen: 7.70 PPb
RT: 9.025 min Scan# 1040
Delta R.T. -0.002 min
Lab File: T226125.D
Acq: 11 Aug 2017 4:01 pm

Tgt Ion: 96 Resp: 21705

Ion	Ratio	Lower	Upper
96	100		
61	127.3	101.4	161.4
98	58.8	31.1	91.1

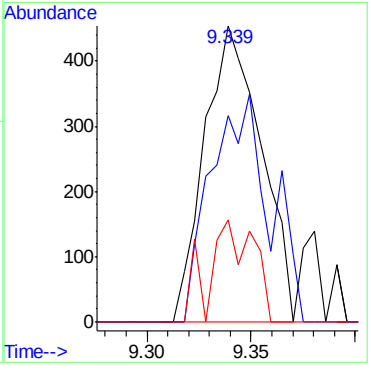


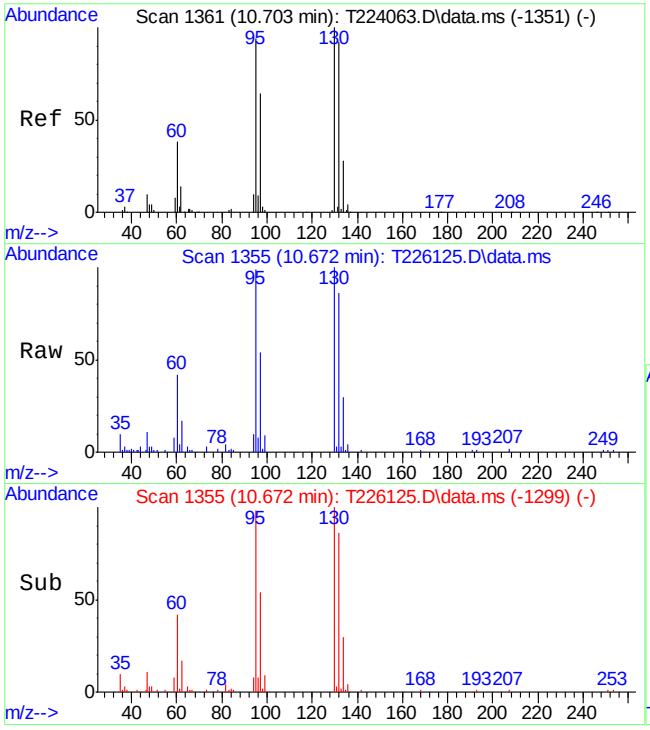


#41
CHLOROFORM
Concen: 0.19 PPb
RT: 9.339 min Scan# 1100
Delta R.T. -0.012 min
Lab File: T226125.D
Acq: 11 Aug 2017 4:01 pm

Tgt Ion: 83 Resp: 861

Ion	Ratio	Lower	Upper
83	100		
85	69.8	34.1	94.1
47	34.6	0.0	50.6

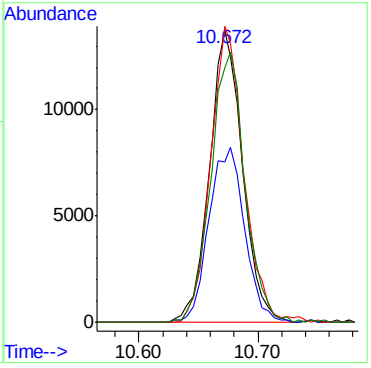


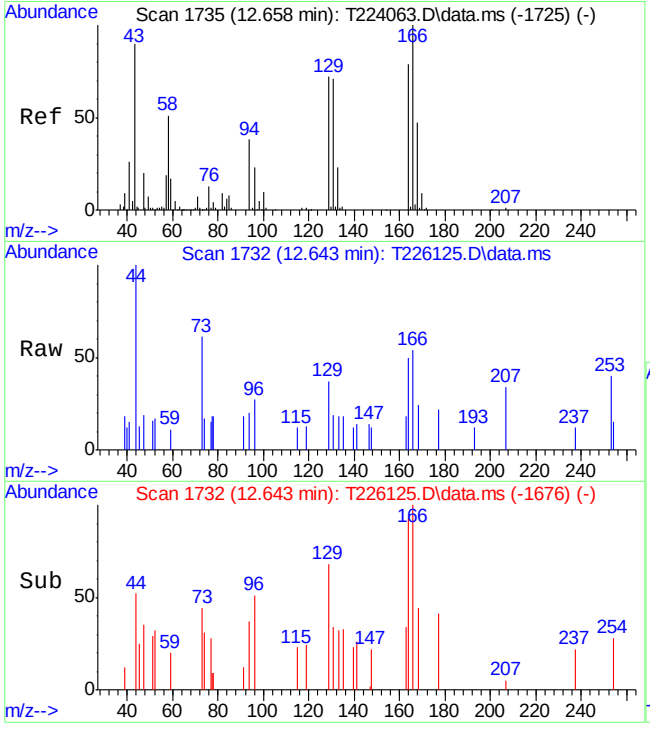


#56
TRICHLOROETHYLENE
Concen: 11.84 PPb
RT: 10.672 min Scan# 1355
Delta R.T. -0.007 min
Lab File: T226125.D
Acq: 11 Aug 2017 4:01 pm

Tgt Ion: 95 Resp: 26498

Ion	Ratio	Lower	Upper
95	100		
97	54.8	32.5	92.5
130	101.3	74.3	134.3
132	87.2	61.2	121.2

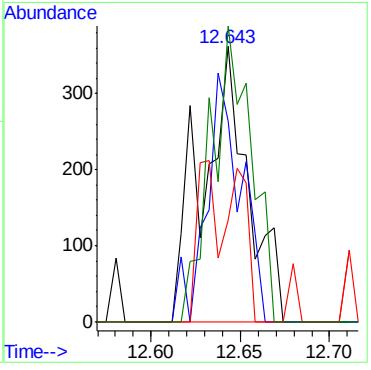




#72
TETRACHLOROETHYLENE
Concen: 0.33 PPb
RT: 12.643 min Scan# 1732
Delta R.T. -0.008 min
Lab File: T226125.D
Acq: 11 Aug 2017 4:01 pm

Tgt Ion:164 Resp: 645

Ion	Ratio	Lower	Upper
164	100		
129	72.5	62.4	122.4
131	36.9	59.3	119.3#
166	107.2	100.2	160.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226126.D
Acq On : 11 Aug 2017 4:31 pm
Operator : payalr
Sample : jc48691-3
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 14 14:54:33 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

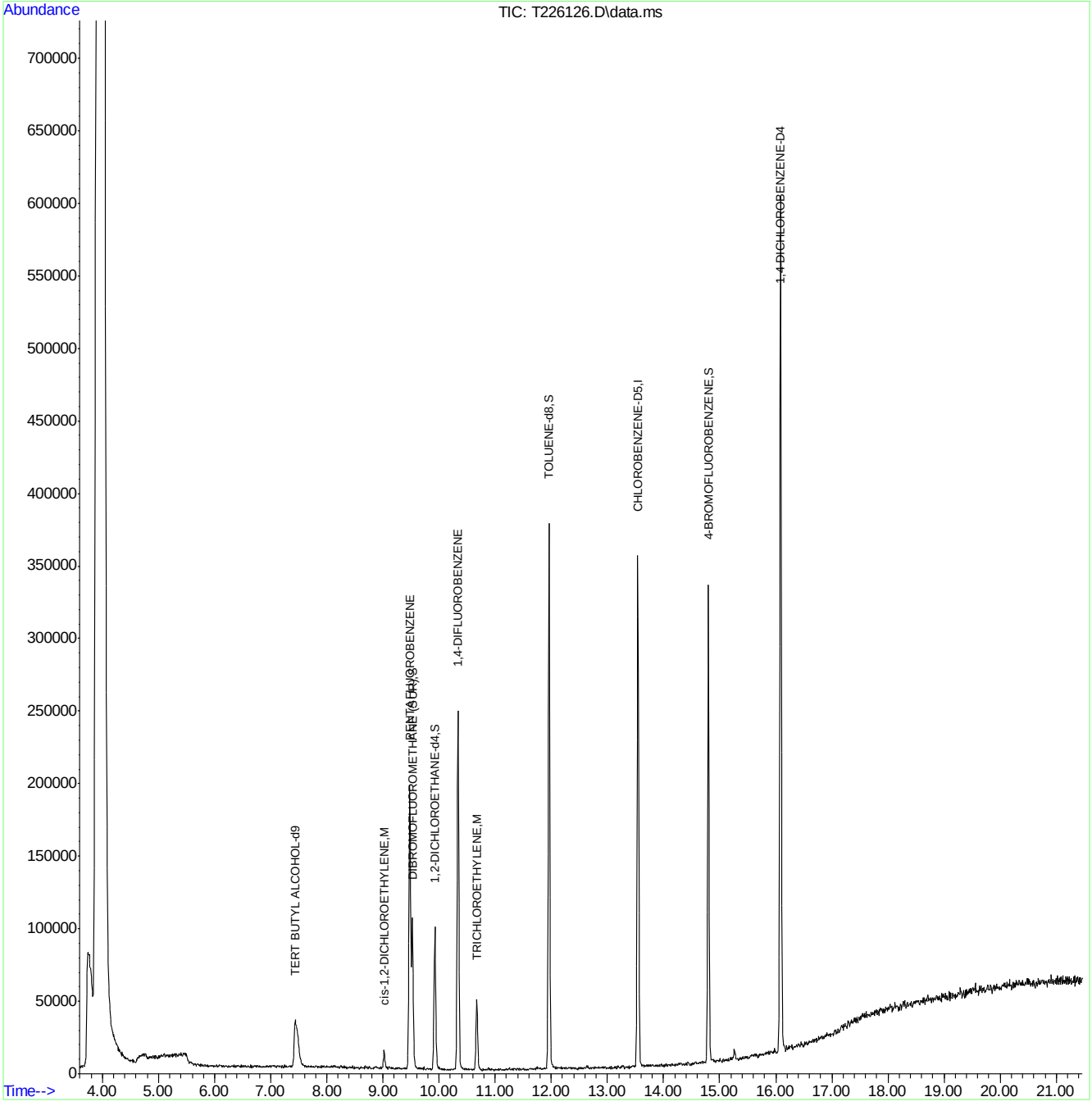
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.436	65	94302	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.475	168	151628	30.00	PPB	-0.01
49) 1,4-DIFLUOROBENZENE	10.337	114	220896	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.542	117	220946	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.088	152	172632	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.527	113	67577	27.92	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 93.07%			
50) 1,2-DICHLOROETHANE-d4	9.924	65	75911	32.83	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 109.43%			
67) TOLUENE-d8	11.958	98	278312	30.09	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 100.30%			
90) 4-BROMOFLUOROBENZENE	14.802	174	106930	29.72	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 99.07%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.020	96	6380	2.42	PPb	95
56) TRICHLOROETHYLENE	10.677	95	18024	8.47	PPb	92

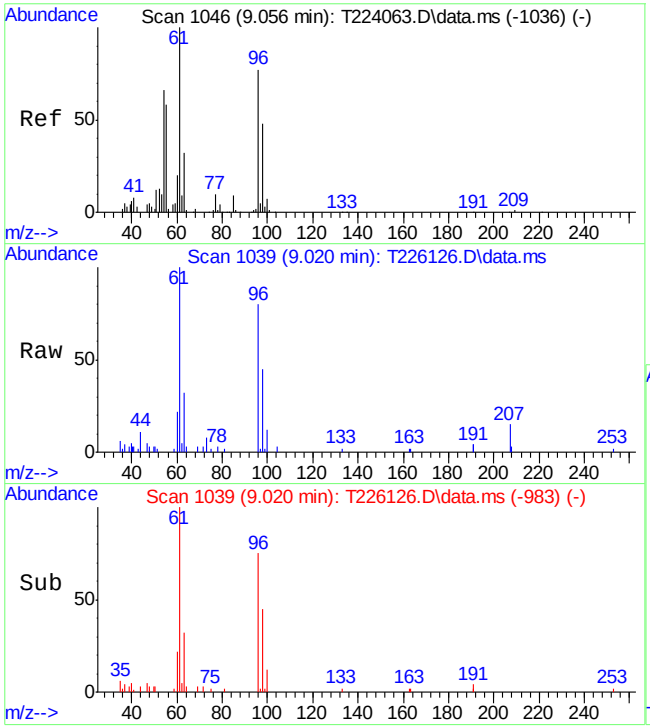
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226126.D
Acq On : 11 Aug 2017 4:31 pm
Operator : payalr
Sample : jc48691-3
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 14 14:54:33 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

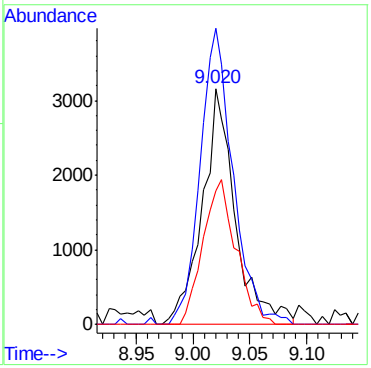


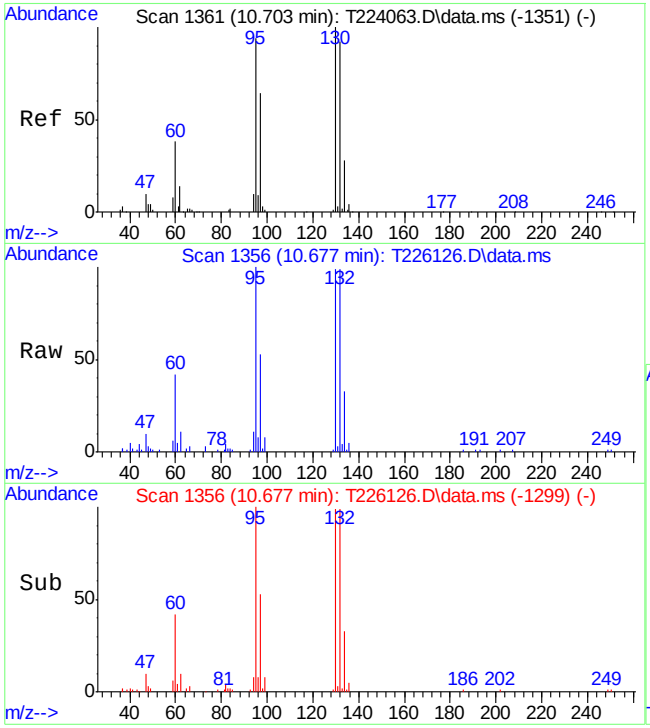


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.42 PPb
RT: 9.020 min Scan# 1039
Delta R.T. -0.007 min
Lab File: T226126.D
Acq: 11 Aug 2017 4:31 pm

Tgt Ion: 96 Resp: 6380

Ion	Ratio	Lower	Upper
96	100		
61	125.6	101.4	161.4
98	56.5	31.1	91.1

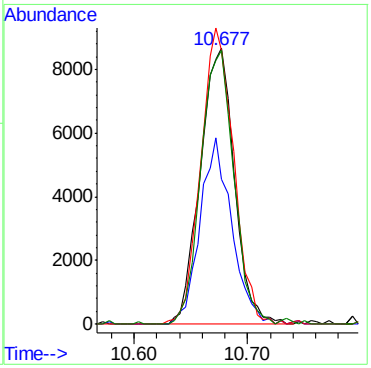




#56
TRICHLOROETHYLENE
Concen: 8.47 PPb
RT: 10.677 min Scan# 1356
Delta R.T. -0.002 min
Lab File: T226126.D
Acq: 11 Aug 2017 4:31 pm

Tgt Ion: 95 Resp: 18024

Ion	Ratio	Lower	Upper
95	100		
97	52.7	32.5	92.5
130	99.3	74.3	134.3
132	99.4	61.2	121.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226127.D
Acq On : 11 Aug 2017 5:02 pm
Operator : payalr
Sample : jc48691-4
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 14 14:55:44 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

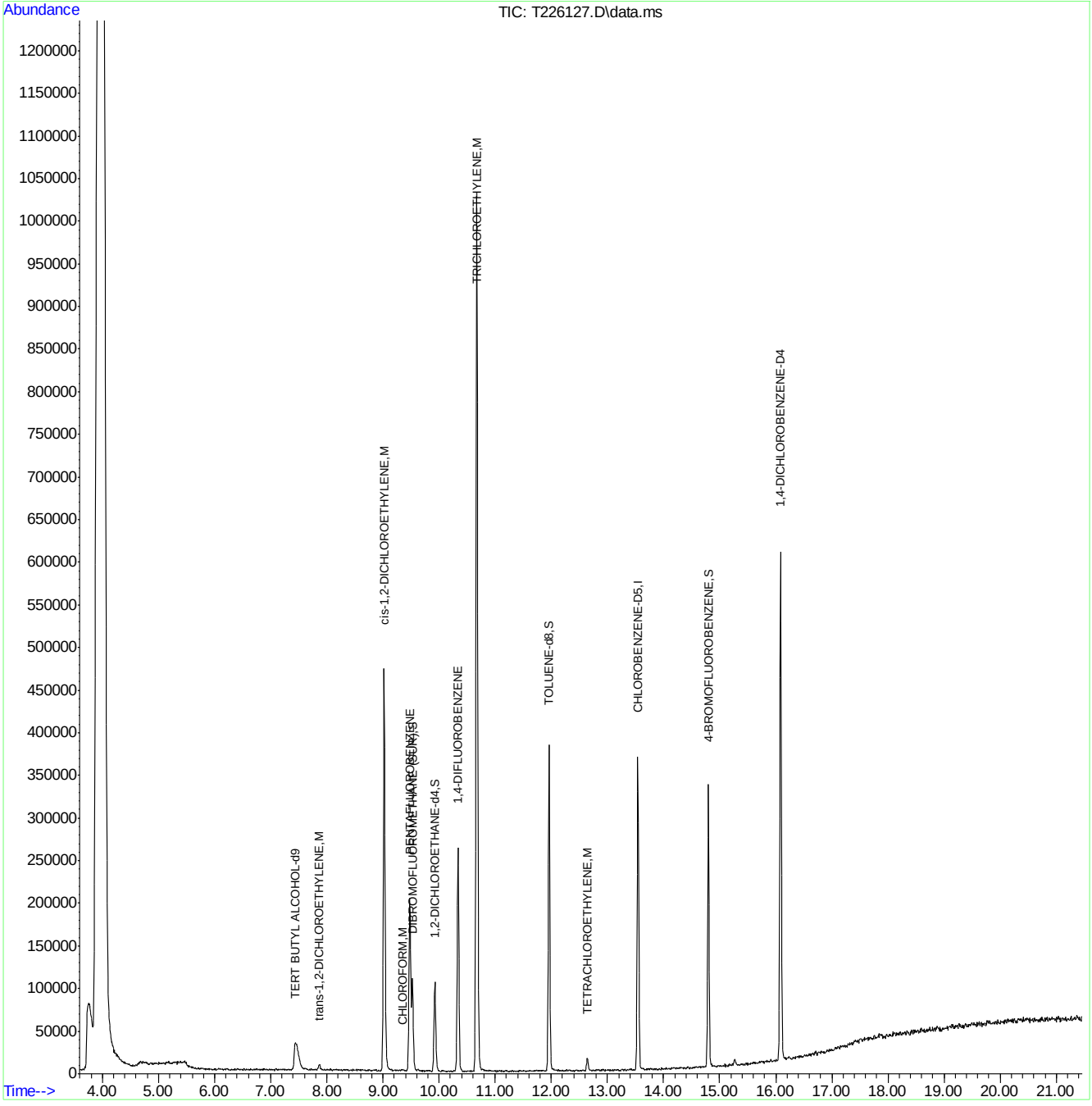
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.441	65	99207	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.480	168	159779	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.337	114	231800	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.542	117	234036	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.088	152	177563	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.527	113	71524	28.05	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 93.50%			
50) 1,2-DICHLOROETHANE-d4	9.924	65	79198	32.64	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 108.80%			
67) TOLUENE-d8	11.963	98	290779	29.68	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 98.93%			
90) 4-BROMOFLUOROBENZENE	14.802	174	109388	29.56	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.53%			
Target Compounds						Qvalue
29) trans-1,2-DICHLOROETHY...	7.865	61	4376	1.30	PPb	85
36) cis-1,2-DICHLOROETHYLENE	9.020	96	233949	84.16	PPb	92
41) CHLOROFORM	9.344	83	934	0.21	PPb	86
56) TRICHLOROETHYLENE	10.672	95	382298	171.20	PPb	95
72) TETRACHLOROETHYLENE	12.643	164	4045	2.02	PPb	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

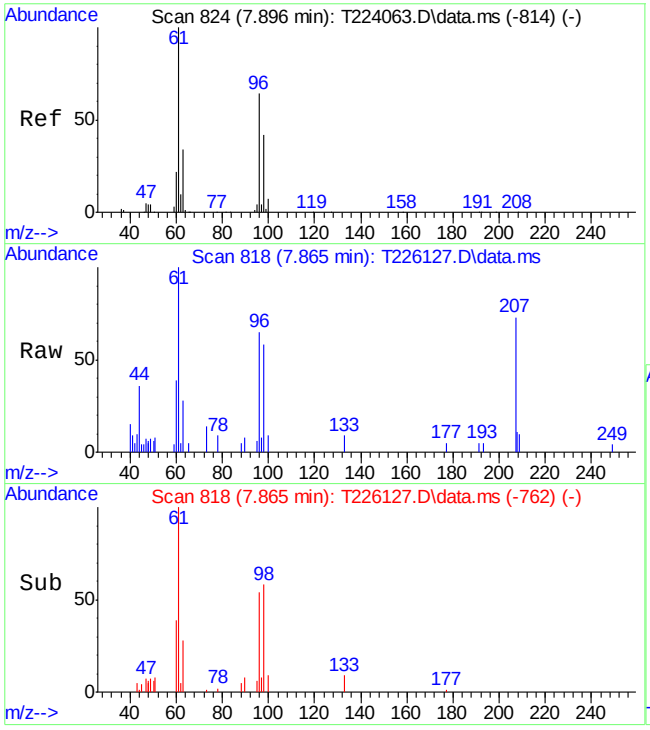
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226127.D
Acq On : 11 Aug 2017 5:02 pm
Operator : payalr
Sample : jc48691-4
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 14 14:55:44 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration



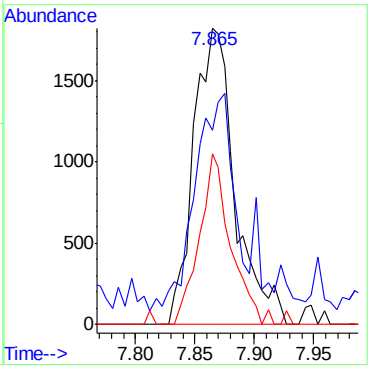
SGS ACCUTEST JC48691

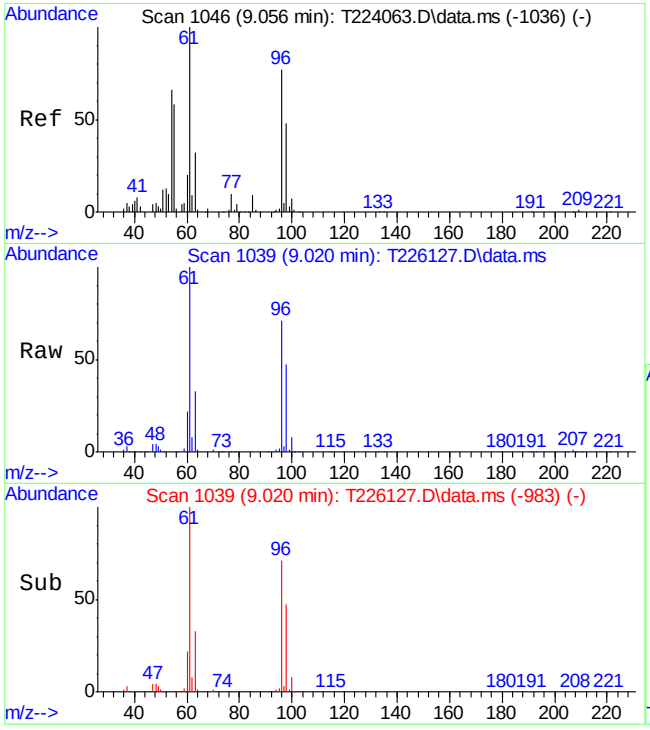


#29
trans-1,2-DICHLOROETHYLENE
Concen: 1.30 PPb
RT: 7.865 min Scan# 818
Delta R.T. -0.005 min
Lab File: T226127.D
Acq: 11 Aug 2017 5:02 pm

Tgt Ion: 61 Resp: 4376

Ion	Ratio	Lower	Upper
61	100		
96	59.3	39.6	99.6
98	57.5	14.5	74.5

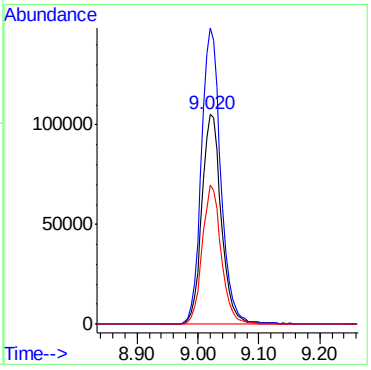


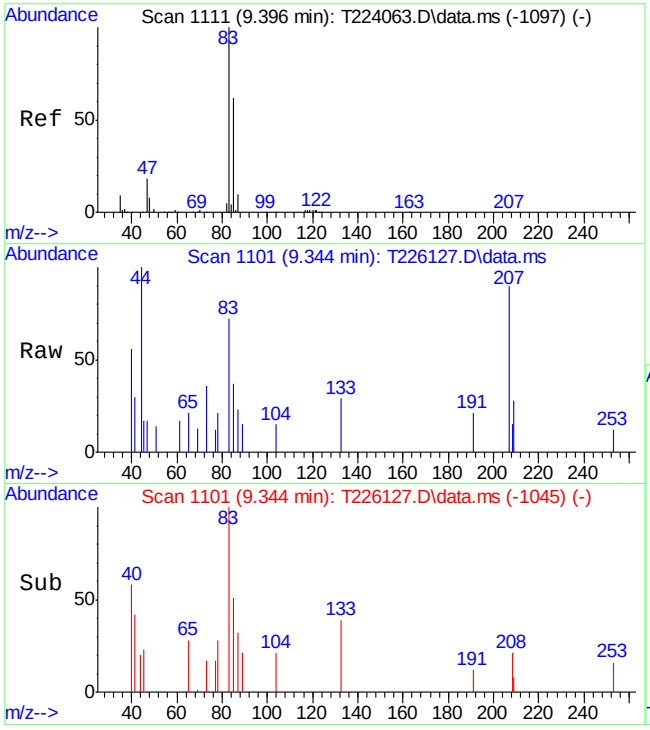


#36
cis-1,2-DICHLOROETHYLENE
Concen: 84.16 PPb
RT: 9.020 min Scan# 1039
Delta R.T. -0.007 min
Lab File: T226127.D
Acq: 11 Aug 2017 5:02 pm

Tgt Ion: 96 Resp: 233949

Ion	Ratio	Lower	Upper
96	100		
61	140.8	101.4	161.4
98	66.1	31.1	91.1

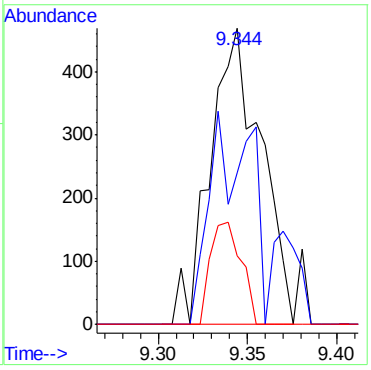


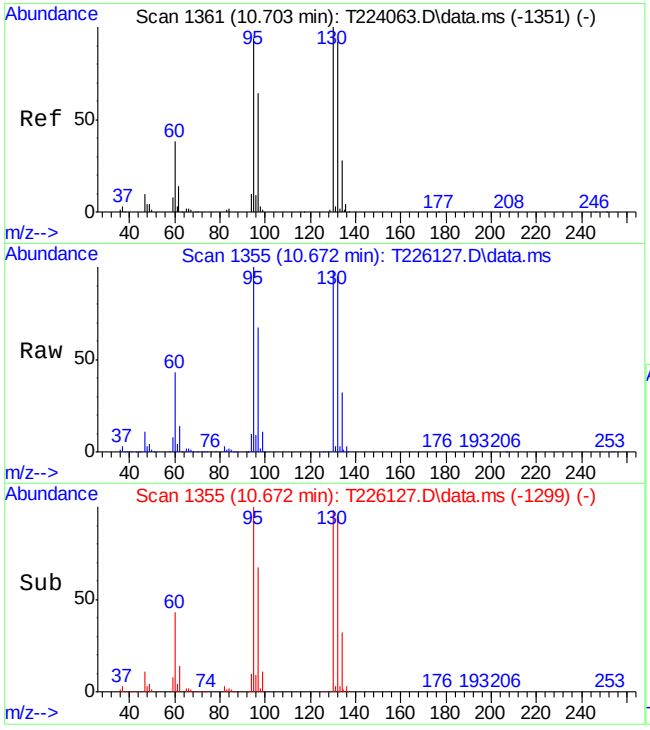


#41
CHLOROFORM
Concen: 0.21 PPb
RT: 9.344 min Scan# 1101
Delta R.T. -0.007 min
Lab File: T226127.D
Acq: 11 Aug 2017 5:02 pm

Tgt Ion: 83 Resp: 934

Ion	Ratio	Lower	Upper
83	100		
85	51.2	34.1	94.1
47	23.0	0.0	50.6

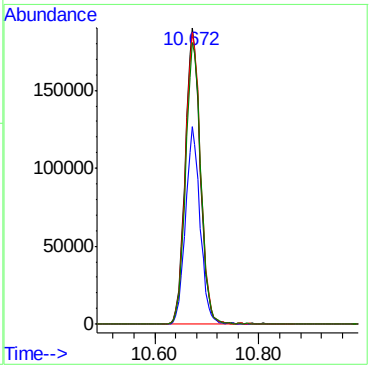


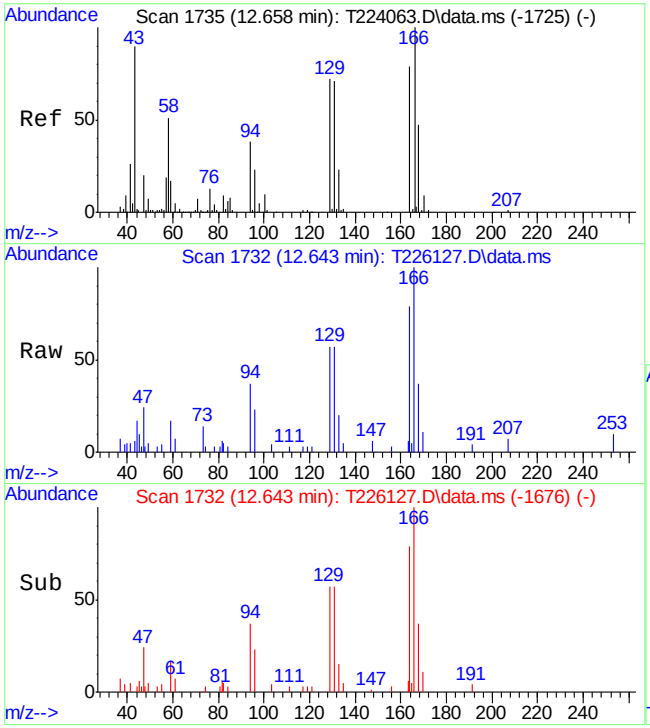


#56
TRICHLOROETHYLENE
Concen: 171.20 PPb
RT: 10.672 min Scan# 1355
Delta R.T. -0.007 min
Lab File: T226127.D
Acq: 11 Aug 2017 5:02 pm

Tgt Ion: 95 Resp: 382298

Ion	Ratio	Lower	Upper
95	100		
97	66.6	32.5	92.5
130	98.3	74.3	134.3
132	95.0	61.2	121.2

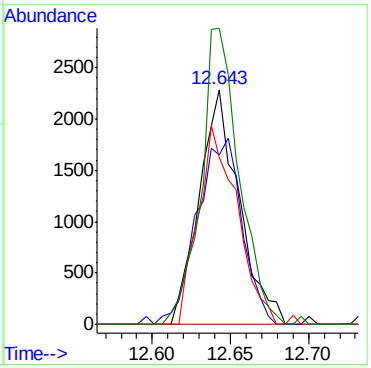




#72
TETRACHLOROETHYLENE
Concen: 2.02 PPb
RT: 12.643 min Scan# 1732
Delta R.T. -0.008 min
Lab File: T226127.D
Acq: 11 Aug 2017 5:02 pm

Tgt Ion:164 Resp: 4045

Ion	Ratio	Lower	Upper
164	100		
129	72.1	62.4	122.4
131	71.5	59.3	119.3
166	126.2	100.2	160.2



SGS ACCUTEST JC48691

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226132.D
Acq On : 11 Aug 2017 7:32 pm
Operator : payalr
Sample : jc48691-5
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 14 15:03:09 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

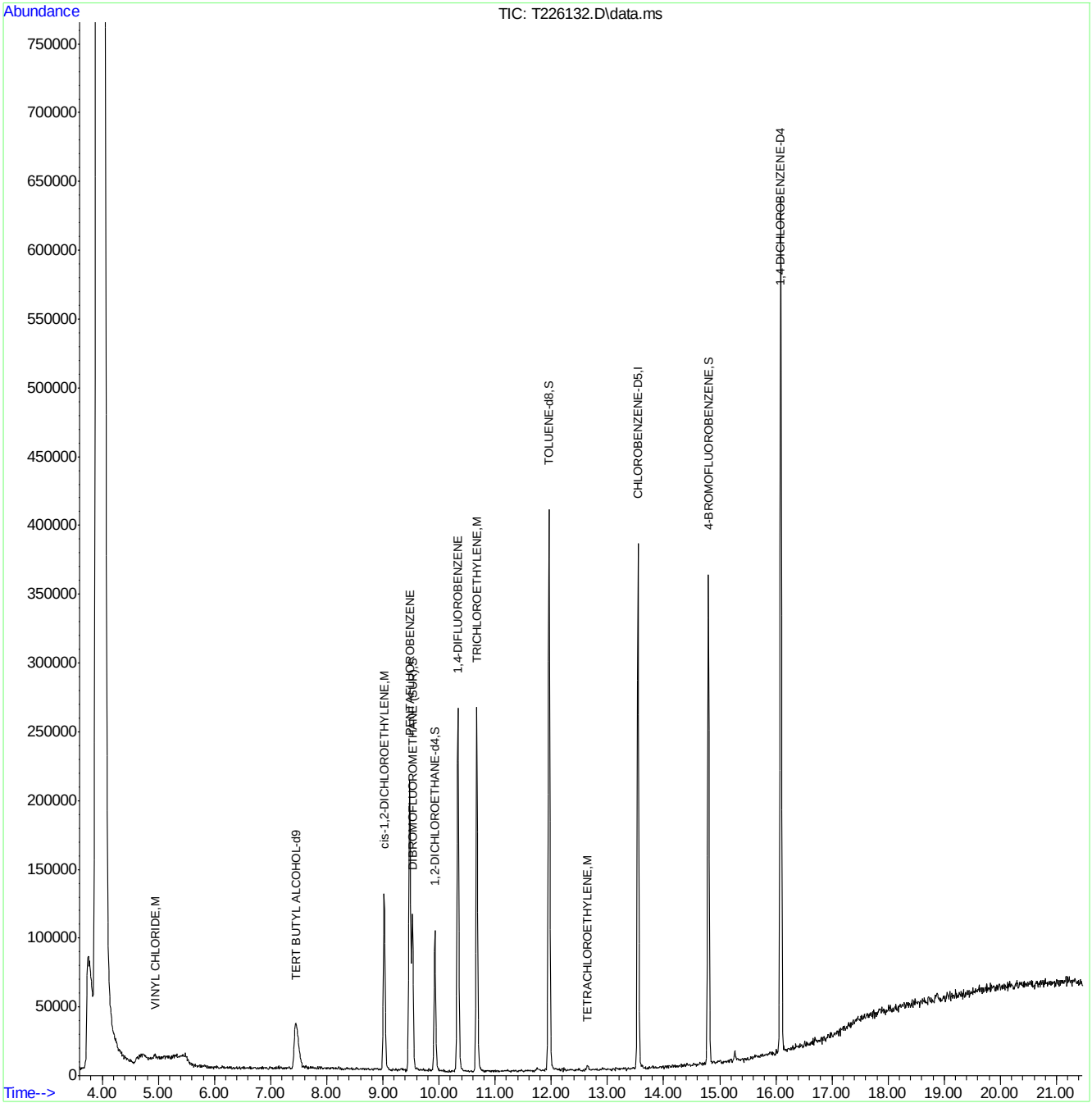
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.454	65	105729	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.477	168	166253	30.00	PPB	-0.01
49) 1,4-DIFLUOROBENZENE	10.339	114	238100	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.544	117	241961	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.085	152	184795	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.524	113	73439	27.68	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 92.27%			
50) 1,2-DICHLOROETHANE-d4	9.926	65	80262	32.20	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 107.33%			
67) TOLUENE-d8	11.960	98	300736	29.69	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 98.97%			
90) 4-BROMOFLUOROBENZENE	14.799	174	112630	29.24	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.47%			
Target Compounds						Qvalue
10) VINYL CHLORIDE	4.939	62	3749	0.53	PPb	84
36) cis-1,2-DICHLOROETHYLENE	9.022	96	63990	22.12	PPB	94
56) TRICHLOROETHYLENE	10.674	95	99193	43.24	PPB	96
72) TETRACHLOROETHYLENE	12.640	164	948	0.46	PPb	87

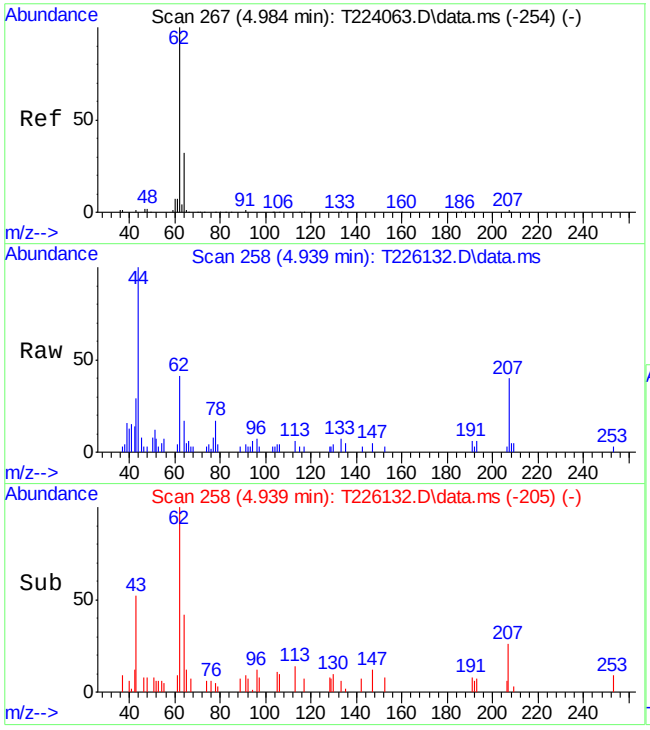
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226132.D
Acq On : 11 Aug 2017 7:32 pm
Operator : payalr
Sample : jc48691-5
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 14 15:03:09 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

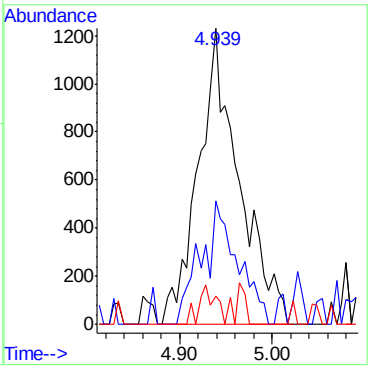


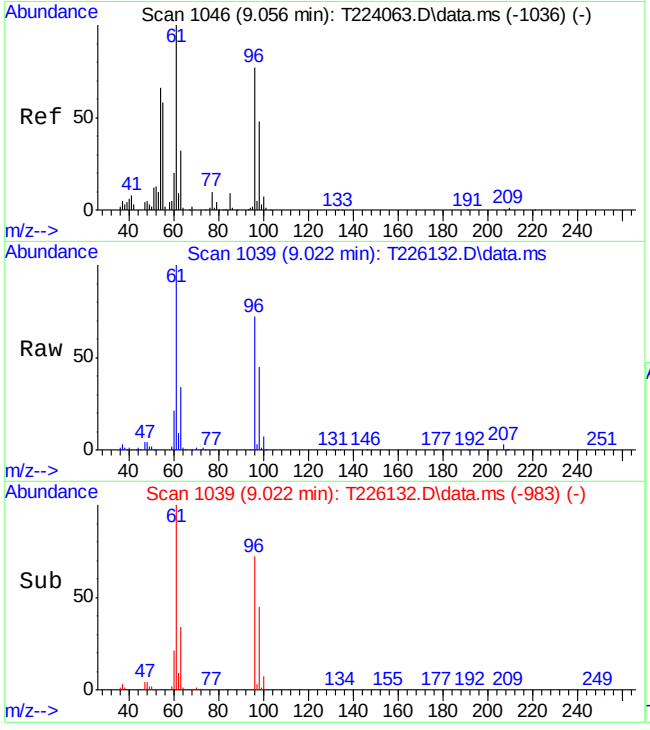


#10
VINYL CHLORIDE
Concen: 0.53 PPb
RT: 4.939 min Scan# 258
Delta R.T. -0.024 min
Lab File: T226132.D
Acq: 11 Aug 2017 7:32 pm

Tgt Ion: 62 Resp: 3749

Ion	Ratio	Lower	Upper
62	100		
64	41.8	1.0	61.0
61	9.4	0.0	38.0

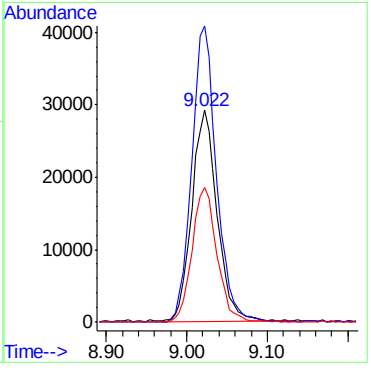


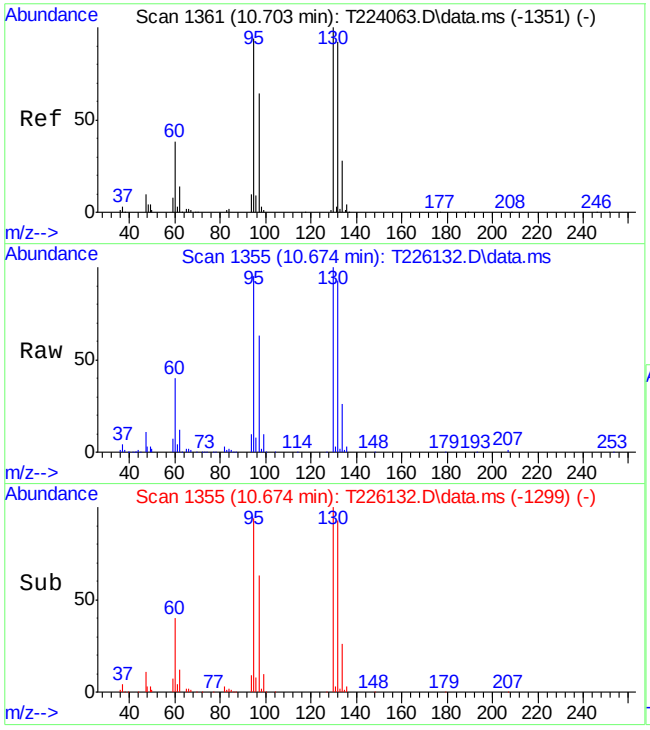


#36
cis-1,2-DICHLOROETHYLENE
Concen: 22.12 PPb
RT: 9.022 min Scan# 1039
Delta R.T. -0.005 min
Lab File: T226132.D
Acq: 11 Aug 2017 7:32 pm

Tgt Ion: 96 Resp: 63990

Ion	Ratio	Lower	Upper
96	100		
61	140.4	101.4	161.4
98	63.7	31.1	91.1

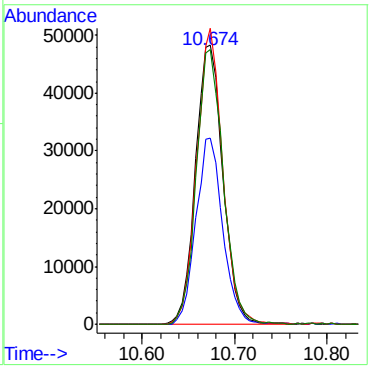


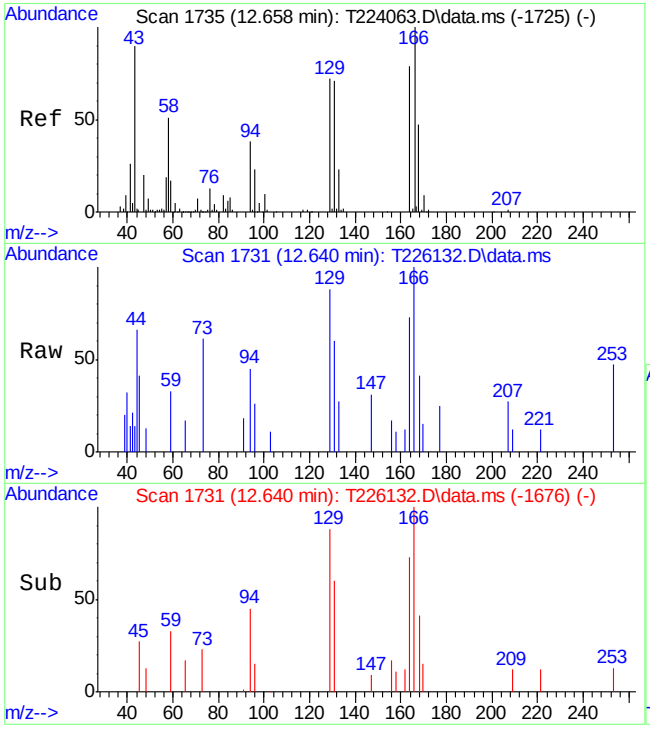


#56
TRICHLOROETHYLENE
Concen: 43.24 PPb
RT: 10.674 min Scan# 1355
Delta R.T. -0.005 min
Lab File: T226132.D
Acq: 11 Aug 2017 7:32 pm

Tgt Ion: 95 Resp: 99193

Ion	Ratio	Lower	Upper
95	100		
97	66.6	32.5	92.5
130	105.8	74.3	134.3
132	98.0	61.2	121.2

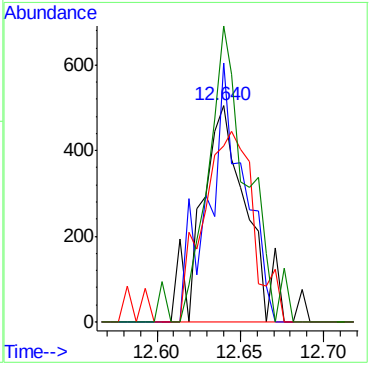




#72
TETRACHLOROETHYLENE
Concen: 0.46 PPb
RT: 12.640 min Scan# 1731
Delta R.T. -0.011 min
Lab File: T226132.D
Acq: 11 Aug 2017 7:32 pm

Tgt Ion:164 Resp: 948

Ion	Ratio	Lower	Upper
164	100		
129	119.8	62.4	122.4
131	81.4	59.3	119.3
166	136.6	100.2	160.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226133.D
Acq On : 11 Aug 2017 8:02 pm
Operator : payalr
Sample : jc48691-6
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Aug 14 15:04:12 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

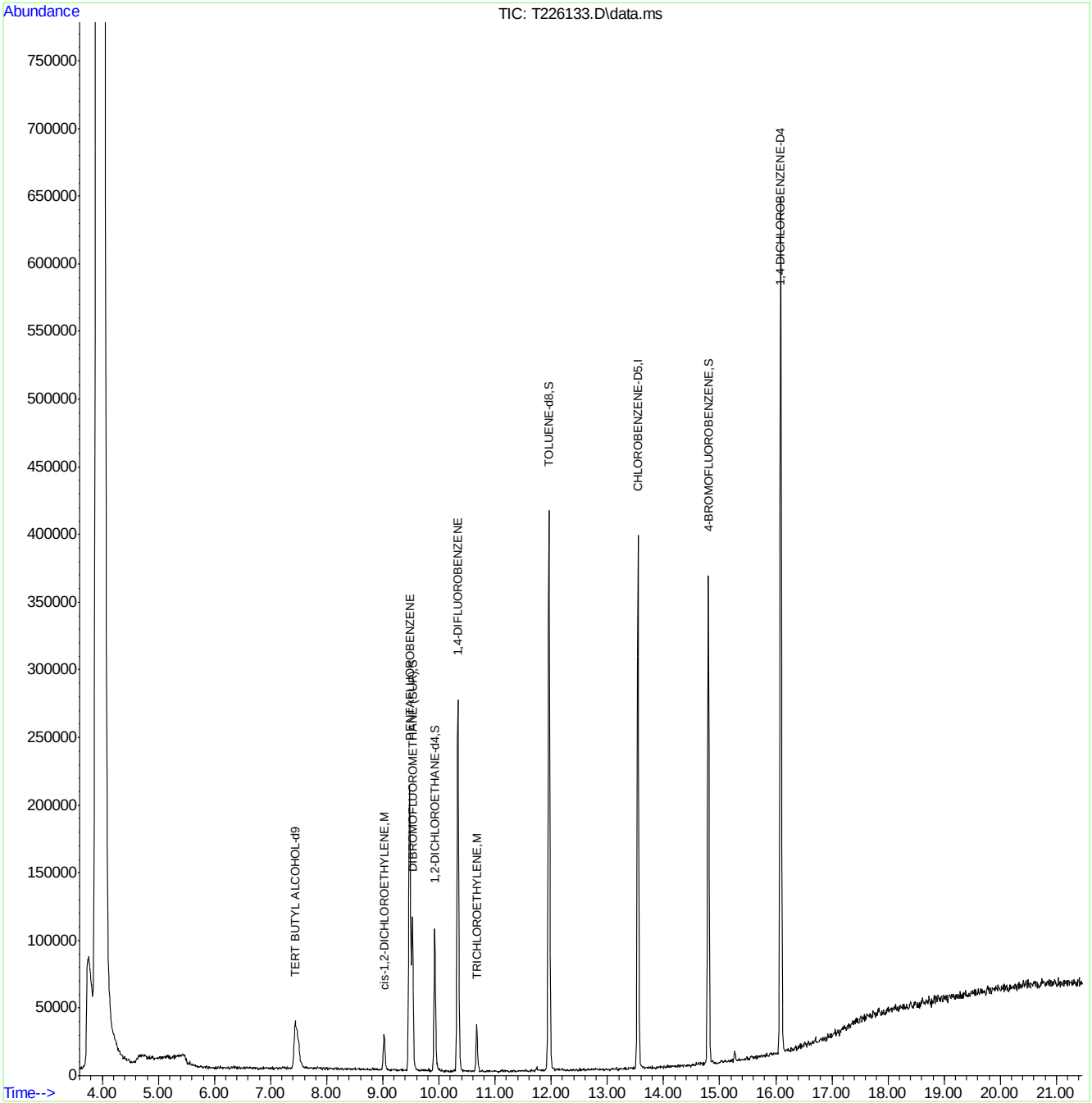
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.439	65	107477	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.478	168	166151	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.335	114	242148	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.545	117	245145	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.086	152	186260	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.525	113	74742	28.19	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 93.97%			
50) 1,2-DICHLOROETHANE-d4	9.922	65	82001	32.35	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 107.83%			
67) TOLUENE-d8	11.961	98	306926	29.91	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 99.70%			
90) 4-BROMOFLUOROBENZENE	14.800	174	115920	29.86	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 99.53%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.018	96	13807	4.78	PPb	92
56) TRICHLOROETHYLENE	10.675	95	12712	5.45	PPb	94

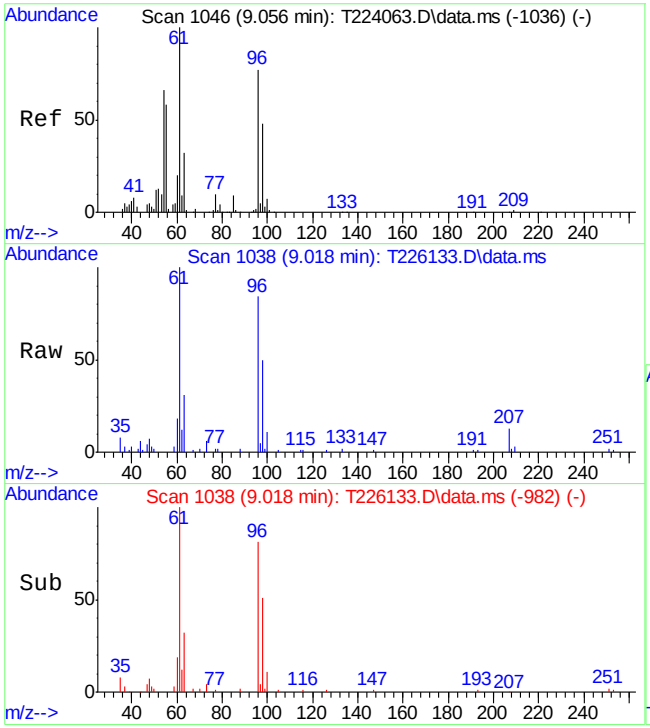
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226133.D
Acq On : 11 Aug 2017 8:02 pm
Operator : payalr
Sample : jc48691-6
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Aug 14 15:04:12 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

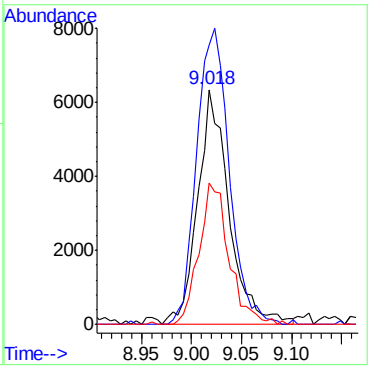


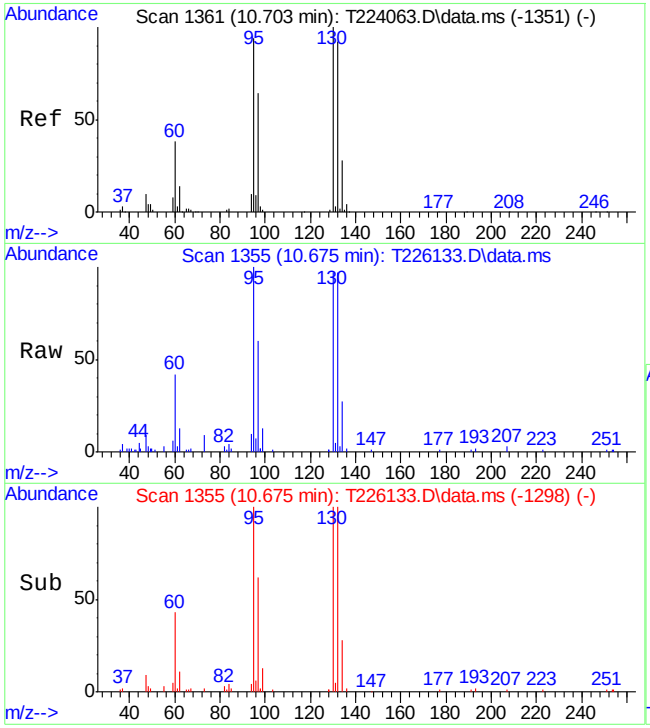


#36
cis-1,2-DICHLOROETHYLENE
Concen: 4.78 PPb
RT: 9.018 min Scan# 1038
Delta R.T. -0.009 min
Lab File: T226133.D
Acq: 11 Aug 2017 8:02 pm

Tgt Ion: 96 Resp: 13807

Ion	Ratio	Lower	Upper
96	100		
61	119.1	101.4	161.4
98	60.1	31.1	91.1

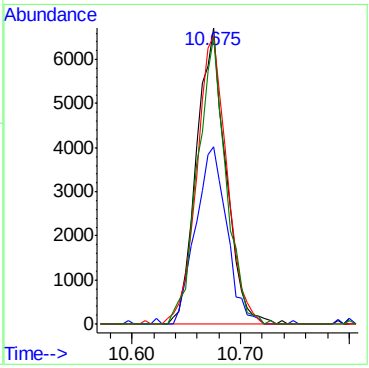




#56
TRICHLOROETHYLENE
Concen: 5.45 PPb
RT: 10.675 min Scan# 1355
Delta R.T. -0.004 min
Lab File: T226133.D
Acq: 11 Aug 2017 8:02 pm

Tgt Ion: 95 Resp: 12712

Ion	Ratio	Lower	Upper
95	100		
97	60.0	32.5	92.5
130	97.2	74.3	134.3
132	97.1	61.2	121.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226134.D
Acq On : 11 Aug 2017 8:32 pm
Operator : payalr
Sample : jc48691-7
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 14 15:05:01 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

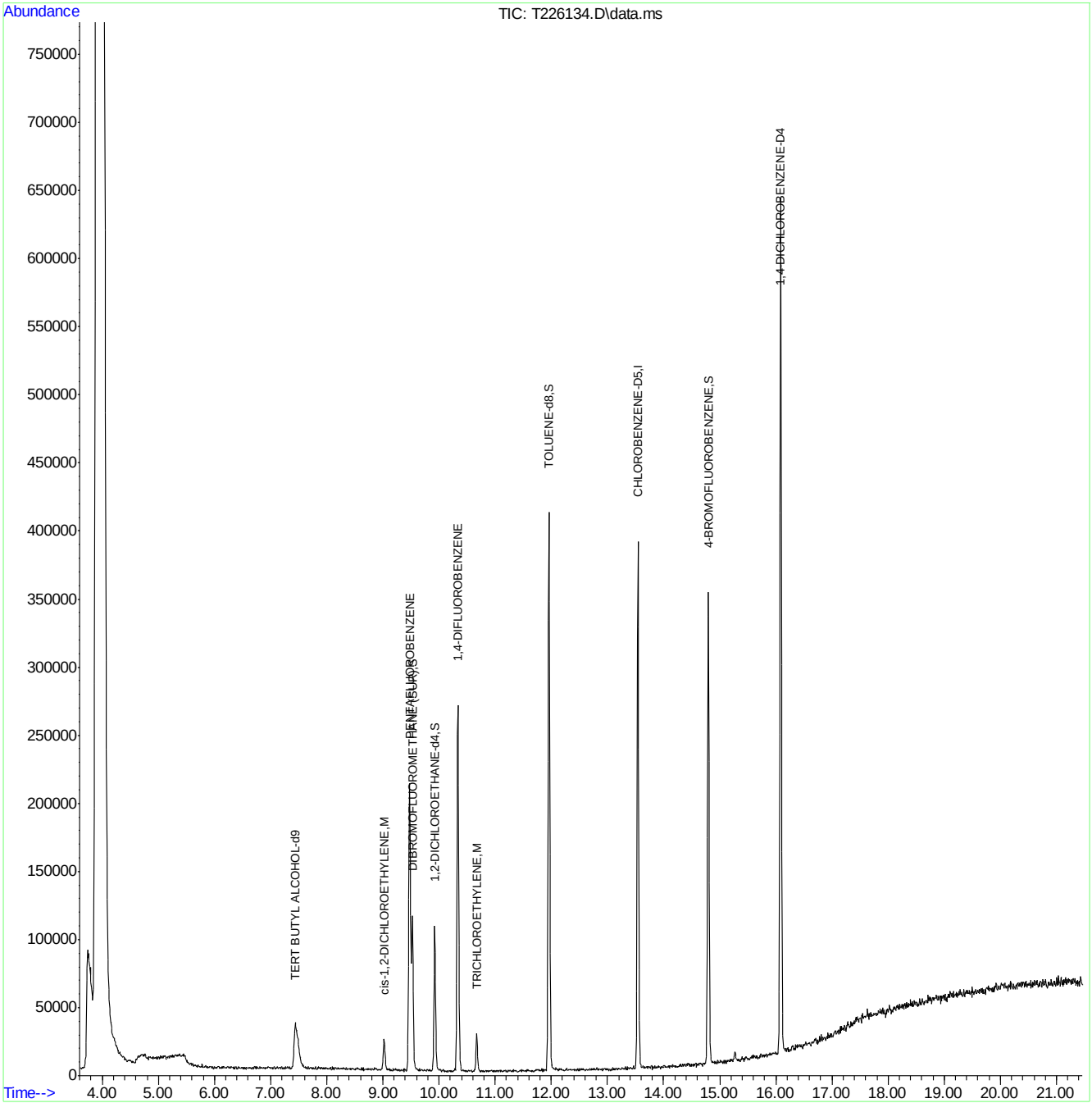
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.444	65	101572	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.478	168	167351	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.335	114	242053	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.545	117	244945	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.086	152	181290	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.525	113	73087	27.36	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 91.20%			
50) 1,2-DICHLOROETHANE-d4	9.922	65	83346	32.89	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 109.63%			
67) TOLUENE-d8	11.961	98	304751	29.72	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 99.07%			
90) 4-BROMOFLUOROBENZENE	14.800	174	113647	30.08	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 100.27%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.023	96	12484	4.29	PPb	89
56) TRICHLOROETHYLENE	10.675	95	11060	4.74	PPb	89

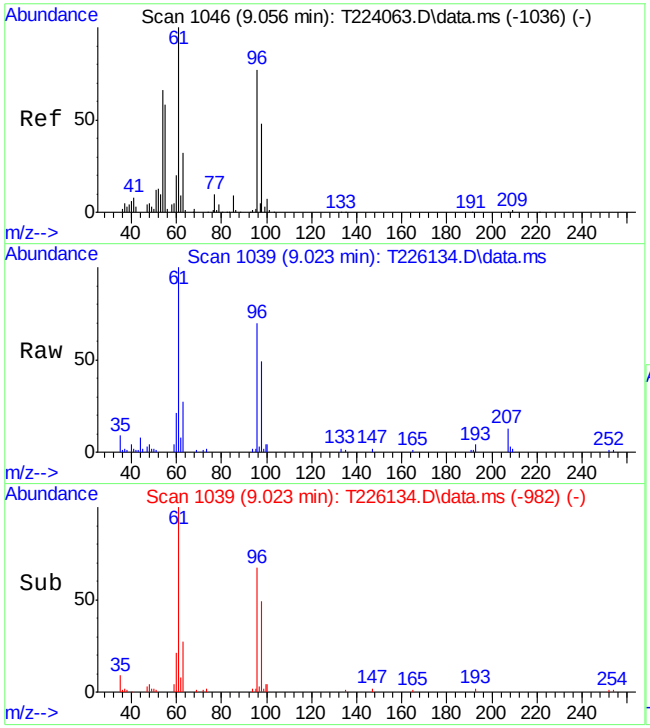
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226134.D
Acq On : 11 Aug 2017 8:32 pm
Operator : payalr
Sample : jc48691-7
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 14 15:05:01 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

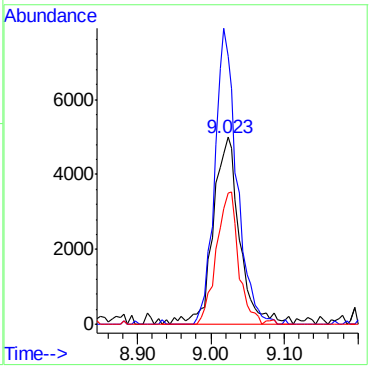


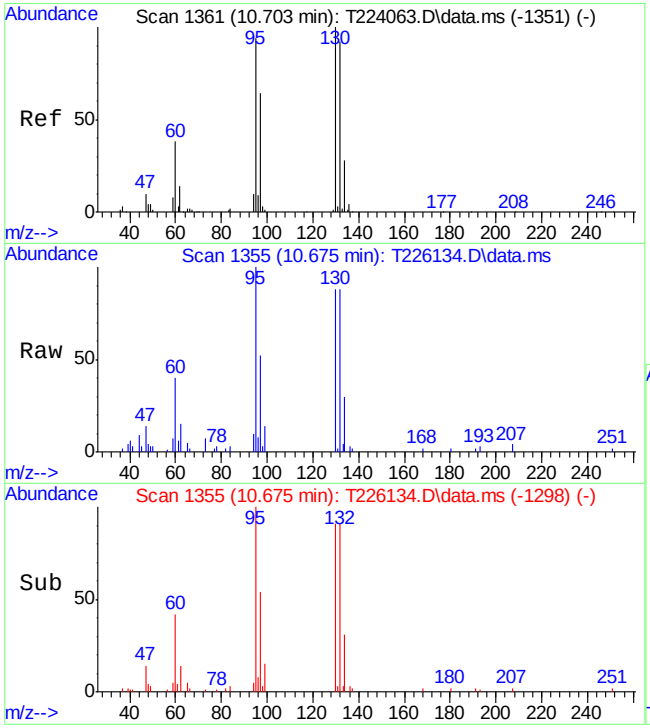


#36
cis-1,2-DICHLOROETHYLENE
Concen: 4.29 PPb
RT: 9.023 min Scan# 1039
Delta R.T. -0.004 min
Lab File: T226134.D
Acq: 11 Aug 2017 8:32 pm

Tgt Ion: 96 Resp: 12484

Ion	Ratio	Lower	Upper
96	100		
61	143.7	101.4	161.4
98	70.2	31.1	91.1

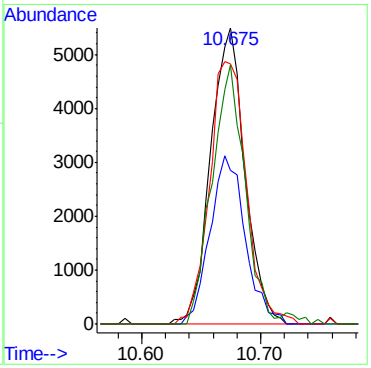




#56
TRICHLOROETHYLENE
Concen: 4.74 PPb
RT: 10.675 min Scan# 1355
Delta R.T. -0.004 min
Lab File: T226134.D
Acq: 11 Aug 2017 8:32 pm

Tgt Ion: 95 Resp: 11060

Ion	Ratio	Lower	Upper
95	100		
97	51.8	32.5	92.5
130	87.8	74.3	134.3
132	87.6	61.2	121.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226135.D
Acq On : 11 Aug 2017 9:02 pm
Operator : payalr
Sample : jc48691-8
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 14 15:05:41 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

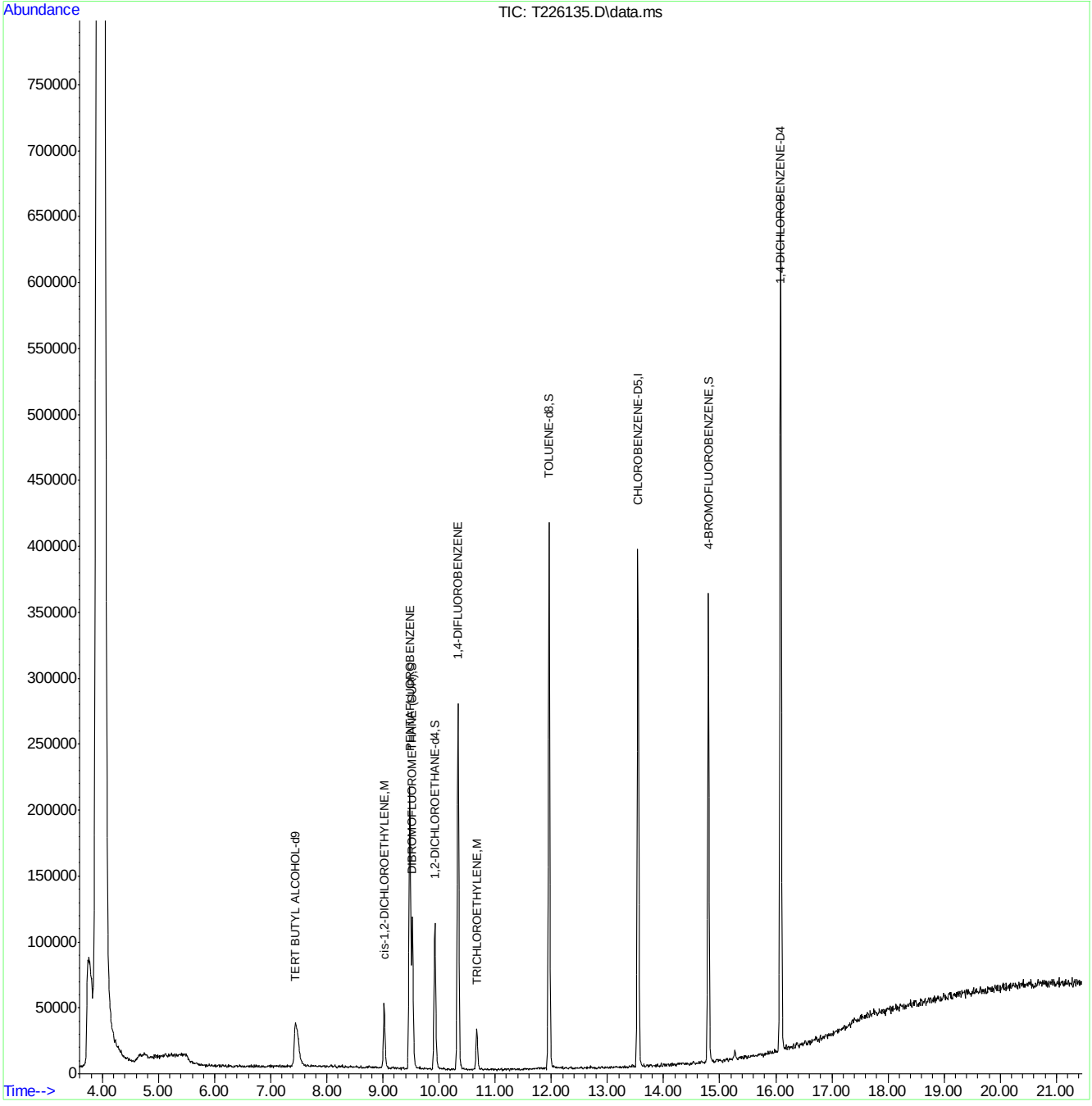
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.435	65	102436	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.479	168	166981	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.337	114	242842	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.541	117	245818	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.088	152	188886	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.521	113	75042	28.16	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 93.87%			
50) 1,2-DICHLOROETHANE-d4	9.924	65	82703	32.53	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 108.43%			
67) TOLUENE-d8	11.957	98	307154	29.85	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 99.50%			
90) 4-BROMOFLUOROBENZENE	14.801	174	116011	29.47	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.23%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.024	96	26435	9.10	PPb	92
56) TRICHLOROETHYLENE	10.671	95	11235	4.80	PPb	91

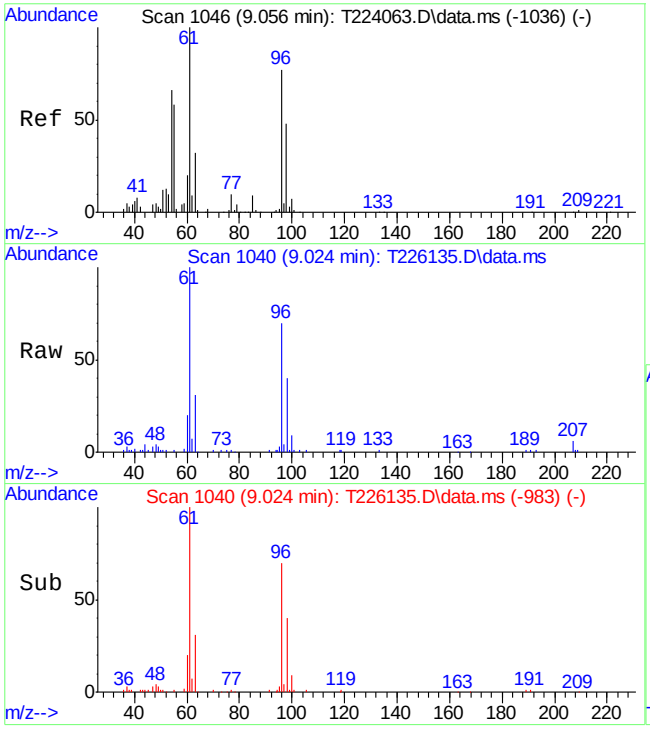
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226135.D
Acq On : 11 Aug 2017 9:02 pm
Operator : payalr
Sample : jc48691-8
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 14 15:05:41 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

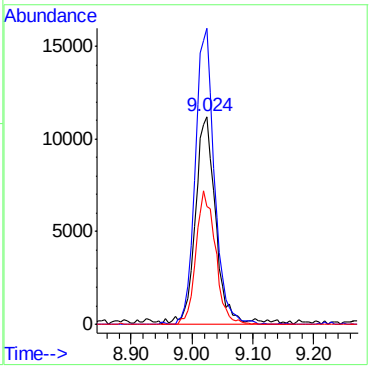


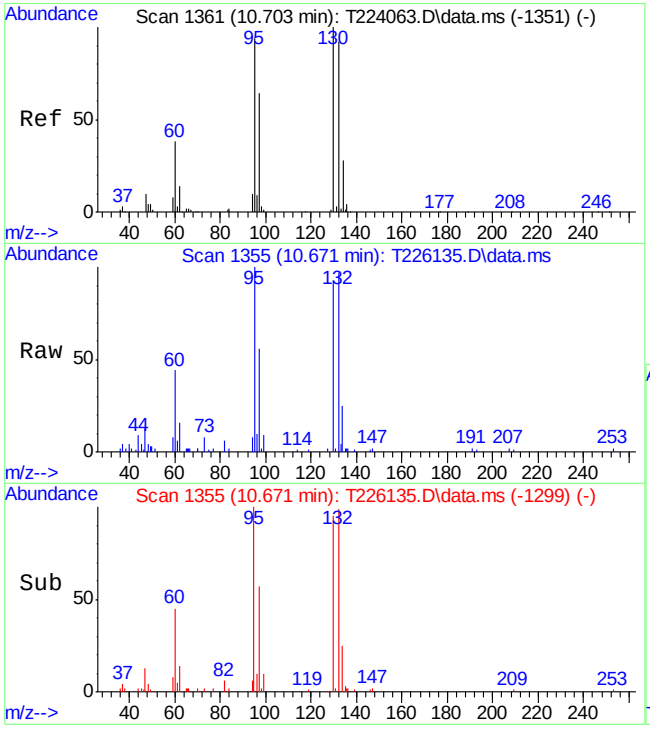


#36
cis-1,2-DICHLOROETHYLENE
Concen: 9.10 PPb
RT: 9.024 min Scan# 1040
Delta R.T. -0.002 min
Lab File: T226135.D
Acq: 11 Aug 2017 9:02 pm

Tgt Ion: 96 Resp: 26435

Ion	Ratio	Lower	Upper
96	100		
61	142.4	101.4	161.4
98	56.7	31.1	91.1

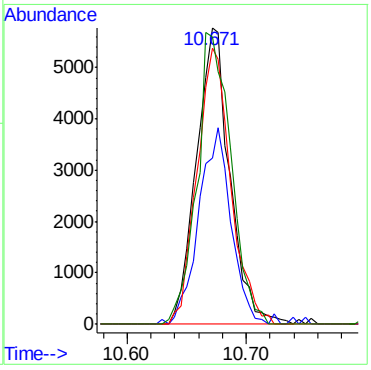




#56
TRICHLOROETHYLENE
Concen: 4.80 PPb
RT: 10.671 min Scan# 1355
Delta R.T. -0.008 min
Lab File: T226135.D
Acq: 11 Aug 2017 9:02 pm

Tgt Ion: 95 Resp: 11235

Ion	Ratio	Lower	Upper
95	100		
97	54.8	32.5	92.5
130	93.1	74.3	134.3
132	97.1	61.2	121.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226136.D
Acq On : 11 Aug 2017 9:33 pm
Operator : payalr
Sample : jc48691-9
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 14 15:06:22 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

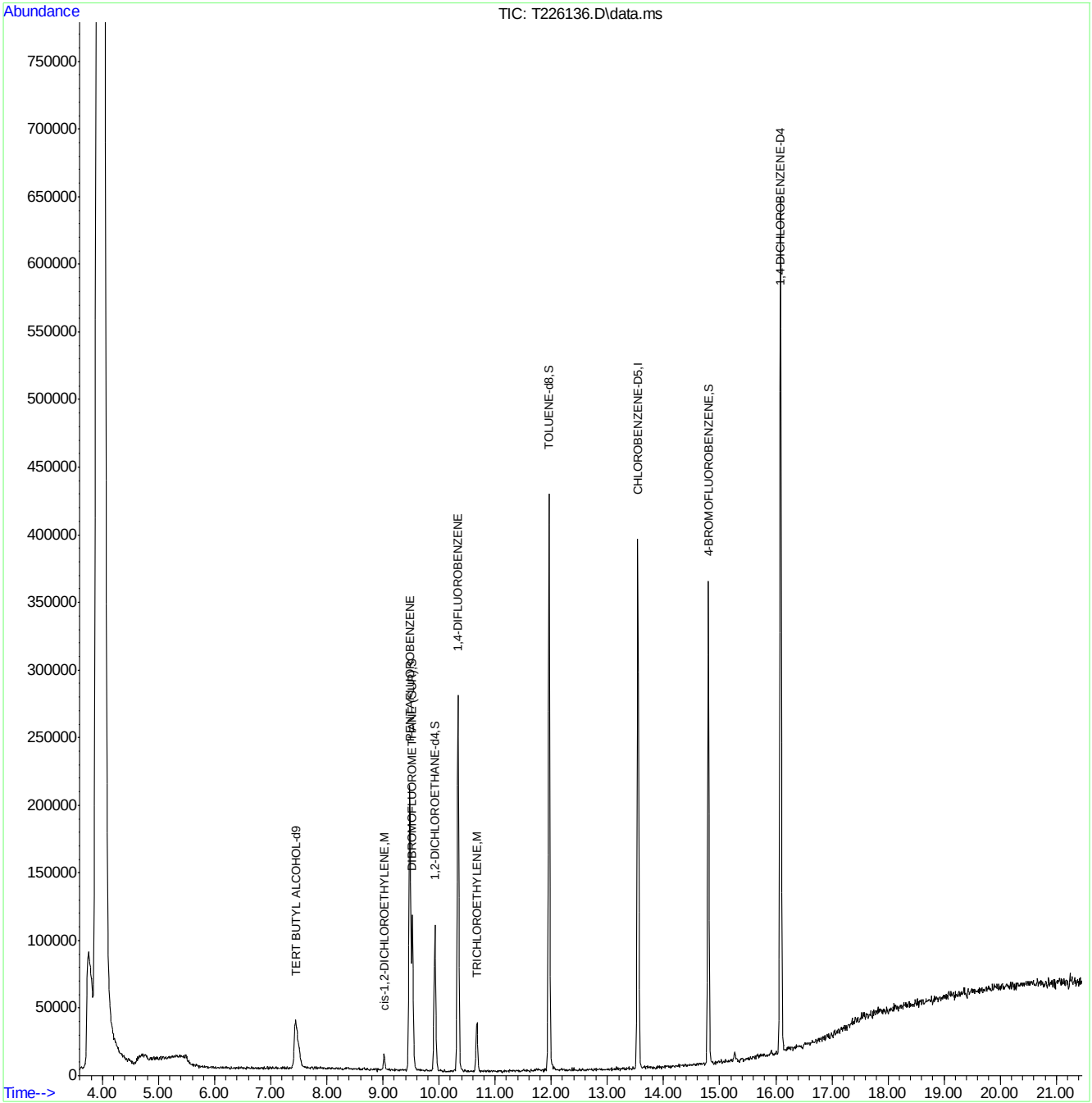
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.446	65	105320	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.480	168	168742	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.337	114	243554	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.542	117	243793	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.088	152	186444	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.522	113	76132	28.27	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 94.23%			
50) 1,2-DICHLOROETHANE-d4	9.924	65	85271	33.44	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 111.47%			
67) TOLUENE-d8	11.958	98	307445	30.12	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 100.40%			
90) 4-BROMOFLUOROBENZENE	14.802	174	112803	29.03	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 96.77%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.020	96	6909	2.35	PPb	84
56) TRICHLOROETHYLENE	10.677	95	13183	5.62	PPb	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

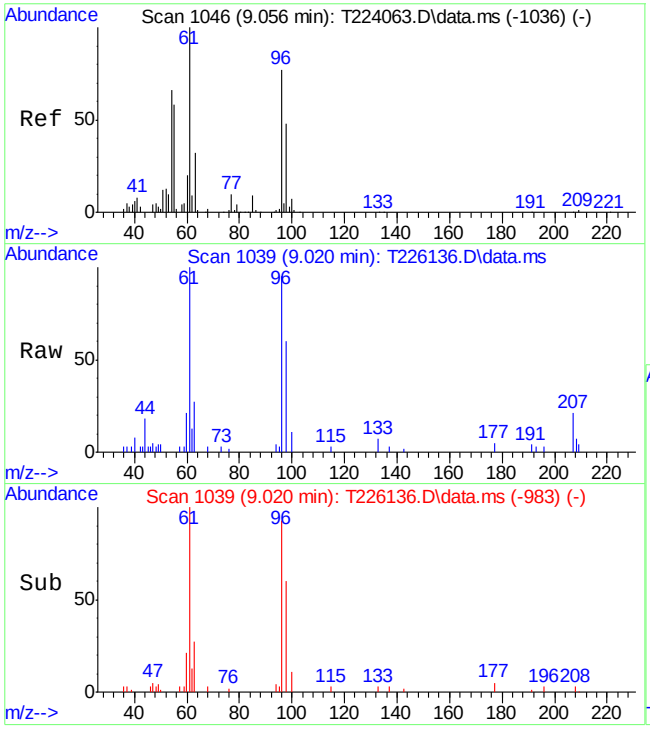
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226136.D
Acq On : 11 Aug 2017 9:33 pm
Operator : payalr
Sample : jc48691-9
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 14 15:06:22 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration



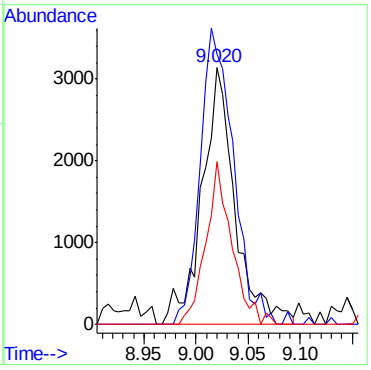
SGS ACCUTEST JC48691

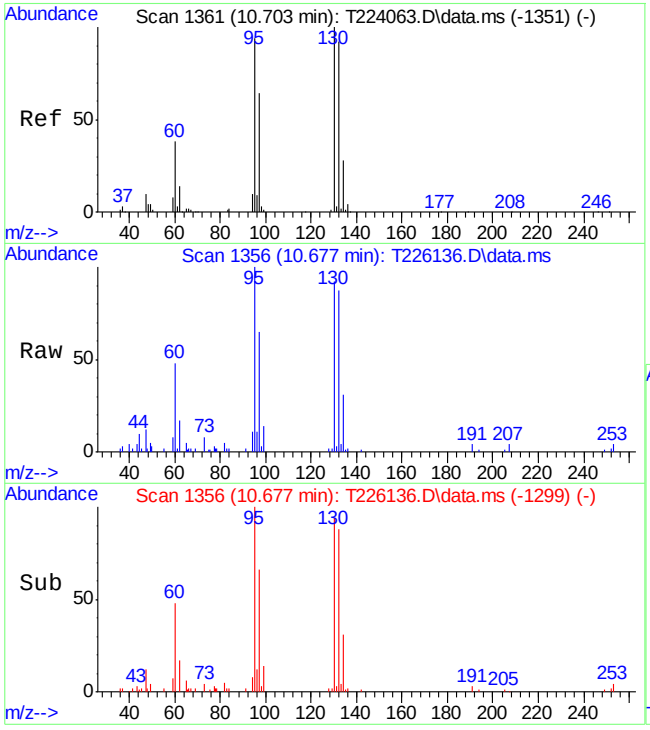


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.35 PPb
RT: 9.020 min Scan# 1039
Delta R.T. -0.007 min
Lab File: T226136.D
Acq: 11 Aug 2017 9:33 pm

Tgt Ion: 96 Resp: 6909

Ion	Ratio	Lower	Upper
96	100		
61	105.1	101.4	161.4
98	63.3	31.1	91.1

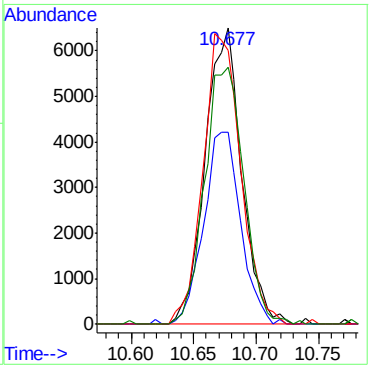




#56
TRICHLOROETHYLENE
Concen: 5.62 PPb
RT: 10.677 min Scan# 1356
Delta R.T. -0.002 min
Lab File: T226136.D
Acq: 11 Aug 2017 9:33 pm

Tgt Ion: 95 Resp: 13183

Ion	Ratio	Lower	Upper
95	100		
97	64.9	32.5	92.5
130	92.5	74.3	134.3
132	86.9	61.2	121.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226131.D
Acq On : 11 Aug 2017 7:02 pm
Operator : payalr
Sample : jc48691-10
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 14 15:01:45 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

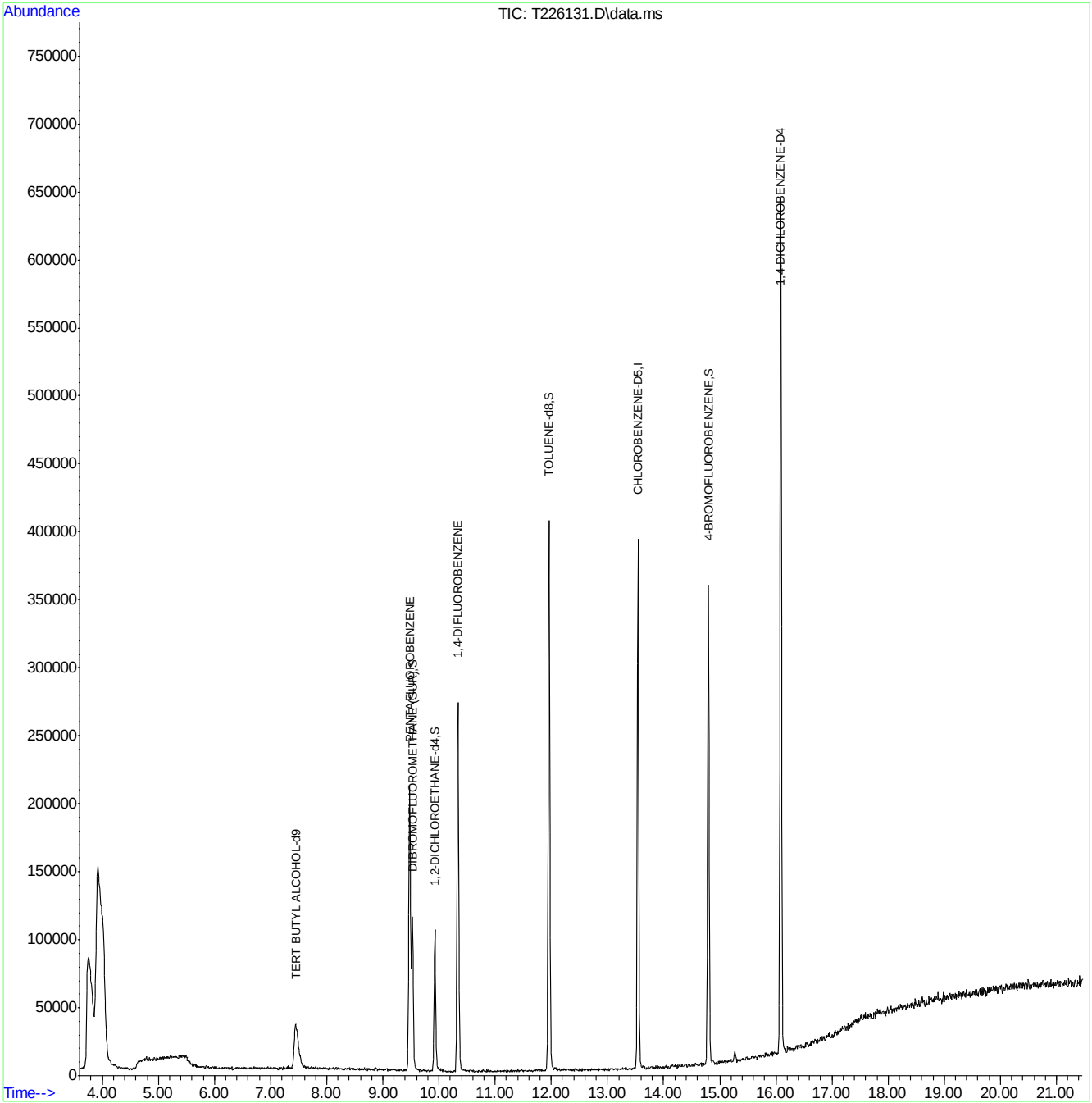
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.449	65	101227	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.477	168	162065	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.335	114	239195	30.00	PPb	-0.01
66) CHLOROBENZENE-D5	13.545	117	241436	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.085	152	186319	30.00	PPB	-0.01
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.524	113	74013	28.61	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 95.37%			
50) 1,2-DICHLOROETHANE-d4	9.927	65	81120	32.40	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 108.00%			
67) TOLUENE-d8	11.960	98	298667	29.55	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 98.50%			
90) 4-BROMOFLUOROBENZENE	14.799	174	113685	29.28	PPB	-0.01
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.60%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226131.D
Acq On : 11 Aug 2017 7:02 pm
Operator : payalr
Sample : jc48691-10
Misc : MS18996,VT9285,W,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 14 15:01:45 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration



SGS ACCUTEST JC48691

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226121.D
Acq On : 11 Aug 2017 1:58 pm
Operator : payalr
Sample : mb
Misc : MS18990,VT9285,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 14 14:50:54 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.442	65	94774	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.481	168	154652	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.338	114	223491	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.543	117	226570	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.089	152	173902	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.523	113	67935	27.52	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 91.73%			
50) 1,2-DICHLOROETHANE-d4	9.925	65	73158	31.27	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 104.23%			
67) TOLUENE-d8	11.959	98	278871	29.40	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 98.00%			
90) 4-BROMOFLUOROBENZENE	14.803	174	107389	29.63	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.77%			
Target Compounds						Qvalue
112) 1,2,4-TRICHLOROBENZENE	18.290	180	4787	0.56	PPB	86
113) 1,2,3-TRICHLOROBENZENE	18.876	180	11100	1.73	PPB	95
114) NAPHTHALENE	18.604	128	22464	1.57	PPb	97

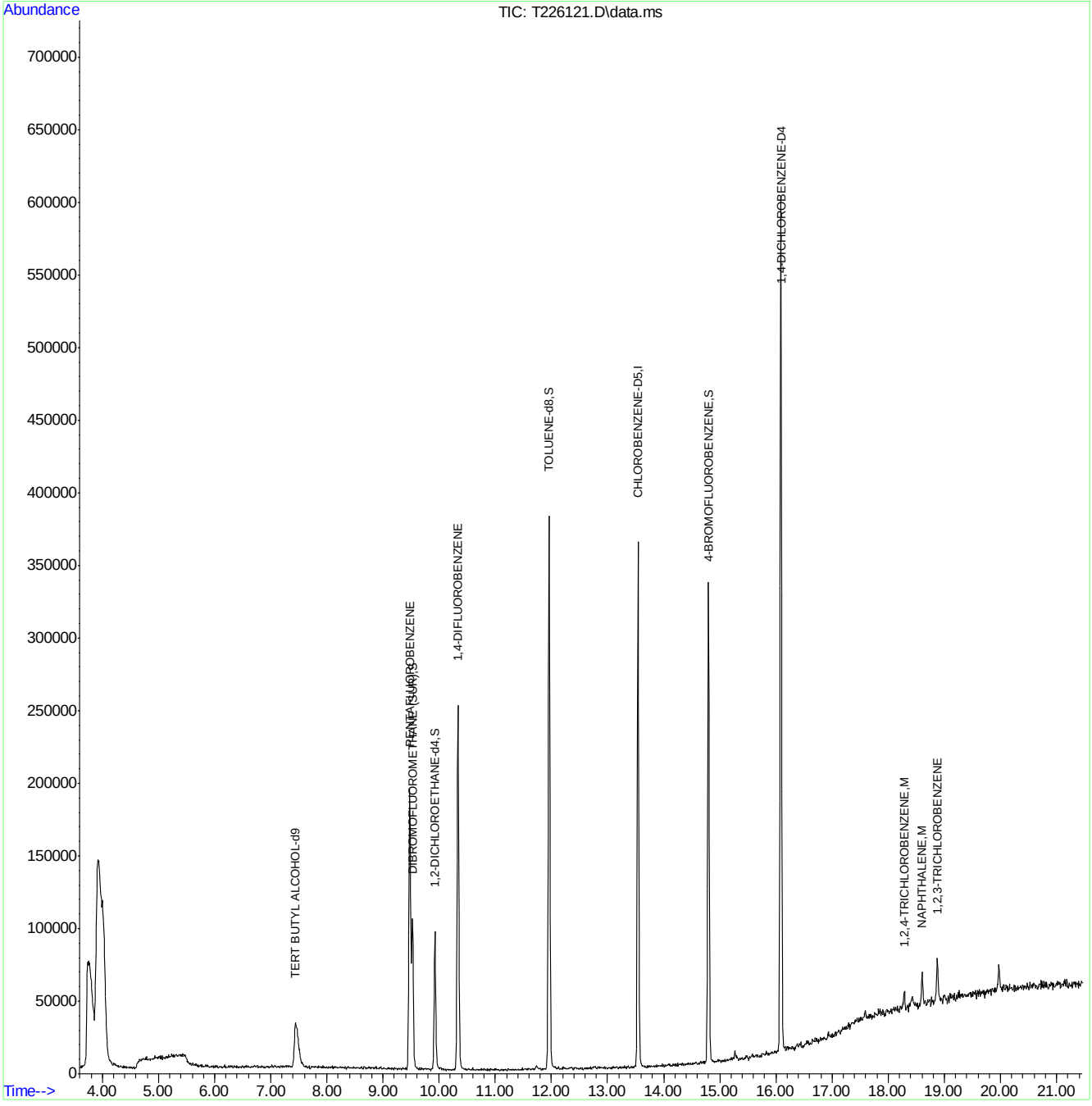
(#) = qualifier out of range (m) = manual integration (+) = signals summed

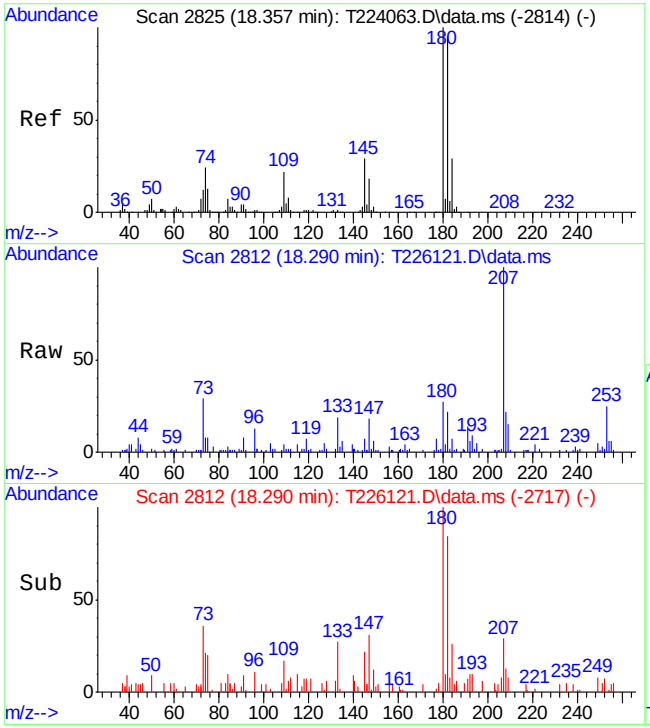
SGS ACCUTEST JC48691

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T core\vt9285\
Data File : T226121.D
Acq On : 11 Aug 2017 1:58 pm
Operator : payalr
Sample : mb
Misc : MS18990,VT9285,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 14 14:50:54 2017
Quant Method : C:\MSDChem\1\METHODS\MT9264.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jul 20 14:57:09 2017
Response via : Initial Calibration

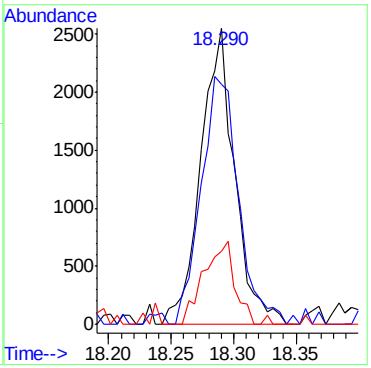


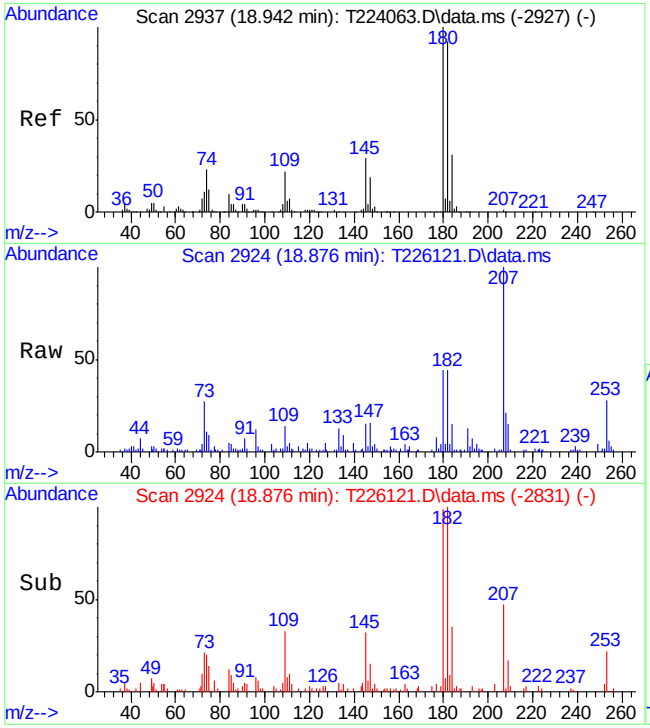


#112
1,2,4-TRICHLOROBENZENE
Concen: 0.56 PPB
RT: 18.290 min Scan# 2812
Delta R.T. -0.004 min
Lab File: T226121.D
Acq: 11 Aug 2017 1:58 pm

Tgt Ion:180 Resp: 4787

Ion	Ratio	Lower	Upper
180	100		
182	78.2	63.1	123.1
184	24.7	0.0	59.0

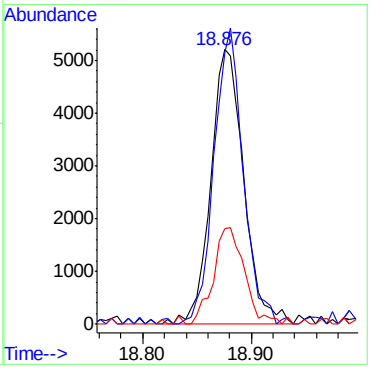


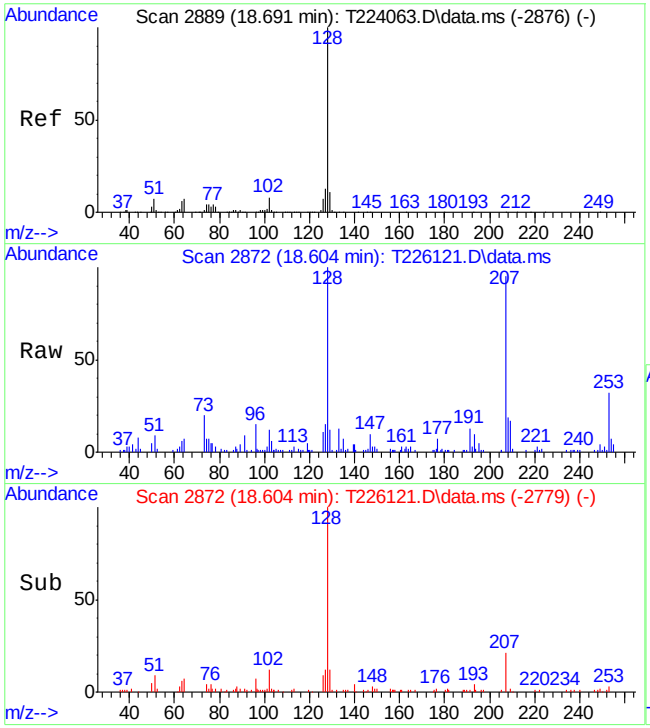


#113
1,2,3-TRICHLOROBENZENE
Concen: 1.73 PPB
RT: 18.876 min Scan# 2924
Delta R.T. -0.015 min
Lab File: T226121.D
Acq: 11 Aug 2017 1:58 pm

Tgt Ion:180 Resp: 11100

Ion	Ratio	Lower	Upper
180	100		
182	99.0	75.9	115.9
184	35.0	9.4	49.4

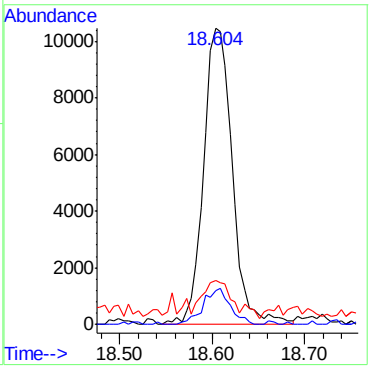




#114
NAPHTHALENE
Concen: 1.57 PPb
RT: 18.604 min Scan# 2872
Delta R.T. -0.015 min
Lab File: T226121.D
Acq: 11 Aug 2017 1:58 pm

Tgt Ion:128 Resp: 22464

Ion	Ratio	Lower	Upper
128	100		
129	11.5	0.0	40.3
127	11.7	0.0	42.7



7.2.1
7

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:16	MA42588-STD1	1		STDA
12:20	MA42588-STD2	1		STDB
12:24	ZZZZZZ	1		
12:28	ZZZZZZ	1		
12:34	MA42588-ICV1	1		
12:41	MA42588-ICB1	1		
12:47	MA42588-ICCV1	1		
12:58	MA42588-CCB1	1		
13:04	MA42588-CRI1	1		
13:08	MA42588-CRID1	1		
13:12	MA42588-ICSA1	1		
13:17	MA42588-ICSAB1	1		
13:21	MA42588-HSTD1	1		
13:25	MA42588-HSTD2	1		
13:29	ZZZZZZ	1		
13:34	ZZZZZZ	1		
13:38	ZZZZZZ	1		
13:42	MA42588-CCV1	1		
13:46	MA42588-CCB2	1		
13:51	MA42588-CRID2	1		
13:55	MP2376-MB1	1		
14:00	MP2376-B1	1		
14:04	MP2376-S1	1		
14:08	MP2376-S2	1		
14:12	JC48613-1	1		(sample used for QC only; not part of login JC48691)
14:16	MP2376-SD1	5		
14:20	ZZZZZZ	1		
14:25	ZZZZZZ	1		
14:29	MA42588-CCV2	1		
14:33	MA42588-CCB3	1		
14:37	ZZZZZZ	1		
14:42	ZZZZZZ	1		
14:46	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:50	ZZZZZZ	1		
14:55	ZZZZZZ	1		
14:59	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:07	ZZZZZZ	1		
15:12	ZZZZZZ	1		
15:16	MA42588-CCV3	1		
15:20	MA42588-CCB4	1		
15:24	ZZZZZZ	1		
15:29	ZZZZZZ	1		
15:33	ZZZZZZ	1		
15:37	ZZZZZZ	1		
15:42	ZZZZZZ	1		
15:46	MP2366-MB1	1		Ni> 1/2 dl
15:50	MP2366-B1	1		
15:54	MP2366-S1	1		S high
15:58	MP2366-S2	1		S high
16:02	MA42588-CCV4	1		
16:06	MA42588-CCB5	1		
16:11	JC48635-2	1		(sample used for QC only; not part of login JC48691)
16:15	MP2366-SD1	5		S high
16:19	ZZZZZZ	1		
16:24	ZZZZZZ	1		
16:28	ZZZZZZ	1		
16:32	ZZZZZZ	1		
16:37	ZZZZZZ	1		
16:41	ZZZZZZ	1		
16:45	ZZZZZZ	1		
16:50	MA42588-CCV5	1		
16:54	MA42588-CCB6	1		
16:58	ZZZZZZ	1		
17:02	ZZZZZZ	1		
17:07	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:11	ZZZZZZ	1		
17:15	ZZZZZZ	1		
17:19	ZZZZZZ	1		
17:24	MP2314-MB2	5		
17:28	MP2314-B2	5		
17:32	MP2314-S1	1		
17:36	MA42588-CCV6	1		
17:40	MA42588-CCB7	1		
17:45	MP2314-S2	1		
17:49	JC48093-14	1		(sample used for QC only; not part of login JC48691)
17:53	MP2314-SD1	5		
17:58	ZZZZZZ	1		
18:02	MP2337-SD1	5		
18:06	ZZZZZZ	5		
18:11	ZZZZZZ	10		
18:15	ZZZZZZ	10		
18:19	ZZZZZZ	10		
18:24	MA42588-CCV7	1		
18:28	MA42588-CCB8	1		
18:32	MA42588-CRI2	1		
18:36	MA42588-CRID3	1		
18:41	MA42588-ICSA2	1		
18:45	MA42588-ICSAB2	1		
18:49	MA42588-CCV8	1		
18:53	MA42588-CCB9	1		
18:58	ZZZZZZ	50		
19:02	ZZZZZZ	10		
19:06	ZZZZZZ	50		
19:11	MP2380-MB1	1		
19:15	MP2380-B1	1		
19:19	MP2380-S1	1		
19:23	MP2380-S2	1		
19:27	JC48674-14	1		(sample used for QC only; not part of login JC48691)

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:31	MP2380-SD1	5		bad dilution
19:36	MA42588-CCV9	1		
19:40	MA42588-CCB10	1		
19:44	ZZZZZZ	1		
19:49	ZZZZZZ	1		
19:53	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:02	ZZZZZZ	1		
20:06	ZZZZZZ	1		
20:10	ZZZZZZ	1		
20:14	ZZZZZZ	1		
20:19	ZZZZZZ	1		
20:23	MA42588-CCV10	1		
20:27	MA42588-CCB11	1		
20:32	ZZZZZZ	1		
20:36	ZZZZZZ	1		
20:40	ZZZZZZ	1		
20:45	ZZZZZZ	1		
20:49	ZZZZZZ	1		
20:53	ZZZZZZ	1		
20:58	ZZZZZZ	1		
21:02	ZZZZZZ	1		
21:06	ZZZZZZ	1		
21:11	MA42588-CCV11	1		
21:15	MA42588-CCB12	1		
21:19	MP2383-MB1	1		
21:23	MP2383-B1	1		
21:27	MP2383-S1	1		
21:31	MP2383-S2	1		
21:36	JC48637-2	1		(sample used for QC only; not part of login JC48691)
21:40	MP2383-SD1	5		
21:44	ZZZZZZ	1		
21:48	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
21:53	ZZZZZZ	1		
21:57	MA42588-CCV12	1		
22:01	MA42588-CCB13	1		
22:05	ZZZZZZ	1		
22:09	ZZZZZZ	1		
22:14	ZZZZZZ	1		
22:18	ZZZZZZ	1		
22:22	ZZZZZZ	1		
22:26	ZZZZZZ	1		
22:31	ZZZZZZ	1		
22:35	ZZZZZZ	1		
22:39	ZZZZZZ	1		
22:43	MA42588-CCV13	1		
22:47	MA42588-CCB14	1		
22:52	ZZZZZZ	1		
22:56	ZZZZZZ	1		
23:00	ZZZZZZ	1		
23:04	ZZZZZZ	1		
23:09	ZZZZZZ	1		
23:13	ZZZZZZ	1		
23:17	MA42588-CCV14	1		
23:21	MA42588-CCB15	1		
23:25	MA42588-CRI3	1		
23:30	MA42588-CRID4	1		
23:34	ZZZZZZ	25		
23:39	MA42588-ICSA3	1		
23:43	MA42588-ICSAB3	1		
23:47	MA42588-CCV15	1		
23:51	MA42588-CCB16	1		
23:55	ZZZZZZ	1		
00:00	ZZZZZZ	1		
00:04	ZZZZZZ	1		
00:08	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:13	ZZZZZZ	1		
00:17	ZZZZZZ	1		
00:21	ZZZZZZ	1		
00:26	ZZZZZZ	1		
00:30	ZZZZZZ	1		
00:35	ZZZZZZ	1		
00:39	ZZZZZZ	1		
00:43	ZZZZZZ	1		
00:48	MA42588-CCV16	1		
00:52	MA42588-CCB17	1		
00:56	MP2378-MB1	1		Batch to reanalyze for Sn, CRI out
01:01	MP2378-B1	1		
01:05	MP2378-S1	1		
01:09	MP2378-S2	1		
01:13	JC48430-20	1		(sample used for QC only; not part of login JC48691)
01:17	MP2378-SD1	5		
01:22	ZZZZZZ	1		
01:26	ZZZZZZ	1		
01:30	ZZZZZZ	1		
01:34	JC48691-7A	1		
01:39	MA42588-CCV17	1		
01:43	MA42588-CCB18	1		
01:47	JC48691-8A	1		
01:52	JC48691-9A	1		
01:56	ZZZZZZ	1		
02:00	ZZZZZZ	1		
02:05	ZZZZZZ	1		
02:09	MP2352-MB1	1		CCB out for Al EPA
02:13	MP2352-B1	1		CCB out for Al EPA
02:17	MP2352-S1	1		CCB out for Al EPA
02:21	MP2352-S2	1		CCB out for Al EPA
02:25	JC48482-1	1		(sample used for QC only; not part of login JC48691)
02:30	MA42588-CCV18	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
02:34	MA42588-CCB19	1		
02:38	MP2352-SD1	5		CCB out for Al EPA
02:42	ZZZZZZ	1		
02:47	ZZZZZZ	1		
02:51	MP2353-MB1	1		
02:55	MP2353-MB2	1		
03:00	MP2353-B1	1		
03:04	MP2353-B2	1		
03:08	MP2353-S1	1		
03:12	MP2353-S2	1		
03:16	MA42588-CCV19	1		
03:20	MA42588-CCB20	1		
03:24	JC48606-3	1		(sample used for QC only; not part of login JC48691)
03:29	MP2353-SD1	5		
03:33	ZZZZZZ	1		
03:37	MA42588-CCV20	1		
03:41	MA42588-CCB21	1		
08:36	MA42588-CCV21	1		
08:44	MA42588-CCB22	1		
08:51	MP2378-S1	2		
08:54	MP2378-S2	2		
08:58	JC48430-20	2		(sample used for QC only; not part of login JC48691)
09:02	MP2378-SD1	10		
---------->	Last reportable sample/prep for job JC48691			
09:12	MA42588-CCV22	1		
09:20	MA42588-CCB23	1		
---------->	Last reportable CCB for job JC48691			

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:16	MA42588-STD1	3046 R	80092 R	8135 R	7055 R
12:20	MA42588-STD2	2841	76151	7869	6046
12:24	ZZZZZZ	2926	77238	7855	6291
12:28	ZZZZZZ	3042	79838	8032	7037
12:34	MA42588-ICV1	2927	77599	7926	6309
12:41	MA42588-ICB1	3037	79632	7932	7012
12:47	MA42588-ICCV1	2924	76937	7824	6276
12:58	MA42588-CCB1	3040	80176	8054	7025
13:04	MA42588-CRI1	2997	79449	8023	6824
13:08	MA42588-CRID1	No results reported for the elements associated with this internal standard.			
13:12	MA42588-ICSA1	2695	72346	7548	5567
13:17	MA42588-ICSAB1	2697	72990	7633	5580
13:21	MA42588-HSTD1	2988	79214	8043	6800
13:25	MA42588-HSTD2	2757	73724	7693	5660
13:29	ZZZZZZ	2971	79669	8075	6896
13:34	ZZZZZZ	2964	80330	8057	6963
13:38	ZZZZZZ	3060	81654	8240	7078
13:42	MA42588-CCV1	2944	78276	8046	6318
13:46	MA42588-CCB2	3064	81749	8248	7068
13:51	MA42588-CRID2	3055	81245	8255	7032
13:55	MP2376-MB1	3066	82432	8401	7082
14:00	MP2376-B1	2973	80098	8262	6486
14:04	MP2376-S1	2993	80713	8372	6410
14:08	MP2376-S2	2907	78507	8182	6237
14:12	JC48613-1	2947	79715	8242	6499
14:16	MP2376-SD1	3056	81960	8356	6947
14:20	ZZZZZZ	2948	79922	8330	6514
14:25	ZZZZZZ	2947	79902	8250	6510
14:29	MA42588-CCV2	2939	78094	7992	6313
14:33	MA42588-CCB3	3060	81069	8145	7067
14:37	ZZZZZZ	2867	77912	8078	6292
14:42	ZZZZZZ	2903	78675	8079	6418
14:46	ZZZZZZ	2926	79765	8176	6427

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:50	ZZZZZZ	2856	77861	7997	6292
14:55	ZZZZZZ	2837	77644	8025	6227
14:59	ZZZZZZ	2760	75581	7904	5942
15:03	ZZZZZZ	3126	83179	8364	7212
15:07	ZZZZZZ	3106	80218	8220	7163
15:12	ZZZZZZ	2869	78619	8145	6292
15:16	MA42588-CCV3	2944	79090	8067	6310
15:20	MA42588-CCB4	3146	84150	8415	7243
15:24	ZZZZZZ	2917	79629	8195	6438
15:29	ZZZZZZ	2862	78524	8116	6288
15:33	ZZZZZZ	2873	78386	8095	6308
15:37	ZZZZZZ	2852	77958	8134	6241
15:42	ZZZZZZ	2775	76754	8043	5975
15:46	MP2366-MB1	3063	82739	8376	7084
15:50	MP2366-B1	2977	80133	8230	6483
15:54	MP2366-S1	2779	76892	8048	5953
15:58	MP2366-S2	2773	76426	8011	5937
16:02	MA42588-CCV4	2965	79457	8140	6353
16:06	MA42588-CCB5	3084	82656	8320	7118
16:11	JC48635-2	2798	77768	8093	6123
16:15	MP2366-SD1	3028	82348	8399	6810
16:19	ZZZZZZ	2806	80732	8371	6479
16:24	ZZZZZZ	1715 !a	76856	8193	6001
16:28	ZZZZZZ	2814	78302	8190	6132
16:32	ZZZZZZ	2924	81314	8492	6536
16:37	ZZZZZZ	1728 !a	77100	8255	6003
16:41	ZZZZZZ	2764	79995	8310	6421
16:45	ZZZZZZ	2968	80954	8327	6554
16:50	MA42588-CCV5	2962	79724	8174	6353
16:54	MA42588-CCB6	3079	82605	8344	7105
16:58	ZZZZZZ	3016	81181	8327	6778
17:02	ZZZZZZ	2866	78810	8142	6239
17:07	ZZZZZZ	2965	80483	8293	6503

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:11	ZZZZZZ	2866	78925	8151	6253
17:15	ZZZZZZ	2778	77881	8167	6092
17:19	ZZZZZZ	2813	78142	8111	6177
17:24	MP2314-MB2	3081	82502	8347	7115
17:28	MP2314-B2	3068	82369	8277	6887
17:32	MP2314-S1	2907	79388	8153	6430
17:36	MA42588-CCV6	2960	80172	8177	6347
17:40	MA42588-CCB7	3082	82472	8270	7113
17:45	MP2314-S2	2899	79381	8026	6418
17:49	JC48093-14	2988	81323	8159	6804
17:53	MP2314-SD1	3083	81994	8159	7055
17:58	ZZZZZZ	3083	82035	8238	7113
18:02	MP2337-SD1	2994	81150	8115	6664
18:06	ZZZZZZ	3014	80655	8212	6670
18:11	ZZZZZZ	2982	79856	8190	6533
18:15	ZZZZZZ	2975	80206	8147	6518
18:19	ZZZZZZ	2755	75473	7985	5749
18:24	MA42588-CCV7	2982	79303	8050	6353
18:28	MA42588-CCB8	3077	81776	8099	7074
18:32	MA42588-CRI2	3040	80825	8061	6877
18:36	MA42588-CRID3	3058	81127	8055	7011
18:41	MA42588-ICSA2	2782	75003	7663	5699
18:45	MA42588-ICSAB2	2756	74490	7635	5645
18:49	MA42588-CCV8	3015	79893	8058	6416
18:53	MA42588-CCB9	3117	82854	8146	7159
18:58	ZZZZZZ	2996	80834	8046	6496
19:02	ZZZZZZ	2715	73848	7870	5678
19:06	ZZZZZZ	2983	80345	8110	6473
19:11	MP2380-MB1	3060	81353	8138	7061
19:15	MP2380-B1	3042	81045	8176	6606
19:19	MP2380-S1	2945	78752	7968	6307
19:23	MP2380-S2	2945	78936	7891	6298
19:27	JC48674-14	3018	79204	8139	6658

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:31	MP2380-SD1	No results reported for the elements associated with this internal standard.			
19:36	MA42588-CCV9	2935	77933	7752	6267
19:40	MA42588-CCB10	3055	80939	7911	7020
19:44	ZZZZZZ	2582	70941	7739	5202
19:49	ZZZZZZ	3032	79269	7875	6676
19:53	ZZZZZZ	2966	79187	7894	6508
19:57	ZZZZZZ	2963	78534	7759	6485
20:02	ZZZZZZ	3087	82059	8038	6879
20:06	ZZZZZZ	3007	79400	7806	6537
20:10	ZZZZZZ	2961	78418	7745	6406
20:14	ZZZZZZ	2992	79190	7794	6548
20:19	ZZZZZZ	2915	78345	7950	6099
20:23	MA42588-CCV10	2948	77186	7587	6281
20:27	MA42588-CCB11	3062	80263	7726	7023
20:32	ZZZZZZ	2843	75831	7668	5996
20:36	ZZZZZZ	2989	78865	7725	6614
20:40	ZZZZZZ	2902	76956	7659	6171
20:45	ZZZZZZ	3061	80249	7793	7017
20:49	ZZZZZZ	3067	80145	7793	7026
20:53	ZZZZZZ	2932	78538	7699	6524
20:58	ZZZZZZ	2938	77964	7633	6516
21:02	ZZZZZZ	2950	78670	7754	6559
21:06	ZZZZZZ	3019	80135	7796	6744
21:11	MA42588-CCV11	3029	79576	7852	6451
21:15	MA42588-CCB12	3052	79659	7726	7022
21:19	MP2383-MB1	3050	79661	7697	6970
21:23	MP2383-B1	2946	77032	7534	6375
21:27	MP2383-S1	2969	77395	7621	6386
21:31	MP2383-S2	3090	81001	7910	6620
21:36	JC48637-2	3142	81351	7907	7011
21:40	MP2383-SD1	3119	81329	7824	7095
21:44	ZZZZZZ	3246	82765	8025	6598
21:48	ZZZZZZ	3089	80507	7935	6518

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
21:53	ZZZZZZ	3094	80675	7924	6482
21:57	MA42588-CCV12	2970	76486	7348	6329
22:01	MA42588-CCB13	3087	78377	7440	7063
22:05	ZZZZZZ	3152	80052	7649	6773
22:09	ZZZZZZ	3137	80443	7719	6626
22:14	ZZZZZZ	3130	79875	7678	6689
22:18	ZZZZZZ	3140	80435	7678	6743
22:22	ZZZZZZ	3145	80353	7588	6846
22:26	ZZZZZZ	3144	79471	7554	6714
22:31	ZZZZZZ	3105	79478	7559	6619
22:35	ZZZZZZ	3151	80218	7665	6681
22:39	ZZZZZZ	3129	79634	7567	6588
22:43	MA42588-CCV13	2999	76405	7363	6371
22:47	MA42588-CCB14	3109	79135	7470	7092
22:52	ZZZZZZ	3137	79519	7528	6616
22:56	ZZZZZZ	3105	79754	7519	6537
23:00	ZZZZZZ	3125	79552	7578	6637
23:04	ZZZZZZ	3065	78609	7415	6624
23:09	ZZZZZZ	3109	79141	7443	6832
23:13	ZZZZZZ	3046	78280	7432	6697
23:17	MA42588-CCV14	3002	76381	7316	6369
23:21	MA42588-CCB15	3110	79490	7442	7097
23:25	MA42588-CRI3	3072	78733	7383	6900
23:30	MA42588-CRID4	3103	79347	7428	7036
23:34	ZZZZZZ	3106	79518	7445	7052
23:39	MA42588-ICSA3	2754	71467	6917	5620
23:43	MA42588-ICSAB3	2753	71113	6877	5627
23:47	MA42588-CCV15	2999	76913	7294	6358
23:51	MA42588-CCB16	3165	75981	7408	7209
23:55	ZZZZZZ	3119	79735	7497	7085
00:00	ZZZZZZ	3126	79734	7460	7104
00:04	ZZZZZZ	2839	74139	7125	6077
00:08	ZZZZZZ	3104	78892	7340	7091

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
00:13	ZZZZZZ	3186	75956	7181	6315
00:17	ZZZZZZ	3100	78860	7356	7058
00:21	ZZZZZZ	3122	79841	7486	7094
00:26	ZZZZZZ	3134	79353	7405	7135
00:30	ZZZZZZ	3086	78996	7319	7015
00:35	ZZZZZZ	2825	74458	7040	6034
00:39	ZZZZZZ	3088	78859	7371	7075
00:43	ZZZZZZ	3110	79134	7393	7085
00:48	MA42588-CCV16	3007	76566	7235	6362
00:52	MA42588-CCB17	3109	79034	7438	7086
00:56	MP2378-MB1	3144	80474	7562	7213
01:01	MP2378-B1	3073	78917	7546	6643
01:05	MP2378-S1	2914	75761	7513	5970
01:09	MP2378-S2	2921	76204	7499	5987
01:13	JC48430-20	2899	76477	7516	6060
01:17	MP2378-SD1	3001	77760	7325	6547
01:22	ZZZZZZ	2997	78284	7479	6589
01:26	ZZZZZZ	3066	79288	7524	6739
01:30	ZZZZZZ	3125	80056	7604	6957
01:34	JC48691-7A	2960	77666	7450	6438
01:39	MA42588-CCV17	2977	76445	7149	6299
01:43	MA42588-CCB18	3098	79265	7394	7064
01:47	JC48691-8A	2994	78446	7458	6560
01:52	JC48691-9A	2997	78343	7453	6558
01:56	ZZZZZZ	2775	72946	7363	5559
02:00	ZZZZZZ	2657	72725	7396	5652
02:05	ZZZZZZ	2836	74890	7438	5873
02:09	MP2352-MB1	3160	80881	7637	7267
02:13	MP2352-B1	3079	79081	7583	6643
02:17	MP2352-S1	3016	78349	7472	6431
02:21	MP2352-S2	3028	78008	7425	6440
02:25	JC48482-1	3061	78858	7492	6741
02:30	MA42588-CCV18	2977	76367	7208	6293

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA42588
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
02:34	MA42588-CCB19	3081	79131	7335	7021
02:38	MP2352-SD1	3078	78827	7379	6934
02:42	ZZZZZZ	3077	79216	7507	6773
02:47	ZZZZZZ	3067	79148	7440	6746
02:51	MP2353-MB1	3085	78927	7303	7031
02:55	MP2353-MB2	3140	80534	7525	7212
03:00	MP2353-B1	3063	78627	7440	6595
03:04	MP2353-B2	3054	78518	7449	6592
03:08	MP2353-S1	3069	79383	7569	6537
03:12	MP2353-S2	3067	79477	7540	6521
03:16	MA42588-CCV19	2978	76550	7208	6296
03:20	MA42588-CCB20	3101	79518	7352	7052
03:24	JC48606-3	3149	80562	7635	6982
03:29	MP2353-SD1	3090	79461	7382	6992
03:33	ZZZZZZ	2878	74699	7186	6031
03:37	MA42588-CCV20	2964	75873	7192	6273
03:41	MA42588-CCB21	3152	79260	7254	7156
08:36	MA42588-CCV21	2960	75687	7068	6245
08:44	MA42588-CCB22	3086	78348	7285	7020
08:51	MP2378-S1	2956	76005	7288	6147
08:54	MP2378-S2	3008	77292	7405	6249
08:58	JC48430-20	2922	75977	7239	6216
09:02	MP2378-SD1	3071	76427	7235	6764
09:12	MA42588-CCV22	2958	75917	7071	6251
09:20	MA42588-CCB23	3124	79645	7187	7092

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time:			12:41		12:58		13:46		14:33	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2								
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	-0.40	<10	-0.60	<10	-0.10	<10	-0.70	<10
Iron	100	2.7	0.40	<100	2.6	<100	-1.0	<100	1.9	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	-0.70	<10	-0.60	<10	0.20	<10	-0.90	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	0.10	<20	0.10	<20	0.10	<20	0.20	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time:			12:41		12:58		13:46		14:33	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time:			15:20		16:06		16:54		17:40	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2								
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	-0.40	<10	0.10	<10	-0.10	<10	0.30	<10
Iron	100	2.7	1.2	<100	4.6	<100	1.0	<100	3.1	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	-1.0	<10	-0.10	<10	-0.90	<10	-0.40	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	0.0	<20	0.20	<20	0.10	<20	0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time:			15:20		16:06		16:54		17:40	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time: / Sample ID:			18:28 CCB8		18:53 CCB9		19:40 CCB10		20:27 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2								
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	-0.70	<10	0.0	<10	-0.90	<10	0.20	<10
Iron	100	2.7	4.5	<100	-1.1	<100	3.2	<100	5.8	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	-1.4	<10	-1.2	<10	-1.1	<10	-1.4	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	0.30	<20	-0.20	<20	0.30	<20	0.30	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time: / Sample ID:			18:28 CCB8		18:53 CCB9		19:40 CCB10		20:27 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time: / Sample ID:			21:15 CCB12		22:01 CCB13		22:47 CCB14		23:21 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2								
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	-0.40	<10	-1.3	<10	-1.3	<10	-1.1	<10
Iron	100	2.7	7.0	<100	4.3	<100	2.0	<100	1.8	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	-0.50	<10	-0.80	<10	-0.30	<10	-0.80	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	-0.20	<20	0.0	<20	-0.20	<20	-0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time: / Sample ID:			21:15 CCB12		22:01 CCB13		22:47 CCB14		23:21 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

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BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time: / Sample ID:			23:51 CCB16		00:52 CCB17		01:43 CCB18		02:34 CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2								
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	-1.7	<10	-0.50	<10	-1.2	<10	-0.60	<10
Iron	100	2.7	1.9	<100	5.9	<100	2.9	<100	4.9	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	-0.20	<10	-1.3	<10	-0.90	<10	-0.60	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	-0.10	<20	-0.10	<20	0.0	<20	0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time:			23:51		00:52		01:43		02:34	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time: / Sample ID:			03:20 CCB20		03:41 CCB21		08:44 CCB22		09:20 CCB23	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	7.1	anr							
Antimony	6.0	1.9	anr							
Arsenic	3.0	1.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.6								
Boron	100	1.2								
Cadmium	3.0	.3	anr							
Calcium	5000	3.3	anr							
Chromium	10	.8	anr							
Cobalt	50	.5	anr							
Copper	10	.9	-1.7	<10	-1.2	<10	-0.90	<10	-1.1	<10
Iron	100	2.7	8.3	<100	4.6	<100	3.9	<100	6.6	<100
Lead	3.0	2.2	anr							
Lithium	50	3.1								
Magnesium	5000	17	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.4	anr							
Phosphorus	50	2.1								
Potassium	10000	47	anr							
Selenium	10	2.5	anr							
Silicon	200	2.2								
Silver	10	1	-1.4	<10	-1.0	<10	-2.0	<10	-0.70	<10
Sodium	10000	16	anr							
Strontium	10	.1								
Sulfur	50	4								
Thallium	2.0	1.9	anr							
Tin	10	1.3	anr							
Titanium	10	.6								
Tungsten	50	2								
Vanadium	50	.8	anr							
Zinc	20	.2	0.10	<20	0.0	<20	0.20	<20	0.30	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42588 Units: ug/l

Time:			03:20		03:41		08:44		09:20	
Sample ID:			CCB20		CCB21		CCB22		CCB23	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		12:47	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	2000	1960	98.0
Iron	40000	40900	102.3
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	247	98.8
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin	anr		
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2060	103.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		12:47	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		12:34			13:42			14:29	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1930	96.5	2000	1960	98.0	2000	1970	98.5
Iron	40000	39400	98.5	40000	40700	101.8	40000	40600	101.5
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	246	98.4	250	246	98.4	250	247	98.8
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2000	100.0	2000	2020	101.0	2000	2020	101.0

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		12:34			13:42			14:29	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		15:16			16:02			16:50	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1950	97.5	2000	1940	97.0	2000	1940	97.0
Iron	40000	40500	101.3	40000	39900	99.8	40000	39900	99.8
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	245	98.0	250	243	97.2	250	243	97.2
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2000	100.0	2000	1970	98.5	2000	1970	98.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		15:16			16:02			16:50	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		17:36			18:24			18:49	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1930	96.5	2000	1910	95.5	2000	1870	93.5
Iron	40000	39600	99.0	40000	39500	98.8	40000	38900	97.3
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	243	97.2	250	243	97.2	250	240	96.0
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	1970	98.5	2000	1950	97.5	2000	1920	96.0

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		17:36			18:24			18:49	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		19:36			20:23			21:11	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1940	97.0	2000	1910	95.5	2000	1850	92.5
Iron	40000	40400	101.0	40000	39900	99.8	40000	38000	95.0
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	246	98.4	250	245	98.0	250	236	94.4
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2000	100.0	2000	1990	99.5	2000	1930	96.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		19:36			20:23			21:11	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		21:57			22:43			23:17	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1850	92.5	2000	1820	91.0	2000	1820	91.0
Iron	40000	38700	96.8	40000	38200	95.5	40000	38300	95.8
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	241	96.4	250	239	95.6	250	240	96.0
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	1980	99.0	2000	1950	97.5	2000	1950	97.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		21:57			22:43			23:17	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		23:47			00:48			01:39	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1810	90.5	2000	1810	90.5	2000	1820	91.0
Iron	40000	38100	95.3	40000	38000	95.0	40000	38400	96.0
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	239	95.6	250	239	95.6	250	240	96.0
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	1940	97.0	2000	1920	96.0	2000	1930	96.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		23:47			00:48			01:39	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		02:30			03:16			03:37	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1820	91.0	2000	1820	91.0	2000	1820	91.0
Iron	40000	38100	95.3	40000	37900	94.8	40000	37700	94.3
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	241	96.4	250	241	96.4	250	243	97.2
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	1930	96.5	2000	1930	96.5	2000	1930	96.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		02:30			03:16			03:37	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		08:36			09:12	
Sample ID:	CCV	CCV21		CCV	CCV22	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	2000	1840	92.0	2000	1840	92.0
Iron	40000	38200	95.5	40000	38100	95.3
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	250	246	98.4	250	244	97.6
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin	anr					
Titanium						
Tungsten						
Vanadium	anr					
Zinc	2000	1940	97.0	2000	1940	97.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42588 Units: ug/l

Time:		08:36			09:12	
Sample ID:	CCV	CCV21		CCV	CCV22	
Metal	True	Results	% Rec	True	Results	% Rec
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42588 Units: ug/l

Time:		13:21			13:25	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	5000	5070	101.4			
Iron				150000	147000	98.0
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	625	611	97.8			
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin	anr					
Titanium						
Tungsten						
Vanadium	anr					
Zinc	5000	5250	105.0			

HIGH STANDARD CHECK SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42588 Units: ug/l

Time:		13:21			13:25	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

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LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42588 Units: ug/l

Time:				13:04		13:51		18:32	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	10.0	100.0			9.2	92.0
Iron	100	500		107	107.0			106	106.0
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	5.1	102.0			4.0	80.0
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10			anr					
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	21.0	105.0	10.5	105.0	20.3	101.5

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42588 Units: ug/l

Time:				13:04		13:51		18:32	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

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LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42588 Units: ug/l

Time:				18:36		23:25		23:30	
Sample ID:	CRI	CRIA	CRID	CRID3		CRI3		CRID4	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0			7.7	77.0		
Iron	100	500				104	104.0		
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0			4.1	82.0		
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	10.1	101.0	20.1	100.5	10.2	102.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42588 Units: ug/l

Time:				18:36		23:25		23:30	
Sample ID:	CRI	CRIA	CRID	CRID3		CRI3		CRID4	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

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INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42588 Units: ug/l

Time:			13:12		13:17		18:41		18:45	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	520000	104.0	521000	104.2	522000	104.4	521000	104.2
Antimony		1000	1.0		1040	104.0	1.3		1010	101.0
Arsenic		1000	-2.1		1080	108.0	1.2		1040	104.0
Barium		500	-0.30		531	106.2	-0.10		524	104.8
Beryllium		500	0.30		512	102.4	0.20		498	99.6
Bismuth		500	16.5		544	108.8	13.7		524	104.8
Boron		500	-0.80		502	100.4	-2.8		482	96.4
Cadmium		1000	0.40		1040	104.0	0.40		1010	101.0
Calcium	400000	400000	398000	99.5	399000	99.8	389000	97.3	389000	97.3
Chromium		500	1.7		491	98.2	2.2		475	95.0
Cobalt		500	0.70		496	99.2	1.1		481	96.2
Copper		500	1.1		532	106.4	2.7		510	102.0
Iron	200000	200000	197000	98.5	202000	101.0	189000	94.5	195000	97.5
Lead		1000	0.0		978	97.8	5.6		941	94.1
Lithium		500	7.4		557	111.4	7.2		546	109.2
Magnesium	500000	500000	524000	104.8	522000	104.4	507000	101.4	507000	101.4
Manganese		500	-2.5		507	101.4	-2.8		486	97.2
Molybdenum		500	-1.6		518	103.6	-1.7		492	98.4
Nickel		1000	-0.60		991	99.1	-0.60		969	96.9
Phosphorus		500	10.4		513	102.6	16.2		504	100.8
Potassium			-270		-390		-360		-370	
Selenium		1000	5.0		1020	102.0	2.5		966	96.6
Silicon		500	-21		489	97.8	-26		468	93.6
Silver		1000	3.8		1040	104.0	-0.10		1020	102.0
Sodium			70.7		70.7		92.9		100	
Strontium		500	1.1		541	108.2	1.3		533	106.6
Sulfur		500	-4.9		501	100.2	65.0		532	106.4
Thallium		1000	-0.40		1020	102.0	1.7		982	98.2
Tin		500	-7.7		463	92.6	-6.5		441	88.2
Titanium		500	-1.6		522	104.4	-1.0		510	102.0
Tungsten		500	11.3		499	99.8	6.5		487	97.4
Vanadium		500	-0.60		497	99.4	-0.40		489	97.8
Zinc		1000	-5.9		956	95.6	-6.5		899	89.9

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42588 Units: ug/l

Time:			13:12		13:17		18:41		18:45	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium		500	3.3		509	101.8	2.6		498	99.6

(*) Outside of QC limits
(anr) Analyte not requested

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INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42588 Units: ug/l

Time:			23:39		23:43	
Sample ID:	ICSA	ICSAB	ICSA3		ICSAB3	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	522000	104.4	522000	104.4
Antimony		1000	0.90		971	97.1
Arsenic		1000	-0.50		1010	101.0
Barium		500	0.0		519	103.8
Beryllium		500	0.20		491	98.2
Bismuth		500	12.2		500	100.0
Boron		500	-1.1		467	93.4
Cadmium		1000	0.20		986	98.6
Calcium	400000	400000	390000	97.5	393000	98.3
Chromium		500	1.5		482	96.4
Cobalt		500	1.0		476	95.2
Copper		500	2.4		493	98.6
Iron	200000	200000	186000	93.0	191000	95.5
Lead		1000	1.0		940	94.0
Lithium		500	5.7		534	106.8
Magnesium	500000	500000	513000	102.6	514000	102.8
Manganese		500	-2.9		487	97.4
Molybdenum		500	-1.9		476	95.2
Nickel		1000	-0.20		966	96.6
Phosphorus		500	19.0		498	99.6
Potassium			29.3		-340	
Selenium		1000	-5.0		928	92.8
Silicon		500	-24		450	90.0
Silver		1000	-3.2		1020	102.0
Sodium			8.5		27.3	
Strontium		500	0.80		525	105.0
Sulfur		500	-7.6		456	91.2
Thallium		1000	2.6		977	97.7
Tin		500	-7.4		440	88.0
Titanium		500	-1.6		513	102.6
Tungsten		500	7.2		484	96.8
Vanadium		500	-0.30		496	99.2
Zinc		1000	-6.4		912	91.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE081117M1.ICP Date Analyzed: 08/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42588 Units: ug/l

Time:			23:39		23:43	
Sample ID:	ICSA	ICSAB	ICSA3		ICSAB3	
Metal	True	True	Results	% Rec	Results	% Rec
Zirconium		500	2.0		498	99.6

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5081217W1.CSV Date Analyzed: 08/12/17 Methods: EPA 245.1
Analyst: JA Run ID: MA42592
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:18	MA42592-STD1	1		B=1.3620E-004 C=3.7373E-002 R=0.9998483
09:20	MA42592-STD2	1		STDB
09:21	MA42592-STD3	1		STDC
09:23	MA42592-STD4	1		STDD
09:24	MA42592-STD5	1		STDE
09:26	MA42592-STD6	1		STDF
09:29	MA42592-ICV1	1		
09:30	MA42592-ICB1	1		
09:32	MA42592-ICCV1	1		
09:33	MA42592-CCB1	1		
09:37	MA42592-CRI1	1		
09:39	MP2404-MB1	1		
09:40	MP2404-B1	1		
09:41	MP2404-S1	1		
09:43	MP2404-S2	1		
09:45	JC48720-1	1		(sample used for QC only; not part of login JC48691)
09:47	ZZZZZZ	1		
09:48	ZZZZZZ	1		
09:50	MA42592-CCV1	1		
09:51	MA42592-CCB2	1		
09:53	JC48691-7A	1		
09:54	JC48691-8A	1		
09:55	JC48691-9A	1		
---------->	Last reportable sample/prep for job JC48691			
09:57	ZZZZZZ	1		
09:58	ZZZZZZ	1		
09:59	ZZZZZZ	1		
10:01	ZZZZZZ	1		
10:04	MA42592-CRI2	1		
10:05	MA42592-CCV2	1		
10:07	MA42592-CCB3	1		
---------->	Last reportable CCB for job JC48691			

Refer to raw data for calibration curve and standards.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5081217W1.CSV Date Analyzed: 08/12/17 Methods: EPA 245.1
QC Limits: result < RL Run ID: MA42592 Units: ug/l

Time: / Sample ID:			09:30 ICB1		09:33 CCB1		09:51 CCB2		10:07 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.058	0.015	<0.20	-0.013	<0.20	-0.0027	<0.20	-0.0063	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST
154 of 209
JC48691

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5081217W1.CSV Date Analyzed: 08/12/17 Methods: EPA 245.1
QC Limits: 95 to 105 % Recovery Run ID: MA42592 Units: ug/l

Time:		09:32	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Mercury	2.5	2.5	100.0

(*) Outside of QC limits
(anr) Analyte not requested

8.2.2
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5081217W1.CSV Date Analyzed: 08/12/17 Methods: EPA 245.1
QC Limits: 90 to 110 % Recovery Run ID: MA42592 Units: ug/l

Time:		09:29			09:50			10:05	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	3	2.8	93.3	2.5	2.4	96.0	2.5	2.4	96.0

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5081217W1.CSV Date Analyzed: 08/12/17 Methods: EPA 245.1
QC Limits: 70 to 130 % Recovery Run ID: MA42592 Units: ug/l

Time:			09:37		10:04	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Mercury	0.20		0.20	100.0	0.20	100.0

(*) Outside of QC limits
(anr) Analyte not requested

8.2.4
8

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42598
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:42	MA42598-STD1	1		STDA
10:45	MA42598-STD2	1		STDB
10:48	ZZZZZZ	1		
10:51	ZZZZZZ	1		
10:55	MA42598-ICV1	1		
11:04	MA42598-ICB1	1		
11:10	MA42598-ICCV1	1		
11:20	MA42598-ICB2	1		
11:25	MA42598-CRI1	1		
11:28	MA42598-CRID1	1		See rerun
11:30	MA42598-ICSA1	1		
11:33	MA42598-ICSAB1	1		
11:36	MA42598-HSTD1	1		
11:39	MA42598-HSTD2	1		Minerals
11:42	ZZZZZZ	1		
11:45	ZZZZZZ	1		
11:48	ZZZZZZ	1		
11:50	MA42598-CCV1	1		
11:55	MA42598-CCB1	1		
11:59	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:05	ZZZZZZ	1		
12:08	MA42598-CRID2	1		
12:11	ZZZZZZ	1		
12:14	ZZZZZZ	1		
12:17	ZZZZZZ	2		
12:20	ZZZZZZ	2		
12:23	ZZZZZZ	5		
12:25	MA42598-CCV2	1		
12:28	MA42598-CCB2	1		
12:31	ZZZZZZ	5		
12:34	ZZZZZZ	1		
12:37	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42598
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:40	ZZZZZZ	2		
12:43	ZZZZZZ	3		
12:45	ZZZZZZ	3		
12:48	ZZZZZZ	1		
12:51	ZZZZZZ	5		
12:54	ZZZZZZ	1		
12:57	MA42598-CCV3	1		
13:00	MA42598-CCB3	1		
13:03	ZZZZZZ	250		
13:06	MP2349-PS1	1		
13:17	MP2378-B1	1		
13:20	MP2378-MB1	1		
13:22	MP2378-S1	1		
13:25	MP2378-S2	1		
13:28	JC48430-20	1		(sample used for QC only; not part of login JC48691)
13:31	MP2378-SD1	5		
---------->	Last reportable sample/prep for job JC48691			
13:34	ZZZZZZ	10		
13:36	MA42598-CCV4	1		
13:40	MA42598-CCB4	1		CCB out for Zn.
13:43	ZZZZZZ	1		
13:46	ZZZZZZ	1		
13:49	ZZZZZZ	5		
13:51	ZZZZZZ	5		
13:55	ZZZZZZ	1		
13:58	MP2398-SD1	5		
14:00	ZZZZZZ	10		
14:03	ZZZZZZ	3		
14:06	ZZZZZZ	1		
14:09	MA42598-CCV5	1		
14:12	MA42598-CCB5	1		
14:15	ZZZZZZ	5		
14:18	ZZZZZZ	1		
14:21	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42598
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:24	ZZZZZZ	1		
14:27	ZZZZZZ	20		
14:29	ZZZZZZ	1		
14:32	ZZZZZZ	1		
14:35	ZZZZZZ	1		
14:38	ZZZZZZ	1		
14:41	MA42598-CCV6	1		
14:47	MA42598-CCB6	1		
14:50	MA42598-CRI2	1		
14:53	MA42598-CRID3	1		
14:56	ZZZZZZ	1		
14:59	ZZZZZZ	1		
15:02	ZZZZZZ	1		
15:06	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:11	ZZZZZZ	1		
15:14	MA42598-CCV7	1		
15:17	MA42598-CCB7	1		

----------> Last reportable CCB for job JC48691
Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42598
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:42	MA42598-STD1	7922 R	181790 R	19343 R	12171 R
10:45	MA42598-STD2	7519	170410	18929	11059
10:48	ZZZZZZ	7772	175100	19215	11460
10:51	ZZZZZZ	8050	184930	19709	12347
10:55	MA42598-ICV1	7766	177250	19379	11476
11:04	MA42598-ICB1	7873	181830	19481	12133
11:10	MA42598-ICCV1	7885	175830	19051	11610
11:20	MA42598-ICB2	7781	182050	19464	11967
11:25	MA42598-CRI1	7754	179980	19281	11856
11:28	MA42598-CRID1	No results reported for the elements associated with this internal standard.			
11:30	MA42598-ICSA1	7215	160560	18632	10389
11:33	MA42598-ICSAB1	7164	160760	18573	10333
11:36	MA42598-HSTD1	7802	179030	19324	11991
11:39	MA42598-HSTD2	7321	164230	18648	10417
11:42	ZZZZZZ	7740	179170	19227	11964
11:45	ZZZZZZ	7689	180030	19367	11950
11:48	ZZZZZZ	7870	180980	19403	12057
11:50	MA42598-CCV1	7616	172600	18414	11227
11:55	MA42598-CCB1	7930	179650	18978	12160
11:59	ZZZZZZ	7343	167170	19355	10644
12:01	ZZZZZZ	7421	999999 !	17988	10805
12:05	ZZZZZZ	7924	181140	19339	12268
12:08	MA42598-CRID2	7789	177680	18909	11960
12:11	ZZZZZZ	7925	182350	19387	12149
12:14	ZZZZZZ	7832	182420	19497	12016
12:17	ZZZZZZ	7902	181120	19409	11925
12:20	ZZZZZZ	7911	179430	19439	11947
12:23	ZZZZZZ	7802	177200	18709	11783
12:25	MA42598-CCV2	7749	174380	18642	11418
12:28	MA42598-CCB2	7973	183310	19327	12185
12:31	ZZZZZZ	7883	180030	19840	11852
12:34	ZZZZZZ	8031	185270	19839	12228
12:37	ZZZZZZ	7565	177240	19818	10721

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42598
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:40	ZZZZZZ	8026	181990	19842	11836
12:43	ZZZZZZ	7875	178770	19689	11452
12:45	ZZZZZZ	7901	178930	19532	11510
12:48	ZZZZZZ	8146	187640	19900	12401
12:51	ZZZZZZ	8018	181570	19770	11811
12:54	ZZZZZZ	15692 !	280510 !	30145 !	23596 !
12:57	MA42598-CCV3	7818	176860	19031	11505
13:00	MA42598-CCB3	8040	183870	19634	12279
13:03	ZZZZZZ	8004	183700	19587	12294
13:06	MP2349-PS1	7875	177810	19941	11122
13:17	MP2378-B1	7996	181800	19667	12004
13:20	MP2378-MB1	8080	185800	19920	12422
13:22	MP2378-S1	7753	174400	19672	11166
13:25	MP2378-S2	7761	174300	19841	11196
13:28	JC48430-20	7791	174460	999999 !a	11362
13:31	MP2378-SD1	7915	999999 !	19667	11897
13:34	ZZZZZZ	7961	180470	19869	11864
13:36	MA42598-CCV4	7799	173050	19440	11488
13:40	MA42598-CCB4	8067	184240	19652	12345
13:43	ZZZZZZ	8127	187070	19687	12534
13:46	ZZZZZZ	8049	187090	19961	12451
13:49	ZZZZZZ	7756	173760	19545	11336
13:51	ZZZZZZ	7763	174070	19496	11316
13:55	ZZZZZZ	8142	187610	20145	12422
13:58	MP2398-SD1	7940	181960	19523	12048
14:00	ZZZZZZ	7619	170080	19328	11088
14:03	ZZZZZZ	7747	175730	19120	11380
14:06	ZZZZZZ	7374	165990	19307	10485
14:09	MA42598-CCV5	7850	176740	19503	11530
14:12	MA42598-CCB5	8074	185850	19406	12330
14:15	ZZZZZZ	7750	175890	19459	11412
14:18	ZZZZZZ	7711	175450	19501	11282
14:21	ZZZZZZ	7822	176180	19625	11552

INTERNAL STANDARD SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42598
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:24	ZZZZZZ	8073	185870	20165	12221
14:27	ZZZZZZ	7803	176560	19507	11492
14:29	ZZZZZZ	8155	185600	19641	12373
14:32	ZZZZZZ	8098	185060	19629	12316
14:35	ZZZZZZ	7601	173730	19294	11200
14:38	ZZZZZZ	7623	173510	19248	11069
14:41	MA42598-CCV6	7885	177550	19343	11561
14:47	MA42598-CCB6	8062	185380	19308	12329
14:50	MA42598-CRI2	7978	183350	19679	12129
14:53	MA42598-CRID3	8068	184950	19667	12314
14:56	ZZZZZZ	7922	178130	19273	11629
14:59	ZZZZZZ	8107	999999 !	19903	12367
15:02	ZZZZZZ	8145	172580	19738	11599
15:06	ZZZZZZ	7975	184510	19571	12197
15:09	ZZZZZZ	7800	999999 !	19134	11458
15:11	ZZZZZZ	8013	184000	19435	12236
15:14	MA42598-CCV7	7835	176420	19223	11483
15:17	MA42598-CCB7	8046	185130	19305	12254

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42598 Units: ug/l

Time:			11:04		11:20		11:55		12:28	
Sample ID:			ICB1		ICB2		CCB1		CCB2	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	24	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.4	anr							
Barium	200	.6	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.5								
Boron	100	2.8								
Cadmium	3.0	.3	anr							
Calcium	5000	4.4	anr							
Chromium	10	.7	anr							
Cobalt	50	.2	anr							
Copper	10	.7	anr							
Iron	100	3	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.5								
Magnesium	5000	25	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3								
Nickel	10	.5	anr							
Phosphorus	50	1.5								
Potassium	10000	99	anr							
Selenium	10	2.8	anr							
Silicon	200	1.9								
Silver	10	.8	anr							
Sodium	10000	27	anr							
Strontium	10	.2								
Sulfur	50	3.3								
Thallium	2.0	1.9	anr							
Tin	10	.9	anr							
Titanium	10	.6								
Tungsten	50	1.6								
Vanadium	50	.8	anr							
Zinc	20	.2	-0.10	<20	-0.10	<20	-0.10	<20	-0.20	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42598 Units: ug/l

Time:			11:04		11:20		11:55		12:28	
Sample ID:			ICB1		ICB2		CCB1		CCB2	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42598 Units: ug/l

Time: / Sample ID:			13:00 CCB3		13:40 CCB4		14:12 CCB5		14:47 CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	24	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.4	anr							
Barium	200	.6	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2.5								
Boron	100	2.8								
Cadmium	3.0	.3	anr							
Calcium	5000	4.4	anr							
Chromium	10	.7	anr							
Cobalt	50	.2	anr							
Copper	10	.7	anr							
Iron	100	3	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.5								
Magnesium	5000	25	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3								
Nickel	10	.5	anr							
Phosphorus	50	1.5								
Potassium	10000	99	anr							
Selenium	10	2.8	anr							
Silicon	200	1.9								
Silver	10	.8	anr							
Sodium	10000	27	anr							
Strontium	10	.2								
Sulfur	50	3.3								
Thallium	2.0	1.9	anr							
Tin	10	.9	anr							
Titanium	10	.6								
Tungsten	50	1.6								
Vanadium	50	.8	anr							
Zinc	20	.2	-0.20	<20	9.2	<20* (a)	9.2	<20	9.2	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42598 Units: ug/l

Time:			13:00		13:40		14:12		14:47	
Sample ID:			CCB3		CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested
(a) All reported results <RL or >10x CCB value.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42598 Units: ug/l

Time:			15:17	
Sample ID:			CCB7	
Metal	RL	IDL	raw	final
Aluminum	200	24	anr	
Antimony	6.0	2.2	anr	
Arsenic	3.0	1.4	anr	
Barium	200	.6	anr	
Beryllium	1.0	.1	anr	
Bismuth	20	2.5		
Boron	100	2.8		
Cadmium	3.0	.3	anr	
Calcium	5000	4.4	anr	
Chromium	10	.7	anr	
Cobalt	50	.2	anr	
Copper	10	.7	anr	
Iron	100	3	anr	
Lead	3.0	1.6	anr	
Lithium	50	3.5		
Magnesium	5000	25	anr	
Manganese	15	.2	anr	
Molybdenum	20	.3		
Nickel	10	.5	anr	
Phosphorus	50	1.5		
Potassium	10000	99	anr	
Selenium	10	2.8	anr	
Silicon	200	1.9		
Silver	10	.8	anr	
Sodium	10000	27	anr	
Strontium	10	.2		
Sulfur	50	3.3		
Thallium	2.0	1.9	anr	
Tin	10	.9	anr	
Titanium	10	.6		
Tungsten	50	1.6		
Vanadium	50	.8	anr	
Zinc	20	.2	2.8	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42598 Units: ug/l

Time:			15:17	
Sample ID:			CCB7	
Metal	RL	IDL	raw	final
Zirconium	10	.3		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: to % Recovery Run ID: MA42598 Units: ug/l

Time:		11:10	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin	anr		
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2020	101.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: to % Recovery Run ID: MA42598 Units: ug/l

Time:		11:10	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42598 Units: ug/l

Time:		10:55			11:50			12:25	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2070	103.5	2000	2050	102.5	2000	2000	100.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42598 Units: ug/l

Time:		10:55			11:50			12:25	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42598 Units: ug/l

Time:		12:57			13:36			14:09	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin	anr								
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	1990	99.5	2000	1990	99.5	2000	2000	100.0

SGS ACCUTEST
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JC48691

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42598 Units: ug/l

Time:		12:57			13:36			14:09	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST
JC48691

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42598 Units: ug/l

Time:		14:41			15:14	
Sample ID:	CCV	CCV6		CCV	CCV7	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin	anr					
Titanium						
Tungsten						
Vanadium	anr					
Zinc	2000	1960	98.0	2000	1970	98.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42598 Units: ug/l

Time:		14:41			15:14	
Sample ID:	CCV	CCV6		CCV	CCV7	
Metal	True	Results	% Rec	True	Results	% Rec
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42598 Units: ug/l

Time:		11:36			11:39	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin	anr					
Titanium						
Tungsten						
Vanadium	anr					
Zinc	5000	5300	106.0			

HIGH STANDARD CHECK SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42598 Units: ug/l

Time:		11:36			11:39	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST
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JC48691

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA42598 Units: ug/l

Time:				11:25		12:08		14:50	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10			anr					
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	21.3	106.5	11.0	110.0	20.6	103.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA42598 Units: ug/l

Time:				11:25		12:08		14:50	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA42598 Units: ug/l

Time:				14:53	
Sample ID:	CRI	CRIA	CRID	CRID3	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	anr	
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	anr	
Iron	100	500			
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	
Zinc	20		10	10.7	107.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA42598 Units: ug/l

Time:				14:53	
Sample ID:	CRI	CRIA	CRID	CRID3	
Metal	True	True	True	Results	% Rec
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42598 Units: ug/l

Time:			11:30		11:33	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	512000	102.4	509000	101.8
Antimony		1000	1.6		1060	106.0
Arsenic		1000	2.4		1090	109.0
Barium		500	0.50		506	101.2
Beryllium		500	0.10		494	98.8
Bismuth		500	8.9		537	107.4
Boron		500	-8.1		503	100.6
Cadmium		1000	0.80		1020	102.0
Calcium	400000	400000	390000	97.5	392000	98.0
Chromium		500	0.0		490	98.0
Cobalt		500	2.1		496	99.2
Copper		500	4.2		530	106.0
Iron	200000	200000	193000	96.5	199000	99.5
Lead		1000	-0.60		982	98.2
Lithium		500	-12		515	103.0
Magnesium	500000	500000	507000	101.4	507000	101.4
Manganese		500	-1.4		512	102.4
Molybdenum		500	-0.20		526	105.2
Nickel		1000	0.50		979	97.9
Phosphorus		500	7.0		515	103.0
Potassium			139		184	
Selenium		1000	-2.6		1010	101.0
Silicon		500	5.5		504	100.8
Silver		1000	2.9		1060	106.0
Sodium			-20		-5.9	
Strontium		500	0.20		521	104.2
Sulfur		500	-1.3		511	102.2
Thallium		1000	-2.6		1020	102.0
Tin		500	-8.1		470	94.0
Titanium		500	-2.2		514	102.8
Tungsten		500	2.8		494	98.8
Vanadium		500	-0.90		497	99.4
Zinc		1000	-0.80		962	96.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SC081417M1.ICP Date Analyzed: 08/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42598 Units: ug/l

Time:			11:30		11:33	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Zirconium		500	-3.4		422	84.4

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 08/11/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	7.1	32		
Antimony	6.0	1.9	3		
Arsenic	3.0	1.4	2.6		
Barium	200	.2	1		
Beryllium	1.0	.1	.31		
Bismuth	20	2.5	5.5		
Boron	100	1.2	7.8		
Cadmium	3.0	.3	.69		
Calcium	5000	3.3	48		
Chromium	10	.7	1.6		
Cobalt	50	.2	.7		
Copper	10	.7	6.5	-1.1	<10
Iron	100	2.7	20	2.4	<100
Lead	3.0	1.6	2.6		
Lithium	50	3.1	11		
Magnesium	5000	17	59		
Manganese	15	.1	.78		
Molybdenum	20	.3	5.7		
Nickel	10	.4	5.2		
Phosphorus	50	1.5	14		
Potassium	10000	47	290		
Selenium	10	2.5	7.2		
Silicon	200	1.9	32		
Silver	10	.8	3	-0.70	<10
Sodium	10000	16	170		
Strontium	10	.1	.3		
Sulfur	50	3.3	14		
Thallium	2.0	1.9	1.5		
Tin	50	.9	7.6		
Titanium	10	.6	1.3		
Tungsten	50	1.6	7.8		
Vanadium	50	.8	.95		
Zinc	20	.2	2.2	1.7	<20

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 08/11/17

Metal	RL	IDL	MDL	MB raw	final
Zirconium	10	.3	1.2		

Associated samples MP2378: JC48691-7A, JC48691-8A, JC48691-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 08/11/17

Metal	JC48430-20 Original MS		Spikelot MPEPA200.7% Rec		QC Limits
Aluminum	anr				
Antimony					
Arsenic					
Barium	anr				
Beryllium					
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	33.3	1910	2000	93.8	70-130
Iron	7630	32100	25000	97.9	70-130
Lead	anr				
Lithium					
Magnesium					
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium					
Silicon					
Silver	0.0	85.1	80	106.4	70-130
Sodium	anr				
Strontium					
Sulfur					
Thallium					
Tin	anr				
Titanium					
Tungsten					
Vanadium					
Zinc	28.9	2000	2000	98.6	70-130

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 08/11/17

Metal	JC48430-20 Original MS	Spikelot MPEPA200.7% Rec	QC Limits
Zirconium			

Associated samples MP2378: JC48691-7A, JC48691-8A, JC48691-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 08/11/17

Metal	JC48430-20 Original	MSD	Spikelot MPEPA200.7	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony						
Arsenic						
Barium	anr					
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	33.3	1860	2000	91.3	2.7	10
Iron	7630	31300	25000	94.7	2.5	10
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium						
Silicon						
Silver	0.0	83.7	80	104.6	1.7	10
Sodium	anr					
Strontium						
Sulfur						
Thallium						
Tin	anr					
Titanium						
Tungsten						
Vanadium						
Zinc	28.9	1960	2000	96.6	2.0	10

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 08/11/17

Metal	JC48430-20 Original MSD	Spikelot MPEPA200.7% Rec	MSD RPD	QC Limit
Zirconium				

Associated samples MP2378: JC48691-7A, JC48691-8A, JC48691-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 08/11/17

Metal	BSP Result	Spikelot MPEPA200.7	% Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic				
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	1800	2000	90.0	85-115
Iron	23800	25000	95.2	85-115
Lead	anr			
Lithium				
Magnesium				
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium				
Silicon				
Silver	81.5	80	101.9	85-115
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin	anr			
Titanium				
Tungsten				
Vanadium				
Zinc	1960	2000	98.0	85-115

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 08/11/17

Metal	BSP Result	Spikelot MPEPA200.7% Rec	QC Limits
Zirconium			

Associated samples MP2378: JC48691-7A, JC48691-8A, JC48691-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 08/11/17

Metal	JC48430-20 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony				
Arsenic				
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	33.3	30.2	9.3	0-10
Iron	7630	7740	1.3	0-10
Lead	anr			
Lithium				
Magnesium				
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium				
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin	anr			
Titanium				
Tungsten				
Vanadium				
Zinc	28.9	32.7	13.1*(a)	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2378 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 08/11/17

	JC48430-20		QC
Metal	Original SDL 1:5	%DIF	Limits
Zirconium			

Associated samples MP2378: JC48691-7A, JC48691-8A, JC48691-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

SGS ACCUTEST
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JC48691

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2404 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 08/12/17

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.058	.082	0.052	<0.20

Associated samples MP2404: JC48691-7A, JC48691-8A, JC48691-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2404 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 08/12/17

Metal	JC48720-1 Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.15	2.2	2	102.5	70-130

Associated samples MP2404: JC48691-7A, JC48691-8A, JC48691-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2404 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 08/12/17

Metal	JC48720-1 Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.15	2.4	2	112.5	8.7	19

Associated samples MP2404: JC48691-7A, JC48691-8A, JC48691-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2404
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 08/12/17

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	2.3	2	115.0	85-115

Associated samples MP2404: JC48691-7A, JC48691-8A, JC48691-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.5.3

8

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide	GP7122/GN68074	0.010	0.0	mg/l	0.0833	0.0885	106.2	90-110%
HEM Oil and Grease	GP7228/GN68262	5.0	0.0	mg/l	40.06	36.9	92.1	78-114%
Solids, Total Suspended	GN68045	4.0	0.0	mg/l				

Associated Samples:
Batch GP7122: JC48691-7A, JC48691-8A, JC48691-9A
Batch GP7228: JC48691-7A, JC48691-8A, JC48691-9A
Batch GN68045: JC48691-7A, JC48691-8A, JC48691-9A
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Cyanide	GP7122/GN68074	JC48613-1	mg/l	0.0	0.0	0.0	0-32%
HEM Oil and Grease	GP7228/GN68262	JC48783-2	mg/l	395	215	59.0*(a)	0-18%
Solids, Total Suspended	GN68045	JC48644-3	mg/l	0.57 U	0.0	0.0	0-17%

Associated Samples:
Batch GP7122: JC48691-7A, JC48691-8A, JC48691-9A
Batch GP7228: JC48691-7A, JC48691-8A, JC48691-9A
Batch GN68045: JC48691-7A, JC48691-8A, JC48691-9A
(*) Outside of QC limits
(a) High RPD due to possible nonhomogeniety between sample bottles.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Cyanide	GP7122/GN68074	JC48613-1	mg/l	0.0	0.0833	0.053	63.6N(a)	90-110%
HEM Oil and Grease	GP7228/GN68262	JC48491-2	mg/l	1.2	41.73	35.5	82.2	78-114%

Associated Samples:
Batch GP7122: JC48691-7A, JC48691-8A, JC48691-9A
Batch GP7228: JC48691-7A, JC48691-8A, JC48691-9A
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E081117W1.CN Date Analyzed: 08/11/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Analyst: BM Run ID: GN68074
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:44	GN68074-STD1	1		STDA
11:45	GN68074-STD2	1		STDB
11:47	GN68074-STD3	1		STDC
11:48	GN68074-STD4	1		STDD
11:50	GN68074-STD5	1		STDE
11:51	GN68074-STD6	1		STDF
11:52	GN68074-STD7	1		STDG
11:54	GN68074-ICV1	1		
11:55	GN68074-ICB1	1		
11:56	GN68074-CCV1	1		
11:58	GN68074-CCB1	1		
11:59	ZZZZZZ	1		
12:00	ZZZZZZ	1		
12:02	ZZZZZZ	1		
12:03	ZZZZZZ	1		
12:04	ZZZZZZ	1		
12:06	GP7062-MB2	1		
12:07	GP7062-B2	1		
12:09	GP7062-S1	1		Over calibration curve. See rerun at dilution.
12:10	GP7062-D1	1		Over calibration curve. See rerun at dilution.
12:11	GP7097-MB1	1		
12:13	GN68074-CCV2	1		
12:14	GN68074-CCB2	1		
12:15	GP7097-B1	1		
12:17	GP7097-S1	1		
12:18	GP7097-D1	1		
12:19	ZZZZZZ	1		
12:21	ZZZZZZ	1		
12:22	ZZZZZZ	1		
12:24	JC48441-1	1		(sample used for QC only; not part of login JC48691)
12:25	ZZZZZZ	1		
12:26	ZZZZZZ	1		
12:28	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E081117W1.CN Date Analyzed: 08/11/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Analyst: BM Run ID: GN68074
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:29	GN68074-CCV3	1		
12:30	GN68074-CCB3	1		
12:32	ZZZZZZ	1		
12:33	GP7098-MB1	1		
12:34	GP7098-B1	1		
12:36	GP7098-S1	1		
12:37	GP7098-D1	1		
12:39	ZZZZZZ	1		
12:40	ZZZZZZ	1		
12:41	ZZZZZZ	1		
12:43	JC48519-1	1		(sample used for QC only; not part of login JC48691)
12:44	GP7122-MB1	1		
12:45	GN68074-CCV4	1		
12:47	GN68074-CCB4	1		
12:48	GP7122-B1	1		
12:49	GP7122-S1	1		
12:51	GP7122-S2	1		
12:52	GP7122-D1	1		
12:53	JC48613-1	1		(sample used for QC only; not part of login JC48691)
12:55	JC48613-2	1		(sample used for QC only; not part of login JC48691)
12:56	ZZZZZZ	1		
12:58	ZZZZZZ	1		
12:59	ZZZZZZ	1		
13:00	ZZZZZZ	1		
13:02	GN68074-CCV5	1		
13:03	GN68074-CCB5	1		
13:04	ZZZZZZ	1		
13:06	ZZZZZZ	1		
13:07	JC48691-7A	1		
13:09	JC48691-8A	1		
13:10	JC48691-9A	1		
13:11	GP7096-MB1	1		
13:13	GP7096-B1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E081117W1.CN Date Analyzed: 08/11/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Analyst: BM Run ID: GN68074
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:14	GP7096-S1	1		
13:15	GP7096-S2	1		
13:17	GP7096-D1	1		
13:18	GN68074-CCV6	1		
13:19	GN68074-CCB6	1		
13:21	JC48603-1	1		(sample used for QC only; not part of login JC48691)
13:22	JC48603-2	1		(sample used for QC only; not part of login JC48691)
13:23	ZZZZZZ	1		
13:25	ZZZZZZ	1		
13:26	ZZZZZZ	1		
13:28	ZZZZZZ	1		
13:29	ZZZZZZ	1		
13:30	ZZZZZZ	1		
13:32	ZZZZZZ	1		
13:33	ZZZZZZ	1		
13:34	GN68074-CCV7	1		
13:36	GN68074-CCB7	1		
13:37	ZZZZZZ	1		
13:38	ZZZZZZ	1		
13:40	ZZZZZZ	1		
13:41	ZZZZZZ	1		
13:43	ZZZZZZ	1		
13:44	ZZZZZZ	1		
13:45	ZZZZZZ	1		
13:47	ZZZZZZ	1		
13:48	GP7093-MB1	1		
13:49	GP7093-B1	1		
13:51	GN68074-CCV8	1		
13:52	GN68074-CCB8	1		
13:53	GP7093-D1	1		
13:55	ZZZZZZ	1		
13:56	JC48373-2A	1		(sample used for QC only; not part of login JC48691)
13:58	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E081117W1.CN Date Analyzed: 08/11/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Analyst: BM Run ID: GN68074
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:59	ZZZZZZ	1		
14:00	ZZZZZZ	1		
14:02	ZZZZZZ	1		
14:03	ZZZZZZ	1		
14:04	ZZZZZZ	1		
14:06	ZZZZZZ	1		
14:07	GN68074-CCV9	1		
14:08	GN68074-CCB9	1		
14:10	ZZZZZZ	1		
14:11	ZZZZZZ	1		
14:12	ZZZZZZ	1		
14:14	ZZZZZZ	1		
14:15	ZZZZZZ	1		
14:17	ZZZZZZ	1		
14:18	ZZZZZZ	1		
14:19	GP7110-MB1	1		
14:21	GP7110-B1	1		
14:22	GP7110-D1	1		
14:23	GN68074-CCV10	1		
14:25	GN68074-CCB10	1		
14:26	JC46939-5A	1		(sample used for QC only; not part of login JC48691)
14:27	ZZZZZZ	1		
14:29	ZZZZZZ	1		
14:30	ZZZZZZ	1		
14:32	ZZZZZZ	1		
14:33	ZZZZZZ	1		
14:34	ZZZZZZ	1		
14:36	ZZZZZZ	1		
14:37	ZZZZZZ	1		
14:38	ZZZZZZ	1		
14:40	GN68074-CCV11	1		
14:41	GN68074-CCB11	1		
14:42	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E081117W1.CN Date Analyzed: 08/11/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Analyst: BM Run ID: GN68074
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:44	ZZZZZZ	1		
14:45	ZZZZZZ	1		
14:47	ZZZZZZ	1		
14:48	ZZZZZZ	1		
14:49	ZZZZZZ	1		
14:51	ZZZZZZ	1		
14:52	ZZZZZZ	1		
14:53	ZZZZZZ	1		
14:55	ZZZZZZ	1		
14:56	GN68074-CCV12	1		
14:57	GN68074-CCB12	1		
14:59	ZZZZZZ	1		
15:00	ZZZZZZ	1		
15:02	GP7062-S1	3		1:3 dilution.
15:03	GP7062-D1	3		1:3 dilution.
15:06	GN68074-CCV13	1		
15:07	GN68074-CCB13	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC48691
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E081117W1.CN Date Analyzed: 08/11/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Run ID: GN68074 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN68074-ICV1	Cyanide	0.33	0.010	0.0085	.3	110.0	90-110
GN68074-ICB1	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV1	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB1	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV2	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB2	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV3	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB3	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV4	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB4	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV5	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB5	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV6	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB6	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV7	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB7	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV8	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB8	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV9	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB9	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV10	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB10	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV11	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB11	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV12	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB12	Cyanide	0.0085 U	0.010	0.0085			
GN68074-CCV13	Cyanide	0.41	0.010	0.0085	.4	102.5	90-110
GN68074-CCB13	Cyanide	0.0085 U	0.010	0.0085			

(!) Outside of QC limits

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Automated Report

Technical Report for

United Technologies Corporation

SECORINI: Zanesville OH, Monthly

182602727

SGS Accutest Job Number: JC50259

Sampling Date: 09/05/17

Report to:

Stantec Consulting Corporation
8770 Guion Road Suite B
Indianapolis, IN 46268
susan.hall@stantec.com

ATTN: Susan Hall

Total number of pages in report: **167**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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SGS ACCUTEST
JC50259

Sample Summary

United Technologies Corporation

Job No: JC50259

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC50259-1	09/05/17	15:30	EC	09/07/17	AQ	Ground Water	I-1
JC50259-2	09/05/17	15:35	EC	09/07/17	AQ	Ground Water	I-2
JC50259-3	09/05/17	15:40	EC	09/07/17	AQ	Ground Water	I-3
JC50259-4	09/05/17	15:45	EC	09/07/17	AQ	Ground Water	I-4
JC50259-5	09/05/17	15:50	EC	09/07/17	AQ	Influent	INFLUENT
JC50259-6	09/05/17	15:55	EC	09/07/17	AQ	Effluent	EFFLUENT
JC50259-7	09/05/17	16:00	EC	09/07/17	AQ	Ground Water	RIVOUT
JC50259-7A	09/05/17	16:00	EC	09/07/17	AQ	Ground Water	RIVOUT
JC50259-8	09/05/17	16:25	EC	09/07/17	AQ	Ground Water	W-6
JC50259-8A	09/05/17	16:25	EC	09/07/17	AQ	Ground Water	W-6
JC50259-9	09/05/17	16:45	EC	09/07/17	AQ	Ground Water	W-12
JC50259-9A	09/05/17	16:45	EC	09/07/17	AQ	Ground Water	W-12
JC50259-10	09/05/17	16:45	EC	09/07/17	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	United Technologies Corporation	**Job No**	JC50259
Site:	SECORINI: Zanesville OH, Monthly	**Report Date**	9/14/2017 5:38:50 PM

On 09/07/2017, 9 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 1.6 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC50259 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method EPA 624

Matrix: AQ **Batch ID:** VT9293

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC50171-1DUP, JC50171-3MS were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals Analysis By Method EPA 200.7

Matrix: AQ **Batch ID:** MP2815

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50250-1MS, JC50250-1MSD, JC50250-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Copper, Iron, Zinc are outside control limits for sample MP2815-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method EPA 245.1

Matrix: AQ **Batch ID:** MP2817

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50259-7AMS, JC50259-7AMSD were used as the QC samples for metals.

General Chemistry By Method EPA 1664A

Matrix: AQ **Batch ID:** GP7681

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50259-7ADUP, JC50396-1MS were used as the QC samples for HEM Oil and Grease.

General Chemistry By Method EPA 335.4/LACHAT

Matrix: AQ **Batch ID:** GP7711

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50259-7ADUP, JC50259-7AMS were used as the QC samples for Cyanide.
- Matrix Spike Recovery(s) for Cyanide are outside control limits. Spike recovery indicates possible matrix interference.

General Chemistry By Method SM2540 D-11

Matrix: AQ **Batch ID:** GN69176

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50183-1DUP were used as the QC samples for Solids, Total Suspended.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC50259
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 09/05/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC50259-1	**I-1**					
cis-1,2-Dichloroethene		22.3	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		22.3	1.0		ug/l	EPA 624
Trichloroethene		36.7	1.0		ug/l	EPA 624
JC50259-2	**I-2**					
cis-1,2-Dichloroethene		7.0	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		7.0	1.0		ug/l	EPA 624
Trichloroethene		11.7	1.0		ug/l	EPA 624
JC50259-3	**I-3**					
cis-1,2-Dichloroethene		1.4	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		1.4	1.0		ug/l	EPA 624
Trichloroethene		8.0	1.0		ug/l	EPA 624
JC50259-4	**I-4**					
cis-1,2-Dichloroethene		92.6	1.0		ug/l	EPA 624
trans-1,2-Dichloroethene		2.0	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		94.6	1.0		ug/l	EPA 624
Trichloroethene		183	1.0		ug/l	EPA 624
JC50259-5	**INFLUENT**					
cis-1,2-Dichloroethene		25.5	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		25.5	1.0		ug/l	EPA 624
Trichloroethene		50.1	1.0		ug/l	EPA 624
JC50259-6	**EFFLUENT**					
cis-1,2-Dichloroethene		3.4	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		3.4	1.0		ug/l	EPA 624
Trichloroethene		3.5	1.0		ug/l	EPA 624
JC50259-7	**RIVOUT**					
cis-1,2-Dichloroethene		3.0	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		3.0	1.0		ug/l	EPA 624
Trichloroethene		2.8	1.0		ug/l	EPA 624

Summary of Hits

Job Number: JC50259
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 09/05/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC50259-7A	**RIVOUT**					
Iron		1800	100		ug/l	EPA 200.7
JC50259-8	**W-6**					
cis-1,2-Dichloroethene		8.0	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		8.0	1.0		ug/l	EPA 624
Trichloroethene		4.5	1.0		ug/l	EPA 624
JC50259-8A	**W-6**					
Iron		260	100		ug/l	EPA 200.7
JC50259-9	**W-12**					
cis-1,2-Dichloroethene		2.2	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		2.2	1.0		ug/l	EPA 624
Trichloroethene		5.5	1.0		ug/l	EPA 624
JC50259-9A	**W-12**					
Iron		242	100		ug/l	EPA 200.7
JC50259-10	**TRIP BLANK**					

No hits reported in this sample.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID:	I-1		
Lab Sample ID:	JC50259-1	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226334.D	1	09/08/17 17:35	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	22.3	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	22.3	1.0	ug/l	
79-01-6	Trichloroethene	36.7	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	102%		76-122%
2037-26-5	Toluene-D8 (SUR)	97%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	103%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-2		
Lab Sample ID:	JC50259-2	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226335.D	1	09/08/17 18:06	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	7.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	7.0	1.0	ug/l	
79-01-6	Trichloroethene	11.7	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%		76-122%
2037-26-5	Toluene-D8 (SUR)	98%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	106%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-3		
Lab Sample ID:	JC50259-3	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226336.D	1	09/08/17 18:36	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	1.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	1.4	1.0	ug/l	
79-01-6	Trichloroethene	8.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	102%		76-122%
2037-26-5	Toluene-D8 (SUR)	98%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	103%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-4		
Lab Sample ID:	JC50259-4	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226337.D	1	09/08/17 19:06	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	92.6	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	2.0	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	94.6	1.0	ug/l	
79-01-6	Trichloroethene	183	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	103%		76-122%
2037-26-5	Toluene-D8 (SUR)	98%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	96%		80-120%
1868-53-7	Dibromofluoromethane (S)	105%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	INFLUENT		
Lab Sample ID:	JC50259-5	**Date Sampled:**	09/05/17
Matrix:	AQ - Influent	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226338.D	1	09/08/17 19:36	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	25.5	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	25.5	1.0	ug/l	
79-01-6	Trichloroethene	50.1	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	101%		76-122%
2037-26-5	Toluene-D8 (SUR)	97%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	104%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	EFFLUENT		
Lab Sample ID:	JC50259-6	**Date Sampled:**	09/05/17
Matrix:	AQ - Effluent	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226339.D	1	09/08/17 20:06	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	3.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	3.4	1.0	ug/l	
79-01-6	Trichloroethene	3.5	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%		76-122%
2037-26-5	Toluene-D8 (SUR)	99%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	104%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC50259-7	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226340.D	1	09/08/17 20:36	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	3.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	3.0	1.0	ug/l	
79-01-6	Trichloroethene	2.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%		76-122%
2037-26-5	Toluene-D8 (SUR)	98%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	103%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC50259-7A	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]
Iron	1800	100	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	09/08/17	09/08/17	JA	EPA 245.1 [1]	EPA 245.7 [4]
Silver	< 10	10	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42750
(2) Instrument QC Batch: MA42768
(3) Prep QC Batch: MP2815
(4) Prep QC Batch: MP2817

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC50259-7A	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	09/14/17 11:06	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.2	5.2	mg/l	1	09/11/17 14:00	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	09/08/17 12:50	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-6		
Lab Sample ID:	JC50259-8	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226341.D	1	09/08/17 21:06	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	8.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	8.0	1.0	ug/l	
79-01-6	Trichloroethene	4.5	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	103%		76-122%
2037-26-5	Toluene-D8 (SUR)	98%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	103%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-6		
Lab Sample ID:	JC50259-8A	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]
Iron	260	100	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	09/08/17	09/08/17	JA	EPA 245.1 [1]	EPA 245.7 [4]
Silver	< 10	10	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42750
(2) Instrument QC Batch: MA42768
(3) Prep QC Batch: MP2815
(4) Prep QC Batch: MP2817

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-6		
Lab Sample ID:	JC50259-8A	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	09/14/17 11:07	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.1	5.1	mg/l	1	09/11/17 14:00	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	09/08/17 12:50	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-12		
Lab Sample ID:	JC50259-9	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226342.D	1	09/08/17 21:36	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.2	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.2	1.0	ug/l	
79-01-6	Trichloroethene	5.5	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%		76-122%
2037-26-5	Toluene-D8 (SUR)	98%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	102%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-12		
Lab Sample ID:	JC50259-9A	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]
Iron	242	100	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	09/08/17	09/08/17	JA	EPA 245.1 [1]	EPA 245.7 [4]
Silver	< 10	10	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	09/08/17	09/11/17	AB	EPA 200.7 [2]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42750
(2) Instrument QC Batch: MA42768
(3) Prep QC Batch: MP2815
(4) Prep QC Batch: MP2817

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-12		
Lab Sample ID:	JC50259-9A	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	09/14/17 11:09	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.0	5.0	mg/l	1	09/11/17 14:00	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	09/08/17 12:50	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JC50259-10	**Date Sampled:**	09/05/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/07/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T226333.D	1	09/08/17 17:05	PR	n/a	n/a	VT9293
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	100%		76-122%
2037-26-5	Toluene-D8 (SUR)	99%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	102%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

7851 6332 3051
6662 6990 7713

Client / Reporting Information | Project Information | Requested Analysis (see TEST CODE sheet)

Stantec — UTC-Zanesville Monthly Sampling
8770 Guion Rd — 220 Linden Ave
Indianapolis IN 46268 — Zanesville OH
Susan.Hall@Stantec.com
317-876-8375
Eric Cavin — Kelby Hanes

#	Field ID / Point of Collection	Date	Time	Sampled By	# of bottles				Analysis					LAB USE ONLY
1	I-1	9-5-17	15:30	EC/KH	3	3			X					033
2	I-2 *		15:35		4	4			X					926
3	I-3		15:40		3	3			X					048
4	I-4		15:45		3	3			X					635
5	INFLUENT		15:50		3	3			X					V734
6	EFFLUENT		15:55		3	3			X					
7	R-OUT		16:00		9	5	1	1	X	X	X	X	X	
8	W-6		16:35		9	5	1	1	X	X	X	X	X	
9	W-10		16:45		9	5	1	1	X	X	X	X	X	
10	TRIP BLANK				2	2			X					

Turnaround Time: 5 Day RUSH / 2 Day RUSH (checked)

INITIAL ASSESSMENT [initials] 3.3

LABEL VERIFICATION [initials]

Data Deliverable: NJ Reduced (checked)

Comments / Special Instructions:
R-OUT PH = 5.22
W-6 PH = 7.20
W-10 PH = 7.73

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1	Eric Cavin	9-5-17	FEDEX	FEDEX	9-7-17	[signature]
3						
5						2.1 2.4

* VOC VIAL BROKEN

JC50259: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC50259 **Client:** _____ **Project:** _____

Date / Time Received: 9/7/2017 9:40:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.1); Cooler 2: (2.4);

Cooler Temps (Corrected) °C: Cooler 1: (1.3); Cooler 2: (1.6);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC50259: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC50259

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC50259-1 I-1	Collected: 05-SEP-17 15:30 By: EC		Received: 07-SEP-17 By: AS			
JC50259-1	EPA 624	08-SEP-17 17:35	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-2 I-2	Collected: 05-SEP-17 15:35 By: EC		Received: 07-SEP-17 By: AS			
JC50259-2	EPA 624	08-SEP-17 18:06	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-3 I-3	Collected: 05-SEP-17 15:40 By: EC		Received: 07-SEP-17 By: AS			
JC50259-3	EPA 624	08-SEP-17 18:36	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-4 I-4	Collected: 05-SEP-17 15:45 By: EC		Received: 07-SEP-17 By: AS			
JC50259-4	EPA 624	08-SEP-17 19:06	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-5 INFLUENT	Collected: 05-SEP-17 15:50 By: EC		Received: 07-SEP-17 By: AS			
JC50259-5	EPA 624	08-SEP-17 19:36	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-6 EFFLUENT	Collected: 05-SEP-17 15:55 By: EC		Received: 07-SEP-17 By: AS			
JC50259-6	EPA 624	08-SEP-17 20:06	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-7 RIVOUT	Collected: 05-SEP-17 16:00 By: EC		Received: 07-SEP-17 By: AS			

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC50259

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC50259-7	EPA 624	08-SEP-17 20:36	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-8	Collected: 05-SEP-17 16:25 By: EC		Received: 07-SEP-17 By: AS			
W-6						
JC50259-8	EPA 624	08-SEP-17 21:06	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-9	Collected: 05-SEP-17 16:45 By: EC		Received: 07-SEP-17 By: AS			
W-12						
JC50259-9	EPA 624	08-SEP-17 21:36	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-10	Collected: 05-SEP-17 16:45 By: EC		Received: 07-SEP-17 By: AS			
TRIP BLANK						
JC50259-10	EPA 624	08-SEP-17 17:05	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC50259-7A	Collected: 05-SEP-17 16:00 By: EC		Received: 07-SEP-17 By: AS			
RIVOUT						
JC50259-7A	EPA 245.1	08-SEP-17 10:22	JA	08-SEP-17	JA	HG
JC50259-7A	SM2540 D-11	08-SEP-17 12:50	TZW			TSS
JC50259-7A	EPA 1664A	11-SEP-17 14:00	TT	11-SEP-17	TT	OG1664
JC50259-7A	EPA 200.7	11-SEP-17 17:06	AB	08-SEP-17	CH	AG,CU,FE,ZN
JC50259-7A	EPA 335.4/LACHAT	14-SEP-17 11:06	BM	12-SEP-17	RP	CN
JC50259-8A	Collected: 05-SEP-17 16:25 By: EC		Received: 07-SEP-17 By: AS			
W-6						
JC50259-8A	EPA 245.1	08-SEP-17 10:23	JA	08-SEP-17	JA	HG
JC50259-8A	SM2540 D-11	08-SEP-17 12:50	TZW			TSS
JC50259-8A	EPA 1664A	11-SEP-17 14:00	TT	11-SEP-17	TT	OG1664
JC50259-8A	EPA 200.7	11-SEP-17 17:11	AB	08-SEP-17	CH	AG,CU,FE,ZN
JC50259-8A	EPA 335.4/LACHAT	14-SEP-17 11:07	BM	12-SEP-17	RP	CN

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC50259

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC50259-9A	Collected: 05-SEP-17 16:45 By: EC			Received: 07-SEP-17 By: AS		
W-12						
JC50259-9A	EPA 245.1	08-SEP-17 10:25	JA	08-SEP-17	JA	HG
JC50259-9A	SM2540 D-11	08-SEP-17 12:50	TZW			TSS
JC50259-9A	EPA 1664A	11-SEP-17 14:00	TT	11-SEP-17	TT	OG1664
JC50259-9A	EPA 200.7	11-SEP-17 17:15	AB	08-SEP-17	CH	AG,CU,FE,ZN
JC50259-9A	EPA 335.4/LACHAT	14-SEP-17 11:09	BM	12-SEP-17	RP	CN

SGS Accutest Internal Chain of Custody

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 09/07/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC50259-7.1	Secured Storage	Todd Shoemaker	09/11/17 08:07	Retrieve from Storage
JC50259-7.1	Todd Shoemaker	Secured Staging Area	09/11/17 08:08	Return to Storage
JC50259-7.1	Secured Staging Area	Tyrus Takacs	09/11/17 11:24	Retrieve from Storage
JC50259-7.1	Tyrus Takacs		09/11/17 17:12	Depleted
JC50259-7.2	Secured Storage	Todd Shoemaker	09/11/17 08:07	Retrieve from Storage
JC50259-7.2	Todd Shoemaker	Secured Staging Area	09/11/17 08:08	Return to Storage
JC50259-7.2	Secured Staging Area	Tyrus Takacs	09/11/17 11:24	Retrieve from Storage
JC50259-7.2	Tyrus Takacs		09/11/17 17:12	Depleted
JC50259-7.3	Secured Storage	Jessica Adametz	09/08/17 07:05	Retrieve from Storage
JC50259-7.3	Jessica Adametz	Colleen Hill	09/08/17 09:49	Custody Transfer
JC50259-7.3	Colleen Hill	Secured Storage	09/08/17 11:07	Return to Storage
JC50259-7.3.1	Colleen Hill	Metals Digestion	09/08/17 11:01	Digestate from JC50259-7.3
JC50259-7.3.1	Metals Digestion	Colleen Hill	09/08/17 11:02	Digestate from JC50259-7.3
JC50259-7.3.1	Colleen Hill	Metals Digestate Storage	09/08/17 11:02	Return to Storage
JC50259-7.4	Secured Storage	Dwayne Johnson	09/08/17 10:27	Retrieve from Storage
JC50259-7.4	Dwayne Johnson	Secured Staging Area	09/08/17 10:28	Return to Storage
JC50259-7.4	Secured Staging Area	Timothy Zhen Wei Ho	09/08/17 10:50	Retrieve from Storage
JC50259-7.4	Timothy Zhen Wei Ho	Secured Storage	09/08/17 19:29	Return to Storage
JC50259-7.6	Secured Storage	Jennifer Voitovitch	09/10/17 16:26	Retrieve from Storage
JC50259-7.6	Jennifer Voitovitch	Secured Staging Area	09/10/17 16:26	Return to Storage
JC50259-7.6	Secured Staging Area	Thomas Gabriel	09/11/17 08:07	Retrieve from Storage
JC50259-7.6	Thomas Gabriel	Secured Storage	09/11/17 16:44	Return to Storage
JC50259-7.6	Secured Storage	Jennifer Voitovitch	09/11/17 23:03	Retrieve from Storage
JC50259-7.6	Jennifer Voitovitch	Secured Staging Area	09/11/17 23:03	Return to Storage
JC50259-7.6	Secured Staging Area	Rinku Patel	09/12/17 08:08	Retrieve from Storage
JC50259-7.6	Rinku Patel	Secured Storage	09/12/17 15:39	Return to Storage
JC50259-8.1	Secured Storage	Todd Shoemaker	09/11/17 08:07	Retrieve from Storage
JC50259-8.1	Todd Shoemaker	Secured Staging Area	09/11/17 08:08	Return to Storage
JC50259-8.1	Secured Staging Area	Tyrus Takacs	09/11/17 11:24	Retrieve from Storage
JC50259-8.1	Tyrus Takacs		09/11/17 17:12	Depleted
JC50259-8.3	Secured Storage	Jessica Adametz	09/08/17 07:05	Retrieve from Storage
JC50259-8.3	Jessica Adametz	Colleen Hill	09/08/17 09:49	Custody Transfer
JC50259-8.3	Colleen Hill	Secured Storage	09/08/17 11:07	Return to Storage
JC50259-8.3.1	Colleen Hill	Metals Digestion	09/08/17 11:01	Digestate from JC50259-8.3
JC50259-8.3.1	Metals Digestion	Colleen Hill	09/08/17 11:02	Digestate from JC50259-8.3
JC50259-8.3.1	Colleen Hill	Metals Digestate Storage	09/08/17 11:02	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 09/07/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC50259-8.4	Secured Storage	Dwayne Johnson	09/08/17 10:27	Retrieve from Storage
JC50259-8.4	Dwayne Johnson	Secured Staging Area	09/08/17 10:28	Return to Storage
JC50259-8.4	Secured Staging Area	Timothy Zhen Wei Ho	09/08/17 10:50	Retrieve from Storage
JC50259-8.4	Timothy Zhen Wei Ho	Secured Storage	09/08/17 19:29	Return to Storage
JC50259-8.6	Secured Storage	Jennifer Voitovitch	09/10/17 16:26	Retrieve from Storage
JC50259-8.6	Jennifer Voitovitch	Secured Staging Area	09/10/17 16:26	Return to Storage
JC50259-8.6	Secured Staging Area	Thomas Gabriel	09/11/17 08:07	Retrieve from Storage
JC50259-8.6	Thomas Gabriel	Secured Storage	09/11/17 16:44	Return to Storage
JC50259-8.6	Secured Storage	Jennifer Voitovitch	09/11/17 23:03	Retrieve from Storage
JC50259-8.6	Jennifer Voitovitch	Secured Staging Area	09/11/17 23:03	Return to Storage
JC50259-8.6	Secured Staging Area	Rinku Patel	09/12/17 08:08	Retrieve from Storage
JC50259-8.6	Rinku Patel	Secured Storage	09/12/17 15:39	Return to Storage
JC50259-9.2	Secured Storage	Todd Shoemaker	09/11/17 08:07	Retrieve from Storage
JC50259-9.2	Todd Shoemaker	Secured Staging Area	09/11/17 08:08	Return to Storage
JC50259-9.2	Secured Staging Area	Tyrus Takacs	09/11/17 11:24	Retrieve from Storage
JC50259-9.2	Tyrus Takacs		09/11/17 17:12	Depleted
JC50259-9.3	Secured Storage	Jessica Adametz	09/08/17 07:05	Retrieve from Storage
JC50259-9.3	Jessica Adametz	Colleen Hill	09/08/17 09:49	Custody Transfer
JC50259-9.3	Colleen Hill	Secured Storage	09/08/17 11:07	Return to Storage
JC50259-9.3.1	Colleen Hill	Metals Digestion	09/08/17 11:01	Digestate from JC50259-9.3
JC50259-9.3.1	Metals Digestion	Colleen Hill	09/08/17 11:02	Digestate from JC50259-9.3
JC50259-9.3.1	Colleen Hill	Metals Digestate Storage	09/08/17 11:02	Return to Storage
JC50259-9.5	Secured Storage	Dwayne Johnson	09/08/17 10:27	Retrieve from Storage
JC50259-9.5	Dwayne Johnson	Secured Staging Area	09/08/17 10:28	Return to Storage
JC50259-9.5	Secured Staging Area	Timothy Zhen Wei Ho	09/08/17 10:50	Retrieve from Storage
JC50259-9.5	Timothy Zhen Wei Ho	Secured Storage	09/08/17 19:29	Return to Storage
JC50259-9.6	Secured Storage	Jennifer Voitovitch	09/10/17 16:26	Retrieve from Storage
JC50259-9.6	Jennifer Voitovitch	Secured Staging Area	09/10/17 16:26	Return to Storage
JC50259-9.6	Secured Staging Area	Thomas Gabriel	09/11/17 08:07	Retrieve from Storage
JC50259-9.6	Thomas Gabriel	Secured Storage	09/11/17 16:44	Return to Storage
JC50259-9.6	Secured Storage	Jennifer Voitovitch	09/11/17 23:03	Retrieve from Storage
JC50259-9.6	Jennifer Voitovitch	Secured Staging Area	09/11/17 23:03	Return to Storage
JC50259-9.6	Secured Staging Area	Rinku Patel	09/12/17 08:08	Retrieve from Storage
JC50259-9.6	Rinku Patel	Secured Storage	09/12/17 15:39	Return to Storage

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9293-MB	T226322.D	1	09/08/17	PR	n/a	n/a	VT9293

The QC reported here applies to the following samples: **Method:** EPA 624

JC50259-1, JC50259-2, JC50259-3, JC50259-4, JC50259-5, JC50259-6, JC50259-7, JC50259-8, JC50259-9, JC50259-10

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	103%	76-122%
2037-26-5	Toluene-D8 (SUR)	100%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	80-120%
1868-53-7	Dibromofluoromethane (S)	102%	80-120%

Blank Spike Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9293-BS	T226323.D	1	09/08/17	PR	n/a	n/a	VT9293

The QC reported here applies to the following samples: **Method:** EPA 624

JC50259-1, JC50259-2, JC50259-3, JC50259-4, JC50259-5, JC50259-6, JC50259-7, JC50259-8, JC50259-9, JC50259-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	19.2	96	72-115
156-60-5	trans-1,2-Dichloroethene	20	20.0	100	70-121
540-59-0	1,2-Dichloroethene (total)	40	39.2	98	72-117
79-01-6	Trichloroethene	20	18.9	95	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%	76-122%
2037-26-5	Toluene-D8 (SUR)	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%	80-120%
1868-53-7	Dibromofluoromethane (S)	103%	80-120%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC50171-3MS	T226330.D	1	09/08/17	PR	n/a	n/a	VT9293
JC50171-3	T226327.D	1	09/08/17	PR	n/a	n/a	VT9293

The QC reported here applies to the following samples: **Method:** EPA 624

JC50259-1, JC50259-2, JC50259-3, JC50259-4, JC50259-5, JC50259-6, JC50259-7, JC50259-8, JC50259-9, JC50259-10

CAS No.	Compound	JC50171-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
156-59-2	cis-1,2-Dichloroethene	ND		20	19.7	99	50-134
156-60-5	trans-1,2-Dichloroethene	ND		20	21.7	109	63-129
540-59-0	1,2-Dichloroethene (total)	ND		40	41.4	104	48-138
79-01-6	Trichloroethene	ND		20	20.0	100	46-145

CAS No.	Surrogate Recoveries	MS	JC50171-3	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	102%	102%	76-122%
2037-26-5	Toluene-D8 (SUR)	99%	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%	100%	80-120%
1868-53-7	Dibromofluoromethane (S)	103%	102%	80-120%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC50171-1DUP	T226332.D	1	09/08/17	PR	n/a	n/a	VT9293
JC50171-1	T226325.D	1	09/08/17	PR	n/a	n/a	VT9293

The QC reported here applies to the following samples: **Method:** EPA 624

JC50259-1, JC50259-2, JC50259-3, JC50259-4, JC50259-5, JC50259-6, JC50259-7, JC50259-8, JC50259-9, JC50259-10

CAS No.	Compound	JC50171-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	22
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	14
540-59-0	1,2-Dichloroethene (total)	ND		ND		nc	22
79-01-6	Trichloroethene	ND		ND		nc	18

CAS No.	Surrogate Recoveries	DUP	JC50171-1	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	103%	104%	76-122%
2037-26-5	Toluene-D8 (SUR)	97%	96%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%	98%	80-120%
1868-53-7	Dibromofluoromethane (S)	103%	101%	80-120%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VT9291-BFB	**Injection Date:**	08/31/17
Lab File ID:	T226290.D	**Injection Time:**	21:54
Instrument ID:	GCMST		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12664	20.5		Pass
75	30.0 - 60.0% of mass 95	30985	50.3		Pass
95	Base peak, 100% relative abundance	61650	100.0		Pass
96	5.0 - 9.0% of mass 95	4076	6.61		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	56456	91.6		Pass
175	5.0 - 9.0% of mass 174	4579	7.43	(8.11) [a]	Pass
176	95.0 - 101.0% of mass 174	55530	90.1	(98.4) [a]	Pass
177	5.0 - 9.0% of mass 176	3206	5.20	(5.77) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9291-IC9291	T226291.D	08/31/17	22:24	00:30	Initial cal 0.5
VT9291-IC9291	T226292.D	08/31/17	22:54	01:00	Initial cal 0.2
VT9291-IC9291	T226293.D	08/31/17	23:24	01:30	Initial cal 1
VT9291-IC9291	T226294.D	08/31/17	23:54	02:00	Initial cal 2
VT9291-IC9291	T226295.D	09/01/17	00:24	02:30	Initial cal 5
VT9291-ICC9291	T226296.D	09/01/17	00:54	03:00	Initial cal 20
VT9291-IC9291	T226297.D	09/01/17	01:24	03:30	Initial cal 50
VT9291-IC9291	T226298.D	09/01/17	01:54	04:00	Initial cal 100
VT9291-IC9291	T226299.D	09/01/17	02:24	04:30	Initial cal 200
VT9291-ICV9291	T226302.D	09/01/17	03:54	06:00	Initial cal verification 20
VT9291-ICV9291	T226303.D	09/01/17	04:24	06:30	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9293-BFB
Lab File ID: T226320.D
Instrument ID: GCMST
Injection Date: 09/08/17
Injection Time: 08:58

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	22848	19.6		Pass
75	30.0 - 60.0% of mass 95	58008	49.8		Pass
95	Base peak, 100% relative abundance	116387	100.0		Pass
96	5.0 - 9.0% of mass 95	7058	6.06		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	102861	88.4		Pass
175	5.0 - 9.0% of mass 174	7047	6.05	(6.85) [a]	Pass
176	95.0 - 101.0% of mass 174	98990	85.1	(96.2) [a]	Pass
177	5.0 - 9.0% of mass 176	6810	5.85	(6.88) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9293-CC9291	T226321.D	09/08/17	09:29	00:31	Continuing cal 20
VT9293-MB	T226322.D	09/08/17	09:59	01:01	Method Blank
VT9293-BS	T226323.D	09/08/17	10:29	01:31	Blank Spike
JC50171-1	T226325.D	09/08/17	12:52	03:54	(used for QC only; not part of job JC50259)
ZZZZZZ	T226326.D	09/08/17	13:22	04:24	(unrelated sample)
JC50171-3	T226327.D	09/08/17	13:52	04:54	(used for QC only; not part of job JC50259)
ZZZZZZ	T226328.D	09/08/17	14:26	05:28	(unrelated sample)
ZZZZZZ	T226329.D	09/08/17	14:57	05:59	(unrelated sample)
JC50171-3MS	T226330.D	09/08/17	15:35	06:37	Matrix Spike
JC50171-1DUP	T226332.D	09/08/17	16:35	07:37	Duplicate
JC50259-10	T226333.D	09/08/17	17:05	08:07	TRIP BLANK
JC50259-1	T226334.D	09/08/17	17:35	08:37	I-1
JC50259-2	T226335.D	09/08/17	18:06	09:08	I-2
JC50259-3	T226336.D	09/08/17	18:36	09:38	I-3
JC50259-4	T226337.D	09/08/17	19:06	10:08	I-4
JC50259-5	T226338.D	09/08/17	19:36	10:38	INFLUENT
JC50259-6	T226339.D	09/08/17	20:06	11:08	EFFLUENT
JC50259-7	T226340.D	09/08/17	20:36	11:38	RIVOUT
JC50259-8	T226341.D	09/08/17	21:06	12:08	W-6
JC50259-9	T226342.D	09/08/17	21:36	12:38	W-12
ZZZZZZ	T226343.D	09/08/17	22:06	13:08	(unrelated sample)
VT9294-MB	T226346.D	09/08/17	23:06	14:08	Method Blank
VT9294-BS	T226347.D	09/08/17	23:36	14:38	Blank Spike
JC50212-1MS	T226348.D	09/09/17	00:06	15:08	Matrix Spike

Instrument Performance Check (BFB)

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VT9293-BFB	**Injection Date:**	09/08/17
Lab File ID:	T226320.D	**Injection Time:**	08:58
Instrument ID:	GCMST		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JC50212-1MSD	T226349.D	09/09/17	00:37	15:39	Matrix Spike Duplicate
ZZZZZZ	T226351.D	09/09/17	01:38	16:40	(unrelated sample)
ZZZZZZ	T226352.D	09/09/17	02:09	17:11	(unrelated sample)
JC50212-1	T226353.D	09/09/17	02:40	17:42	(used for QC only; not part of job JC50259)
JC50212-1	T226354.D	09/09/17	03:12	18:14	(used for QC only; not part of job JC50259)
ZZZZZZ	T226355.D	09/09/17	03:43	18:45	(unrelated sample)
ZZZZZZ	T226357.D	09/09/17	04:46	19:48	(unrelated sample)
ZZZZZZ	T226359.D	09/09/17	05:48	20:50	(unrelated sample)
ZZZZZZ	T226360.D	09/09/17	06:19	21:21	(unrelated sample)
ZZZZZZ	T226361.D	09/09/17	06:50	21:52	(unrelated sample)

Internal Standard Area Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std: VT9293-CC9291 **Injection Date:** 09/08/17
Lab File ID: T226321.D **Injection Time:** 09:29
Instrument ID: GCMST **Method:** EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	155134	7.44	290983	9.47	427020	10.34	244284	16.08	396766	13.54
Upper Limit [a]	310268	7.94	581966	9.97	854040	10.84	488568	16.58	793532	14.04
Lower Limit [b]	77567	6.94	145492	8.97	213510	9.84	122142	15.58	198383	13.04

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VT9293-MB	149634	7.45	283491	9.48	416583	10.33	240030	16.08	378765	13.54
VT9293-BS	145557	7.44	280657	9.48	413052	10.33	233038	16.08	383572	13.54
JC50171-1	140510	7.44	278745	9.48	402924	10.33	240754	16.08	381575	13.54
ZZZZZZ	133474	7.45	288135	9.47	416263	10.33	240129	16.08	392575	13.54
JC50171-3	119707	7.45	294117	9.47	433538	10.34	241310	16.08	399586	13.54
ZZZZZZ	130255	7.44	289205	9.48	427423	10.34	237105	16.08	401466	13.54
ZZZZZZ	125608	7.45	267498	9.47	389802	10.33	228592	16.08	367442	13.54
JC50171-3MS	110347	7.44	273352	9.48	410806	10.34	229502	16.08	388218	13.54
JC50171-1DUP	136600	7.45	276598	9.48	401021	10.34	228059	16.08	375222	13.54
JC50259-10	128570	7.44	259779	9.48	378155	10.33	213790	16.08	347884	13.54
JC50259-1	135067	7.44	266997	9.47	395798	10.33	234557	16.08	366087	13.54
JC50259-2	138875	7.44	266760	9.48	392265	10.34	229485	16.08	364037	13.54
JC50259-3	131649	7.44	260484	9.47	384040	10.34	222190	16.08	357432	13.54
JC50259-4	131646	7.44	260693	9.47	386030	10.33	232846	16.08	363840	13.54
JC50259-5	131377	7.44	265256	9.47	386948	10.33	228444	16.08	366879	13.54
JC50259-6	131842	7.45	269131	9.47	389625	10.34	226689	16.08	363645	13.54
JC50259-7	129958	7.44	261252	9.48	385244	10.33	221691	16.08	355689	13.54
JC50259-8	133974	7.45	261978	9.48	381687	10.34	222395	16.08	355065	13.54
JC50259-9	131506	7.44	259599	9.47	370645	10.33	219570	16.08	344871	13.54
ZZZZZZ	111182	7.44	270589	9.48	399351	10.34	223907	16.08	376171	13.54
VT9294-MB	123790	7.44	272062	9.48	397991	10.34	227023	16.08	365861	13.54
VT9294-BS	137067	7.44	280763	9.48	420049	10.33	233663	16.08	397898	13.54
JC50212-1MS	130047	7.44	269501	9.47	393713	10.34	225348	16.08	366905	13.54
JC50212-1MSD	133015	7.44	265965	9.47	400441	10.34	229717	16.08	374966	13.54
ZZZZZZ	136114	7.44	265154	9.48	392712	10.34	225596	16.08	368299	13.54
ZZZZZZ	139703	7.45	276094	9.48	405176	10.34	224846	16.08	375605	13.54
JC50212-1	140844	7.45	280082	9.48	421374	10.34	221223	16.08	389937	13.54
JC50212-1	136639	7.45	281121	9.48	423547	10.34	228742	16.08	393925	13.54
ZZZZZZ	135556	7.44	272260	9.48	406555	10.34	220984	16.08	374037	13.54
ZZZZZZ	133750	7.45	260528	9.48	389924	10.34	224106	16.08	368914	13.54
ZZZZZZ	135835	7.44	262017	9.48	396063	10.33	230938	16.08	373978	13.54
ZZZZZZ	139432	7.45	263633	9.48	398105	10.34	228966	16.08	377626	13.54
ZZZZZZ	134900	7.45	264844	9.48	394497	10.34	227907	16.08	372963	13.54

IS 1 = Tert Butyl Alcohol-D9

Internal Standard Area Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std:	VT9293-CC9291	**Injection Date:**	09/08/17
Lab File ID:	T226321.D	**Injection Time:**	09:29
Instrument ID:	GCMST	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT	IS 5 AREA	IS 5 RT

IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC50259-1	T226334.D	102	97	98	103
JC50259-2	T226335.D	104	98	98	106
JC50259-3	T226336.D	102	98	100	103
JC50259-4	T226337.D	103	98	96	105
JC50259-5	T226338.D	101	97	99	104
JC50259-6	T226339.D	104	99	100	104
JC50259-7	T226340.D	104	98	98	103
JC50259-8	T226341.D	103	98	99	103
JC50259-9	T226342.D	104	98	97	102
JC50259-10	T226333.D	100	99	99	102
JC50171-1DUP	T226332.D	103	97	100	103
JC50171-3MS	T226330.D	102	99	103	103
VT9293-BS	T226323.D	106	99	101	103
VT9293-MB	T226322.D	103	100	98	102

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4 (SUR)	76-122%
S2 = Toluene-D8 (SUR)	80-120%
S3 = 4-Bromofluorobenzene (SUR)	80-120%
S4 = Dibromofluoromethane (S)	80-120%

Initial Calibration Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9291-ICC9291
Lab FileID: T226296.D

Response Factor Report GCMST

Method : C:\MSDCHEM\1\METHODS\MT9291.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

Calibration Files
5 =T226295.D 20 =T226296.D 50 =T226297.D 100 =T226298.D
200 =T226299.D 2 =T226294.D 1 =T226293.D 0.5 =T226291.D
0.2 =T226292.D =

Compound	5	20	50	100	200	2	1	0.5	0.2	Avg	%RSD
1) TERT BUTYL ALCOHOL-d9 ----------ISTD----------											
2) TERTIARY BUTYL ALCOHOL	1.206	1.164	1.130	1.180	1.116	1.519	1.212			1.218	11.30
3) 1,4-DIOXANE	0.096	0.097	0.103	0.106	0.101	0.111	0.094			0.101	6.13
4) PENTAFLUOROBENZENE ----------ISTD----------											
5) CHLORODIFLUOROMETHANE	0.914	0.881	0.925	0.870	0.839	1.050	0.987			0.924	7.89
6) DICHLORODIFLUOROMETHANE	1.229	1.195	1.268	1.160	1.107	1.346	0.775			1.154	15.94
7) FREON 143A											
This compound does not meet initial calibration criteria	8.754	8.929	9.258	8.175	7.378	7.971	9.011			8.497	7.94
8) FREON 142B	0.770	0.751	0.783	0.718	0.723	0.687	0.755			0.741	4.47
9) CHLOROMETHANE	0.901	0.831	0.848	0.774	0.773	0.902	0.630			0.808	11.67
10) VINYL CHLORIDE	0.950	0.891	0.939	0.844	0.837	0.940	0.688	0.966	1.026	0.898	10.99
11) BROMOMETHANE	0.591	0.542	0.590	0.564	0.502	0.575	0.645			0.572	7.76
12) CHLOROETHANE	0.450	0.427	0.459	0.438	0.481	0.463	0.409	0.564		0.461	10.22
13) VINYL BROMIDE	0.807	0.787	0.804	0.765	0.802	0.812	0.544	0.942		0.783	14.07
14) TRICHLOROFLUOROMETHANE	0.943	0.942	0.976	0.921	0.936	0.956	0.506	0.898		0.885	17.49
15) PENTANE	0.672	0.708	0.724	0.718	0.738	0.804	0.506			0.695	13.31
16) FREON 141B	0.791	0.773	0.805	0.785	0.796	0.740	0.801	0.776		0.783	2.67
17) ETHYL ETHER	0.226	0.209	0.203	0.206	0.202	0.236	0.273	0.237		0.224	10.93
18) 1,1-DICHLOROETHYLENE	0.692	0.648	0.652	0.648	0.634	0.709	0.604	0.615		0.650	5.47
19) FREON 113	0.446	0.435	0.444	0.441	0.433	0.490	0.372			0.437	7.88
20) ACROLEIN	0.075	0.069	0.066	0.063	0.061					0.067	7.81
21) ACETONE	0.028	0.028	0.027	0.027	0.027	0.038	0.050			0.032	27.93
22) CARBON DISULFIDE	1.506	1.413	1.438	1.431	1.392	1.534	1.226	1.412	1.382	1.415	6.15

23) IODOMETHANE
0.825 0.793 0.786 0.770 0.752 0.839 0.736 0.716 0.777 5.46

24) ACETONITRILE
0.053 0.048 0.046 0.047 0.046 0.060 0.050 10.82

25) METHYL ACETATE
0.277 0.297 0.266 0.272 0.260 0.322 0.282 8.21

26) METHYLENE CHLORIDE
0.445 0.434 0.415 0.415 0.408 0.481 0.401 0.518 0.523 0.449 10.49

27) ACRYLONITRILE
0.161 0.129 0.126 0.130 0.126 0.135 11.02

28) METHYL TERT BUTYL ETHER
1.423 1.383 1.385 1.425 1.400 1.510 1.447 1.798 1.472 9.39

29) trans-1,2-DICHLOROETHYLENE
0.639 0.604 0.620 0.629 0.613 0.636 0.538 0.681 0.620 6.49

30) HEXANE
0.599 0.572 0.587 0.606 0.598 0.707 0.619 0.766 0.632 10.76

31) 1,1-DICHLOROETHANE
0.775 0.760 0.778 0.810 0.779 0.835 0.738 0.777 0.694 0.772 5.21

32) VINYL ACETATE
0.073 0.066 0.068 0.073 0.068 0.070 4.28

33) DI-ISOPROPYL ETHER
1.600 1.594 1.572 1.640 1.592 1.795 1.599 1.858 1.728 1.664 6.24

34) ETHYL TERT BUTYL ETHER
1.528 1.524 1.502 1.565 1.561 1.593 1.415 1.599 1.543 1.537 3.61

35) 2-BUTANONE
0.038 0.036 0.037 0.038 0.037 0.042 0.037 0.043 0.039 6.77

36) cis-1,2-DICHLOROETHYLENE
0.532 0.490 0.481 0.499 0.485 0.555 0.582 0.518 7.58

37) 2,2-DICHLOROPROPANE
0.858 0.829 0.845 0.838 0.818 0.949 0.836 0.853 5.18

38) ETHYL ACETATE
0.068 0.055 0.051 0.058 0.052 0.057 12.03

39) BROMOCHLOROMETHANE
0.245 0.235 0.232 0.234 0.233 0.248 0.241 0.245 0.239 2.68

40) TETRAHYDROFURAN
0.140 0.127 0.115 0.118 0.118 0.168 0.131 15.50

41) CHLOROFORM
0.798 0.779 0.786 0.800 0.787 0.890 0.763 0.899 0.813 6.36

42) t-BUTYL FORMATE
This compound does not meet initial calibration criteria
0.193 0.185 0.174 0.184 0.177 0.205 0.207 0.189 6.83

43) 1,1,1-TRICHLOROETHANE
0.861 0.861 0.879 0.882 0.870 0.915 0.820 0.935 0.885 0.879 3.74

44) CYCLOHEXANE
0.704 0.706 0.783 0.776 0.775 0.753 0.718 0.737 0.744 4.35

45) DIBROMOFLUOROMETHANE (SUR)
0.470 0.469 0.482 0.474 0.477 0.467 0.473 0.474 0.464 0.472 1.19

46) 1,1-DICHLOROPROPENE
0.592 0.592 0.634 0.634 0.624 0.623 0.580 0.546 0.603 5.16

47) CARBON TETRACHLORIDE
0.790 0.781 0.844 0.815 0.798 0.839 0.744 0.772 0.674 0.784 6.65

48) ISOPROPYL ACETATE
0.078 0.076 0.079 0.085 0.081 0.093 0.082 7.45

49) 1,4-DIFLUOROBENZENE ----------ISTD----------

50) 1,2-DICHLOROETHANE-d4
0.354 0.356 0.354 0.346 0.341 0.351 0.360 0.359 0.358 0.353 1.81

51) BENZENE
1.206 1.215 1.243 1.217 1.173 1.301 1.175 1.263 1.130 1.214 4.23

52) 1,2-DICHLOROETHANE

```
          0.414 0.396 0.402 0.395 0.375 0.401 0.379 0.431 0.424   0.402    4.63
53)  2,2,4-TRIMETHYLPENTANE
          1.170 1.145 1.257 1.238 1.343 1.252 1.089 0.970         1.183    9.83
54)  TERT-AMYL METHYL ETHER
          1.047 1.050 1.082 1.013 0.998 1.074 0.967 1.064         1.037    3.88
55)  HEPTANE
          0.233 0.236 0.256 0.251 0.242 0.306 0.207               0.247   12.30
56)  TRICHLOROETHYLENE
          0.317 0.311 0.304 0.311 0.310 0.360 0.288 0.368 0.355   0.325    8.69
57)  1,2-DICHLOROPROPANE
          0.317 0.317 0.332 0.329 0.327 0.359 0.293 0.297 0.307   0.320    6.26
58)  DIBROMOMETHANE
          0.187 0.180 0.176 0.179 0.173 0.202 0.190 0.187         0.184    5.05
59)  METHYL METHACRYLATE
          0.055 0.067 0.066 0.068 0.066 0.080 0.070               0.067   11.01
60)  METHYLCYCLOHEXANE
          0.674 0.660 0.699 0.681 0.676 0.705 0.616 0.579         0.661    6.52
61)  BROMODICHLOROMETHANE
          0.429 0.415 0.409 0.417 0.410 0.469 0.398 0.459         0.426    5.99
62)  2-CHLOROETHYL VINYL ETHER
     *This compound does not meet initial calibration criteria*
          0.119 0.119 0.122 0.123 0.117 0.124 0.108 0.119 0.121   0.119    3.97
63)  EPICHLOROHYDRIN
          0.028 0.023 0.023 0.023 0.023 0.032 0.045               0.028   29.01
64)  cis-1,3-DICHLOROPROPENE
          0.478 0.478 0.468 0.492 0.482 0.528 0.432 0.479         0.479    5.50
65)  4-METHYL-2-PENTANONE
          0.102 0.103 0.108 0.107 0.104 0.103 0.105 0.111 0.122   0.107    5.90

66) I   CHLOROBENZENE-D5      ----------------ISTD--------------------
67)  TOLUENE-d8
          1.272 1.270 1.301 1.286 1.272 1.283 1.277 1.273 1.249   1.276    1.10
68)  TOLUENE
          0.759 0.764 0.825 0.819 0.785 0.822 0.687 0.853 0.706   0.780    7.23
69)  ETHYL METHACRYLATE
          0.388 0.377 0.380 0.387 0.373 0.454 0.407               0.395    7.11
70)  trans-1,3-DICHLOROPROPENE
          0.473 0.450 0.454 0.466 0.443 0.529 0.480 0.479         0.472    5.67
71)  1,1,2-TRICHLOROETHANE
          0.225 0.222 0.214 0.214 0.207 0.245 0.246 0.275         0.231    9.83
72)  TETRACHLOROETHYLENE
          0.288 0.291 0.313 0.303 0.294 0.305 0.277 0.271         0.293    4.88
73)  2-HEXANONE
          0.102 0.099 0.097 0.097 0.093 0.107 0.083 0.106         0.098    7.88
74)  1,3-DICHLOROPROPANE
          0.417 0.427 0.440 0.438 0.414 0.460 0.409 0.447         0.432    4.10
75)  BUTYL ACETATE
          0.186 0.183 0.178 0.180 0.170 0.198 0.243               0.191   12.76
76)  3,3-DIMETHYL-1-BUTANOL
          0.036 0.034 0.035 0.035 0.037 0.041 0.037               0.036    6.09
77)  DIBROMOCHLOROMETHANE
          0.340 0.330 0.332 0.335 0.326 0.365 0.301 0.357 0.298   0.332    6.71
78)  ETHYLENE DIBROMIDE
          0.277 0.274 0.271 0.264 0.255 0.313 0.271 0.303 0.269   0.278    6.70
79)  CHLOROBENZENE
          0.912 0.900 0.924 0.917 0.877 1.007 0.848 0.842 0.814   0.894    6.37
80)  1,1,1,2-TETRACHLOROETHANE
          0.417 0.418 0.453 0.439 0.426 0.406 0.365 0.368         0.412    7.66
81)  ETHYLBENZENE
          1.588 1.567 1.666 1.611 1.486 1.748 1.528 1.594 1.690   1.608    5.06
```

Initial Calibration Summary

Job Number: JC50259 **Sample:** VT9291-ICC9291
Account: UTC United Technologies Corporation **Lab FileID:** T226296.D
Project: SECORINI: Zanesville OH, Monthly

```
 82)  m,p-XYLENE
            0.587 0.596 0.631 0.619 0.592 0.609 0.519 0.578 0.505   0.582    7.37
 83)  o-XYLENE
            1.444 1.414 1.475 1.457 1.371 1.484 1.313 1.495 1.180   1.404    7.30
 84)  STYRENE
            1.023 1.057 1.080 1.065 1.015 1.114 0.947 0.989 1.022   1.034    4.87
 85)  n-AMYL ACETATE
            0.248 0.232 0.235 0.223 0.225 0.279 0.269               0.245    8.99
 86)  BROMOFORM
            0.244 0.237 0.232 0.234 0.225 0.265 0.213 0.209 0.227   0.232    7.23
 87)  CUMENE
            1.818 1.841 1.933 1.875 1.722 1.943 1.599 1.573         1.788    7.98
 88)  cis-1,4-DICHLORO-2-BUTENE
            0.141 0.142 0.144 0.137 0.128 0.157 0.149               0.143    6.47

 89)     1,4-DICHLOROBENZENE-D ----------------ISTD---------------------
 90)  4-BROMOFLUOROBENZENE
            0.743 0.739 0.741 0.758 0.767 0.720 0.716 0.720 0.718   0.736    2.49
 91)  1,1,2,2-TETRACHLOROETHANE
            0.628 0.609 0.614 0.620 0.608 0.686 0.604               0.624    4.57
 92)  trans-1,4-DICHLORO-2-BUTENE
            0.181 0.171 0.164 0.162 0.154 0.195                     0.171    8.66
 93)  1,2,3-TRICHLOROPROPANE
            0.161 0.152 0.156 0.159 0.155 0.189 0.200               0.167   11.24
 94)  N-PROPYLBENZENE
            3.277 3.340 3.438 3.487 3.215 3.519 2.774 3.421 2.698   3.241    9.34
 95)  BROMOBENZENE
            0.739 0.719 0.731 0.740 0.728 0.787 0.614 0.724         0.723    6.73
 96)  2-CHLOROTOLUENE
            0.700 0.704 0.743 0.773 0.777 0.732 0.655 0.680         0.720    6.02
 97)  4-CHLOROTOLUENE
            1.905 1.922 2.047 2.033 1.964 1.980 1.777 1.869         1.937    4.60
 98)  1,3,5-TRIMETHYLBENZENE
            2.511 2.572 2.821 2.876 2.763 2.606 2.153 2.268         2.571   10.01
 99)  TERT-BUTYLBENZENE
            2.141 2.238 2.445 2.593 2.542 2.272 1.894 1.927         2.257   11.66
100)  1,2,4-TRIMETHYLBENZENE
            2.661 2.676 2.849 2.856 2.724 2.612 2.267 2.803 2.180   2.625    9.28
101)  SEC-BUTYLBENZENE
            3.395 3.546 3.875 3.884 3.607 3.568 2.807 2.925         3.451   11.53
102)  P-ISOPROPYLTOLUENE
            2.875 2.981 3.181 3.221 3.075 3.023 2.483 2.827 2.671   2.926    8.20
103)  1,3-DICHLOROBENZENE
            1.482 1.475 1.504 1.495 1.458 1.650 1.278 1.646 1.239   1.470    9.49
104)  1,4-DICHLOROBENZENE
            1.586 1.508 1.479 1.491 1.456 1.691 1.423 1.552 1.665   1.539    6.02
105)  N-BUTYLBENZENE
            0.816 0.769 0.801 0.808 0.829 0.878 0.770 0.854         0.816    4.62
106)  1,2-DICHLOROBENZENE
            1.597 1.556 1.530 1.559 1.502 1.686 1.461 1.520 1.559   1.552    4.10
107)  HEXACHLOROETHANE
            0.315 0.334 0.368 0.394 0.419 0.328 0.261               0.346   15.28
108)  1,2-DIBROMO-3-CHLOROPROPANE
            0.189 0.170 0.165 0.159 0.162 0.196 0.194               0.177    8.99
109)  HEXACHLOROBUTADIENE
            0.801 0.779 0.820 0.817 0.878 0.909 0.721 0.837         0.820    7.04
110)  1,3,5-TRICHLOROBENZENE
            1.787 1.683 1.699 1.660 1.688 1.797 1.501 1.718 1.513   1.672    6.22
111)  NITROBENZENE
      *This compound does not meet initial calibration criteria*
```

Initial Calibration Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9291-ICC9291
Lab FileID: T226296.D

```
                0.042 0.041 0.042 0.047                          0.043    5.97
112)  1,2,4-TRICHLOROBENZENE
           1.567 1.545 1.540 1.509 1.520 1.675 1.448 1.441 1.460   1.523    4.76
113)  1,2,3-TRICHLOROBENZENE
           1.367 1.366 1.370 1.343 1.350 1.411 1.198 1.395 1.496   1.366    5.72
114)  NAPHTHALENE
           2.689 2.744 2.719 2.583 2.534 2.818 2.433 2.783 3.075   2.709    6.86
115)  INDANE
           2.481 2.546 2.577 2.592 2.519 2.628 2.359 2.430 2.976   2.568    6.80
116)  ETHYLENIMINE
                                                                   0.000   -1.00
117)  BIS(CHLOROMETHYL)ETHER
                                                                   0.000   -1.00
 ----------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           MT9291.M          Fri Sep 08 12:21:26 2017   MSDT
```

Initial Calibration Verification

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9291-ICV9291
Lab FileID: T226302.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T226302.D Vial: 13
Acq On : 1 Sep 2017 3:54 am Operator: payalr
Sample : ICV9291-20 Inst : GCMST
Misc : MS19096,VT9291,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9291.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Sep 08 12:16:04 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	115	0.00	7.45
2	M	TERTIARY BUTYL ALCOHOL	1.218	1.108	9.0	109	0.00	7.55
3	M	1,4-DIOXANE	0.101	0.101	0.0	119	0.00	11.02
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	116	0.00	9.47
5		CHLORODIFLUOROMETHANE	0.924	0.743	19.6	98	0.00	4.37
6	M	DICHLORODIFLUOROMETHANE	1.154	1.106	4.2	107	0.00	4.37
7	M	FREON 143A	8.497	1.620	80.9#	21#	-0.02	4.02
8	M	FREON 142B	0.741	0.899	-21.3	139	0.00	4.62
9	M	CHLOROMETHANE	0.808	0.724	10.4	101	0.00	4.70
10	M	VINYL CHLORIDE	0.898	0.766	14.7	100	0.00	4.94
11	M	BROMOMETHANE	0.572	0.514	10.1	110	0.00	5.58
12	M	CHLOROETHANE	0.461	0.393	14.8	107	0.00	5.74
13		VINYL BROMIDE	0.783	0.555	29.1	82	0.00	6.06
14	M	TRICHLOROFLUOROMETHANE	0.885	0.832	6.0	102	0.00	6.14
15	M	PENTANE	0.695	0.783	-12.7	128	0.00	6.25
16	M	FREON 141B	0.783	0.764	2.4	115	0.00	6.54
17		ETHYL ETHER	0.224	0.205	8.5	114	0.01	6.53
18	M	1,1-DICHLOROETHYLENE	0.650	0.602	7.4	108	0.00	6.91
19	M	FREON 113	0.437	0.496	-13.5	132	0.00	6.89
20		ACROLEIN	0.067	0.070	-4.5	118	0.00	6.74
21	M	ACETONE	0.032	0.028	12.5	115	0.00	6.93
22	M	CARBON DISULFIDE	1.415	1.611	-13.9	132	0.00	7.29
23	M	IODOMETHANE	0.777	0.733	5.7	107	0.00	7.16
24		ACETONITRILE		----------NA----------				
25		METHYL ACETATE	0.282	0.246	12.8	96	0.00	7.33
26	M	METHYLENE CHLORIDE	0.449	0.419	6.7	112	0.00	7.52
27	M	ACRYLONITRILE	0.135	0.145	-7.4	130	0.00	7.80
28	M	METHYL TERT BUTYL ETHER	1.472	1.381	6.2	116	0.00	7.83
29	M	trans-1,2-DICHLOROETHYLEN	0.620	0.599	3.4	115	0.00	7.86
30	M	HEXANE	0.632	0.489	22.6	99	0.00	8.15
31	M	1,1-DICHLOROETHANE	0.772	0.780	-1.0	119	0.00	8.37
32	M	VINYL ACETATE	0.070	0.071	-1.4	125	0.00	8.34
33	M	DI-ISOPROPYL ETHER	1.664	1.564	6.0	114	0.00	8.36
34	M	ETHYL TERT BUTYL ETHER	1.537	1.463	4.8	111	0.00	8.77
35	M	2-BUTANONE	0.039	0.038	2.6	125	0.00	8.98
36	M	cis-1,2-DICHLOROETHYLENE	0.518	0.484	6.6	115	0.00	9.03
37	M	2,2-DICHLOROPROPANE	0.853	0.772	9.5	108	0.00	9.05
38	M	ETHYL ACETATE	0.057	0.053	7.0	112	0.00	8.99
39		BROMOCHLOROMETHANE	0.239	0.232	2.9	114	0.00	9.30
40	M	TETRAHYDROFURAN	0.131	0.126	3.8	115	0.01	9.35
41	M	CHLOROFORM	0.813	0.812	0.1	121	0.00	9.34

Initial Calibration Verification

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9291-ICV9291
Lab FileID: T226302.D

42		t-BUTYL FORMATE	0.189	0.328	-73.5#	205#	0.00	9.40
43	M	1,1,1-TRICHLOROETHANE	0.879	0.838	4.7	113	0.00	9.61
44		CYCLOHEXANE	0.744	0.730	1.9	120	0.00	9.70
45	S	DIBROMOFLUOROMETHANE (SUR	0.472	0.472	0.0	117	0.00	9.52
46		1,1-DICHLOROPROPENE	0.603	0.595	1.3	116	0.00	9.77
47		CARBON TETRACHLORIDE	0.784	0.761	2.9	113	0.00	9.80
48		ISOPROPYL ACETATE	0.082	0.083	-1.2	127	0.00	9.90
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	120	0.00	10.34
50	S	1,2-DICHLOROETHANE-d4	0.353	0.361	-2.3	122	0.00	9.92
51	M	BENZENE	1.214	1.169	3.7	116	0.00	10.02
52	M	1,2-DICHLOROETHANE	0.402	0.410	-2.0	125	0.00	10.00
53		2,2,4-TRIMETHYLPENTANE	1.183	1.049	11.3	110	0.00	10.03
54	M	TERT-AMYL METHYL ETHER	1.037	0.963	7.1	110	0.00	10.04
55	M	HEPTANE	0.247	0.234	5.3	119	0.00	10.18
56	M	TRICHLOROETHYLENE	0.325	0.302	7.1	117	0.00	10.67
57	M	1,2-DICHLOROPROPANE	0.320	0.320	0.0	122	0.00	10.92
58	M	DIBROMOMETHANE	0.184	0.181	1.6	121	0.00	11.06
59		METHYL METHACRYLATE	0.067	0.067	0.0	120	0.00	10.90
60		METHYLCYCLOHEXANE	0.661	0.578	12.6	105	0.00	10.92
61	M	BROMODICHLOROMETHANE	0.426	0.422	0.9	123	0.00	11.18
62	M	2-CHLOROETHYL VINYL ETHER	0.119	0.168	-41.2#	170	0.00	11.41
63	M	EPICHLOROHYDRIN	0.028	0.024	14.3	128	0.00	11.53
64	M	cis-1,3-DICHLOROPROPENE	0.479	0.467	2.5	118	0.00	11.64
65	M	4-METHYL-2-PENTANONE	0.107	0.099	7.5	116	0.00	11.74
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	116	0.00	13.54
67	S	TOLUENE-d8	1.276	1.297	-1.6	119	0.00	11.96
68		TOLUENE	0.780	0.807	-3.5	123	0.00	12.03
69		ETHYL METHACRYLATE	0.395	0.379	4.1	117	0.00	12.20
70		trans-1,3-DICHLOROPROPENE	0.472	0.479	-1.5	124	0.00	12.20
71		1,1,2-TRICHLOROETHANE	0.231	0.225	2.6	118	0.00	12.43
72	M	TETRACHLOROETHYLENE	0.293	0.291	0.7	116	0.00	12.64
73	M	2-HEXANONE	0.098	0.097	1.0	114	0.00	12.61
74		1,3-DICHLOROPROPANE	0.432	0.445	-3.0	121	0.00	12.63
75	M	BUTYL ACETATE	0.191	0.180	5.8	115	0.00	12.69
76		3,3-DIMETHYL-1-BUTANOL	0.036	0.035	2.8	120	0.00	12.77
77	M	DIBROMOCHLOROMETHANE	0.332	0.346	-4.2	122	0.00	12.90
78	M	ETHYLENE DIBROMIDE	0.278	0.274	1.4	116	0.00	13.07
79	M	CHLOROBENZENE	0.894	0.910	-1.8	118	0.00	13.57
80	M	1,1,1,2-TETRACHLOROETHANE	0.412	0.429	-4.1	119	0.00	13.63
81	M	ETHYLBENZENE	1.608	1.586	1.4	118	0.00	13.64
82	M	m,p-XYLENE	0.582	0.603	-3.6	118	0.00	13.75
83	M	o-XYLENE	1.404	1.405	-0.1	116	0.00	14.21
84	M	STYRENE	1.034	1.046	-1.2	115	0.00	14.21
85		n-AMYL ACETATE	0.245	0.234	4.5	117	0.00	14.23
86	M	BROMOFORM	0.232	0.234	-0.9	115	0.00	14.48
87	M	CUMENE	1.788	1.746	2.3	110	0.00	14.58
88		cis-1,4-DICHLORO-2-BUTENE	0.143	0.129	9.8	106	0.00	14.63
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	111	0.00	16.08
90	S	4-BROMOFLUOROBENZENE	0.736	0.756	-2.7	113	0.00	14.80
91		1,1,2,2-TETRACHLOROETHANE	0.624	0.635	-1.8	116	0.00	14.88
92		trans-1,4-DICHLORO-2-BUTE	0.171	0.184	-7.6	119	0.00	14.93
93		1,2,3-TRICHLOROPROPANE	0.167	0.165	1.2	120	0.00	14.98
94		N-PROPYLBENZENE	3.241	3.331	-2.8	110	0.00	15.03
95		BROMOBENZENE	0.723	0.742	-2.6	114	0.00	15.02
96		2-CHLOROTOLUENE	0.720	0.722	-0.3	114	0.00	15.19
97		4-CHLOROTOLUENE	1.937	2.031	-4.9	117	0.00	15.30
98	M	1,3,5-TRIMETHYLBENZENE	2.571	2.663	-3.6	115	0.00	15.19

Initial Calibration Verification

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9291-ICV9291
Lab FileID: T226302.D

99		TERT-BUTYLBENZENE	2.257	2.273	-0.7	112	0.00	15.59
100	M	1,2,4-TRIMETHYLBENZENE	2.625	2.715	-3.4	112	0.00	15.63
101		SEC-BUTYLBENZENE	3.451	3.525	-2.1	110	0.00	15.83
102		P-ISOPROPYLTOLUENE	2.926	2.968	-1.4	110	0.00	15.96
103	M	1,3-DICHLOROBENZENE	1.470	1.476	-0.4	111	0.00	16.02
104	M	1,4-DICHLOROBENZENE	1.539	1.523	1.0	112	0.00	16.11
105		N-BUTYLBENZENE	0.816	0.747	8.5	108	0.00	16.41
106	M	1,2-DICHLOROBENZENE	1.552	1.583	-2.0	113	0.00	16.54
107		HEXACHLOROETHANE	0.346	0.334	3.5	111	0.00	16.85
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.177	0.172	2.8	112	0.00	17.37
109		HEXACHLOROBUTADIENE	0.820	0.770	6.1	109	0.00	18.42
110		1,3,5-TRICHLOROBENZENE	1.672	1.675	-0.2	110	0.00	17.59
111		NITROBENZENE	0.043	0.043	0.0	112	0.00	17.60
112	M	1,2,4-TRICHLOROBENZENE	1.523	1.548	-1.6	111	0.00	18.28
113		1,2,3-TRICHLOROBENZENE	1.366	1.332	2.5	108	0.00	18.87
114	M	NAPHTHALENE	2.709	2.708	0.0	109	0.00	18.60
115	M	INDANE	2.568	2.285	11.0	99	0.00	16.39
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T226296.D MT9291.M Fri Sep 08 12:19:31 2017 MSDT

Initial Calibration Verification

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9291-ICV9291
Lab FileID: T226303.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T226303.D Vial: 14
Acq On : 1 Sep 2017 4:24 am Operator: payalr
Sample : ICV9291-20 Inst : GCMST
Misc : MS19096,VT9291,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9291.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Sep 08 12:16:04 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	108	0.00	7.45
2	M	TERTIARY BUTYL ALCOHOL		----------NA----------				
3	M	1,4-DIOXANE		----------NA----------				
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	112	0.00	9.48
5		CHLORODIFLUOROMETHANE		----------NA----------				
6	M	DICHLORODIFLUOROMETHANE		----------NA----------				
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE		----------NA----------				
10	M	VINYL CHLORIDE		----------NA----------				
11	M	BROMOMETHANE		----------NA----------				
12	M	CHLOROETHANE		----------NA----------				
13		VINYL BROMIDE		----------NA----------				
14	M	TRICHLOROFLUOROMETHANE		----------NA----------				
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER		----------NA----------				
18	M	1,1-DICHLOROETHYLENE		----------NA----------				
19	M	FREON 113		----------NA----------				
20		ACROLEIN		----------NA----------				
21	M	ACETONE		----------NA----------				
22	M	CARBON DISULFIDE		----------NA----------				
23	M	IODOMETHANE		----------NA----------				
24		ACETONITRILE	0.050	0.046	8.0	108	0.00	7.30
25		METHYL ACETATE		----------NA----------				
26	M	METHYLENE CHLORIDE		----------NA----------				
27	M	ACRYLONITRILE		----------NA----------				
28	M	METHYL TERT BUTYL ETHER		----------NA----------				
29	M	trans-1,2-DICHLOROETHYLEN		----------NA----------				
30	M	HEXANE		----------NA----------				
31	M	1,1-DICHLOROETHANE		----------NA----------				
32	M	VINYL ACETATE		----------NA----------				
33	M	DI-ISOPROPYL ETHER		----------NA----------				
34	M	ETHYL TERT BUTYL ETHER		----------NA----------				
35	M	2-BUTANONE		----------NA----------				
36	M	cis-1,2-DICHLOROETHYLENE		----------NA----------				
37	M	2,2-DICHLOROPROPANE		----------NA----------				
38	M	ETHYL ACETATE		----------NA----------				
39		BROMOCHLOROMETHANE		----------NA----------				
40	M	TETRAHYDROFURAN		----------NA----------				
41	M	CHLOROFORM		----------NA----------				

Initial Calibration Verification

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9291-ICV9291
Lab FileID: T226303.D

42		t-BUTYL FORMATE		----------NA----------					
43	M	1,1,1-TRICHLOROETHANE		----------NA----------					
44		CYCLOHEXANE		----------NA----------					
45	S	DIBROMOFLUOROMETHANE (SUR	0.472	0.479	-1.5	115	0.00	9.52	
46		1,1-DICHLOROPROPENE		----------NA----------					
47		CARBON TETRACHLORIDE		----------NA----------					
48		ISOPROPYL ACETATE		----------NA----------					
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	115	0.00	10.33	
50	S	1,2-DICHLOROETHANE-d4	0.353	0.357	-1.1	116	0.00	9.93	
51	M	BENZENE		----------NA----------					
52	M	1,2-DICHLOROETHANE		----------NA----------					
53		2,2,4-TRIMETHYLPENTANE		----------NA----------					
54	M	TERT-AMYL METHYL ETHER		----------NA----------					
55	M	HEPTANE		----------NA----------					
56	M	TRICHLOROETHYLENE		----------NA----------					
57	M	1,2-DICHLOROPROPANE		----------NA----------					
58	M	DIBROMOMETHANE		----------NA----------					
59		METHYL METHACRYLATE		----------NA----------					
60		METHYLCYCLOHEXANE		----------NA----------					
61	M	BROMODICHLOROMETHANE		----------NA----------					
62	M	2-CHLOROETHYL VINYL ETHER		----------NA----------					
63	M	EPICHLOROHYDRIN		----------NA----------					
64	M	cis-1,3-DICHLOROPROPENE		----------NA----------					
65	M	4-METHYL-2-PENTANONE		----------NA----------					
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	114	0.00	13.54	
67	S	TOLUENE-d8	1.276	1.279	-0.2	115	0.00	11.96	
68		TOLUENE		----------NA----------					
69		ETHYL METHACRYLATE		----------NA----------					
70		trans-1,3-DICHLOROPROPENE		----------NA----------					
71		1,1,2-TRICHLOROETHANE		----------NA----------					
72	M	TETRACHLOROETHYLENE		----------NA----------					
73	M	2-HEXANONE		----------NA----------					
74		1,3-DICHLOROPROPANE		----------NA----------					
75	M	BUTYL ACETATE		----------NA----------					
76		3,3-DIMETHYL-1-BUTANOL		----------NA----------					
77	M	DIBROMOCHLOROMETHANE		----------NA----------					
78	M	ETHYLENE DIBROMIDE		----------NA----------					
79	M	CHLOROBENZENE		----------NA----------					
80	M	1,1,1,2-TETRACHLOROETHANE		----------NA----------					
81	M	ETHYLBENZENE		----------NA----------					
82	M	m,p-XYLENE		----------NA----------					
83	M	o-XYLENE		----------NA----------					
84	M	STYRENE		----------NA----------					
85		n-AMYL ACETATE		----------NA----------					
86	M	BROMOFORM		----------NA----------					
87	M	CUMENE		----------NA----------					
88		cis-1,4-DICHLORO-2-BUTENE		----------NA----------					
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	111	0.00	16.08	
90	S	4-BROMOFLUOROBENZENE	0.736	0.744	-1.1	112	0.00	14.79	
91		1,1,2,2-TETRACHLOROETHANE		----------NA----------					
92		trans-1,4-DICHLORO-2-BUTE		----------NA----------					
93		1,2,3-TRICHLOROPROPANE		----------NA----------					
94		N-PROPYLBENZENE		----------NA----------					
95		BROMOBENZENE		----------NA----------					
96		2-CHLOROTOLUENE		----------NA----------					
97		4-CHLOROTOLUENE		----------NA----------					
98	M	1,3,5-TRIMETHYLBENZENE		----------NA----------					

Initial Calibration Verification

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9291-ICV9291
Lab FileID: T226303.D

99		TERT-BUTYLBENZENE	----------NA----------	
100	M	1,2,4-TRIMETHYLBENZENE	----------NA----------	
101		SEC-BUTYLBENZENE	----------NA----------	
102		P-ISOPROPYLTOLUENE	----------NA----------	
103	M	1,3-DICHLOROBENZENE	----------NA----------	
104	M	1,4-DICHLOROBENZENE	----------NA----------	
105		N-BUTYLBENZENE	----------NA----------	
106	M	1,2-DICHLOROBENZENE	----------NA----------	
107		HEXACHLOROETHANE	----------NA----------	
108	M	1,2-DIBROMO-3-CHLOROPROPA	----------NA----------	
109		HEXACHLOROBUTADIENE	----------NA----------	
110		1,3,5-TRICHLOROBENZENE	----------NA----------	
111		NITROBENZENE	----------NA----------	
112	M	1,2,4-TRICHLOROBENZENE	----------NA----------	
113		1,2,3-TRICHLOROBENZENE	----------NA----------	
114	M	NAPHTHALENE	----------NA----------	
115	M	INDANE	----------NA----------	
116		ETHYLENIMINE	----------NA----------	
117		BIS(CHLOROMETHYL)ETHER	----------NA----------	

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T226296.D MT9291.M Fri Sep 08 12:21:01 2017 MSDT

Continuing Calibration Summary

Job Number: JC50259 **Sample:** VT9293-CC9291
Account: UTC United Technologies Corporation **Lab FileID:** T226321.D
Project: SECORINI: Zanesville OH, Monthly

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T226321.D Vial: 2
Acq On : 8 Sep 2017 9:29 am Operator: payalr
Sample : cc9291-20 Inst : GCMST
Misc : MS19096,VT9293,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9291.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Sep 08 12:16:04 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	168	0.00	7.44
2	M	TERTIARY BUTYL ALCOHOL	1.218	1.182	3.0	170	0.00	7.55
3	M	1,4-DIOXANE	0.101	0.098	3.0	170	0.00	11.02
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	156	0.00	9.47
5		CHLORODIFLUOROMETHANE	0.924	1.087	-17.6	193	0.00	4.38
6	M	DICHLORODIFLUOROMETHANE	1.154	1.135	1.6	148	0.00	4.37
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE	0.808	0.881	-9.0	166	0.00	4.71
10	M	VINYL CHLORIDE	0.898	0.930	-3.6	163	0.00	4.95
11	M	BROMOMETHANE	0.572	0.569	0.5	164	0.00	5.58
12	M	CHLOROETHANE	0.461	0.463	-0.4	169	0.00	5.74
13		VINYL BROMIDE	0.783	0.825	-5.4	164	0.00	6.06
14	M	TRICHLOROFLUOROMETHANE	0.885	0.942	-6.4	156	0.01	6.16
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER	0.224	0.229	-2.2	171	0.00	6.53
18	M	1,1-DICHLOROETHYLENE	0.650	0.702	-8.0	169	0.00	6.91
19	M	FREON 113	0.437	0.469	-7.3	168	0.00	6.89
20		ACROLEIN	0.067	0.065	3.0	148	0.00	6.73
21	M	ACETONE	0.032	0.030	6.3	172	0.00	6.92
22	M	CARBON DISULFIDE	1.415	1.645	-16.3	182	0.00	7.29
23	M	IODOMETHANE	0.777	0.852	-9.7	168	0.00	7.16
24		ACETONITRILE	0.050	0.054	-8.0	178	0.00	7.30
25		METHYL ACETATE	0.282	0.318	-12.8	167	0.00	7.33
26	M	METHYLENE CHLORIDE	0.449	0.474	-5.6	171	0.00	7.52
27	M	ACRYLONITRILE	0.135	0.140	-3.7	169	0.00	7.80
28	M	METHYL TERT BUTYL ETHER	1.472	1.534	-4.2	173	0.00	7.83
29	M	trans-1,2-DICHLOROETHYLEN	0.620	0.694	-11.9	180	0.00	7.87
30	M	HEXANE	0.632	0.639	-1.1	174	0.00	8.15
31	M	1,1-DICHLOROETHANE	0.772	0.854	-10.6	176	0.00	8.37
32	M	VINYL ACETATE	0.070	0.070	0.0	164	0.00	8.34
33	M	DI-ISOPROPYL ETHER	1.664	1.773	-6.6	174	0.00	8.36
34	M	ETHYL TERT BUTYL ETHER	1.537	1.657	-7.8	170	0.00	8.77
35	M	2-BUTANONE	0.039	0.039	0.0	170	0.00	8.98
36	M	cis-1,2-DICHLOROETHYLENE	0.518	0.531	-2.5	169	0.00	9.02
37	M	2,2-DICHLOROPROPANE	0.853	0.929	-8.9	175	0.00	9.05
38	M	ETHYL ACETATE	0.057	0.058	-1.8	165	0.00	8.98
39		BROMOCHLOROMETHANE	0.239	0.244	-2.1	162	0.00	9.30
40	M	TETRAHYDROFURAN	0.131	0.131	0.0	161	0.00	9.35
41	M	CHLOROFORM	0.813	0.859	-5.7	172	0.00	9.34

Continuing Calibration Summary

Job Number: JC50259 **Sample:** VT9293-CC9291
Account: UTC United Technologies Corporation **Lab FileID:** T226321.D
Project: SECORINI: Zanesville OH, Monthly

42		t-BUTYL FORMATE	0.189	0.148	21.7	125	0.00	9.41
43	M	1,1,1-TRICHLOROETHANE	0.879	0.924	-5.1	168	0.00	9.62
44		CYCLOHEXANE	0.744	0.750	-0.8	166	0.00	9.70
45	S	DIBROMOFLUOROMETHANE (SUR	0.472	0.486	-3.0	162	0.00	9.53
46		1,1-DICHLOROPROPENE	0.603	0.636	-5.5	168	0.00	9.77
47		CARBON TETRACHLORIDE	0.784	0.834	-6.4	167	0.00	9.80
48		ISOPROPYL ACETATE	0.082	0.082	0.0	169	0.00	9.90
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	161	0.00	10.34
50	S	1,2-DICHLOROETHANE-d4	0.353	0.358	-1.4	162	0.00	9.92
51	M	BENZENE	1.214	1.276	-5.1	169	0.00	10.02
52	M	1,2-DICHLOROETHANE	0.402	0.418	-4.0	170	0.00	10.01
53		2,2,4-TRIMETHYLPENTANE	1.183	1.244	-5.2	175	0.00	10.03
54	M	TERT-AMYL METHYL ETHER	1.037	1.085	-4.6	166	0.00	10.04
55	M	HEPTANE	0.247	0.249	-0.8	170	0.00	10.17
56	M	TRICHLOROETHYLENE	0.325	0.315	3.1	163	0.00	10.67
57	M	1,2-DICHLOROPROPANE	0.320	0.337	-5.3	171	0.00	10.93
58	M	DIBROMOMETHANE	0.184	0.185	-0.5	165	0.00	11.06
59		METHYL METHACRYLATE	0.067	0.068	-1.5	162	0.00	10.90
60		METHYLCYCLOHEXANE	0.661	0.671	-1.5	163	0.00	10.92
61	M	BROMODICHLOROMETHANE	0.426	0.429	-0.7	166	0.00	11.18
62	M	2-CHLOROETHYL VINYL ETHER	0.119	0.121	-1.7	163	0.00	11.41
63	M	EPICHLOROHYDRIN	0.028	0.024	14.3	168	0.00	11.53
64	M	cis-1,3-DICHLOROPROPENE	0.479	0.499	-4.2	168	0.00	11.64
65	M	4-METHYL-2-PENTANONE	0.107	0.108	-0.9	169	0.00	11.74
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	161	0.00	13.54
67	S	TOLUENE-d8	1.276	1.272	0.3	161	0.00	11.96
68		TOLUENE	0.780	0.814	-4.4	171	0.00	12.03
69		ETHYL METHACRYLATE	0.395	0.376	4.8	160	0.00	12.20
70		trans-1,3-DICHLOROPROPENE	0.472	0.482	-2.1	172	0.00	12.20
71		1,1,2-TRICHLOROETHANE	0.231	0.221	4.3	160	0.00	12.43
72	M	TETRACHLOROETHYLENE	0.293	0.296	-1.0	164	0.00	12.64
73	M	2-HEXANONE	0.098	0.098	0.0	160	0.00	12.61
74		1,3-DICHLOROPROPANE	0.432	0.440	-1.9	165	0.00	12.62
75	M	BUTYL ACETATE	0.191	0.181	5.2	159	0.00	12.68
76		3,3-DIMETHYL-1-BUTANOL	0.036	0.035	2.8	168	0.00	12.77
77	M	DIBROMOCHLOROMETHANE	0.332	0.344	-3.6	167	0.00	12.90
78	M	ETHYLENE DIBROMIDE	0.278	0.277	0.4	162	0.00	13.07
79	M	CHLOROBENZENE	0.894	0.931	-4.1	166	0.00	13.57
80	M	1,1,1,2-TETRACHLOROETHANE	0.412	0.427	-3.6	164	0.00	13.63
81	M	ETHYLBENZENE	1.608	1.625	-1.1	167	0.00	13.64
82	M	m,p-XYLENE	0.582	0.622	-6.9	168	0.00	13.75
83	M	o-XYLENE	1.404	1.434	-2.1	163	0.00	14.21
84	M	STYRENE	1.034	1.054	-1.9	160	0.00	14.21
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.232	0.251	-8.2	170	0.00	14.48
87	M	CUMENE	1.788	1.869	-4.5	163	0.00	14.58
88		cis-1,4-DICHLORO-2-BUTENE	0.143	0.147	-2.8	167	0.00	14.63
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	161	0.00	16.08
90	S	4-BROMOFLUOROBENZENE	0.736	0.736	0.0	160	0.00	14.80
91		1,1,2,2-TETRACHLOROETHANE	0.624	0.624	0.0	165	0.00	14.88
92		trans-1,4-DICHLORO-2-BUTE	0.171	0.172	-0.6	162	0.00	14.93
93		1,2,3-TRICHLOROPROPANE	0.167	0.161	3.6	170	0.00	14.97
94		N-PROPYLBENZENE	3.241	3.420	-5.5	165	0.00	15.03
95		BROMOBENZENE	0.723	0.714	1.2	160	0.00	15.02
96		2-CHLOROTOLUENE	0.720	0.720	0.0	165	0.00	15.19
97		4-CHLOROTOLUENE	1.937	1.981	-2.3	166	0.00	15.30
98	M	1,3,5-TRIMETHYLBENZENE	2.571	2.627	-2.2	164	0.00	15.19

Continuing Calibration Summary

Job Number: JC50259
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9293-CC9291
Lab FileID: T226321.D

99		TERT-BUTYLBENZENE	2.257	2.307	-2.2	166	0.00	15.59
100	M	1,2,4-TRIMETHYLBENZENE	2.625	2.713	-3.4	163	0.00	15.63
101		SEC-BUTYLBENZENE	3.451	3.625	-5.0	165	0.00	15.83
102		P-ISOPROPYLTOLUENE	2.926	3.015	-3.0	163	0.00	15.95
103	M	1,3-DICHLOROBENZENE	1.470	1.472	-0.1	161	0.00	16.02
104	M	1,4-DICHLOROBENZENE	1.539	1.524	1.0	163	0.00	16.11
105		N-BUTYLBENZENE	0.816	0.785	3.8	164	0.00	16.41
106	M	1,2-DICHLOROBENZENE	1.552	1.549	0.2	160	0.00	16.54
107		HEXACHLOROETHANE	0.346	0.348	-0.6	168	0.00	16.84
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.177	0.168	5.1	159	-0.01	17.37
109		HEXACHLOROBUTADIENE	0.820	0.807	1.6	167	0.00	18.42
110		1,3,5-TRICHLOROBENZENE	1.672	1.680	-0.5	161	0.00	17.59
111		NITROBENZENE	0.043	0.058	-34.9	220#	0.00	17.60
112	M	1,2,4-TRICHLOROBENZENE	1.523	1.514	0.6	158	0.00	18.28
113		1,2,3-TRICHLOROBENZENE	1.366	1.340	1.9	158	0.00	18.87
114	M	NAPHTHALENE	2.709	2.674	1.3	157	0.00	18.60
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T226296.D MT9291.M Tue Sep 12 09:27:49 2017 MSDT

6.8.4

6

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226334.d
Acq On : 8 Sep 2017 5:35 pm
Operator : payalr
Sample : jc50259-1
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 11 13:59:29 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

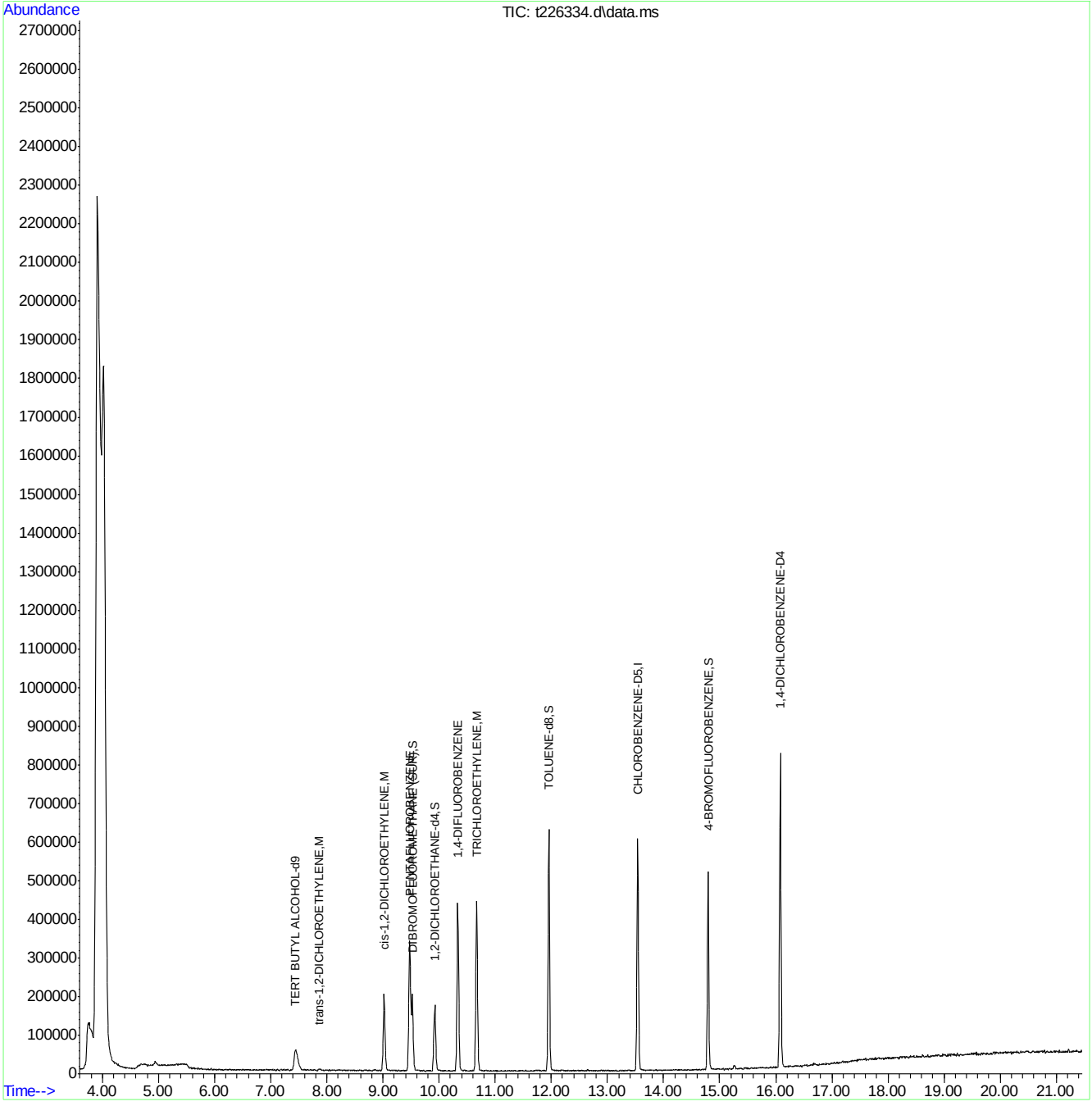
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.436	65	135067	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.475	168	266997	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.332	114	395798	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.537	117	366087	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.083	152	234557	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.527	113	130355	31.01	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 103.37%			
50) 1,2-DICHLOROETHANE-d4	9.925	65	143212	30.73	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 102.43%			
67) TOLUENE-d8	11.953	98	451435	28.99	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 96.63%			
90) 4-BROMOFLUOROBENZENE	14.797	174	169140	29.40	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.00%			
Target Compounds						Qvalue
29) trans-1,2-DICHLOROETHY...	7.865	61	1685	0.31	PPb	80
36) cis-1,2-DICHLOROETHYLENE	9.020	96	102586	22.26	PPb	91
56) TRICHLOROETHYLENE	10.672	95	157351	36.72	PPb	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

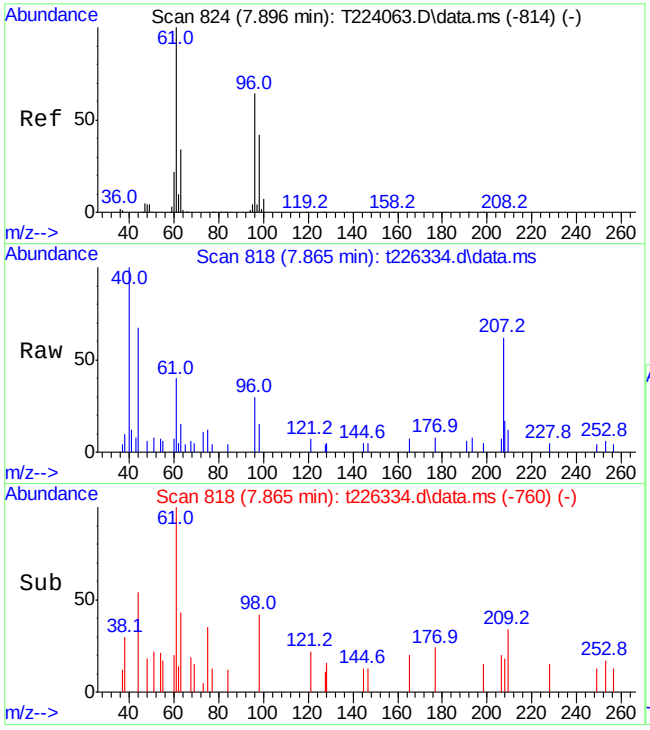
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226334.d
Acq On : 8 Sep 2017 5:35 pm
Operator : payalr
Sample : jc50259-1
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 11 13:59:29 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration



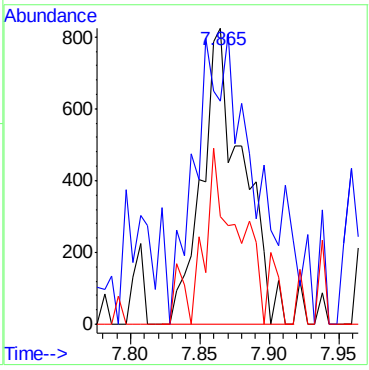
MT9291.M Mon Sep 11 14:07:35 2017 Page: 2

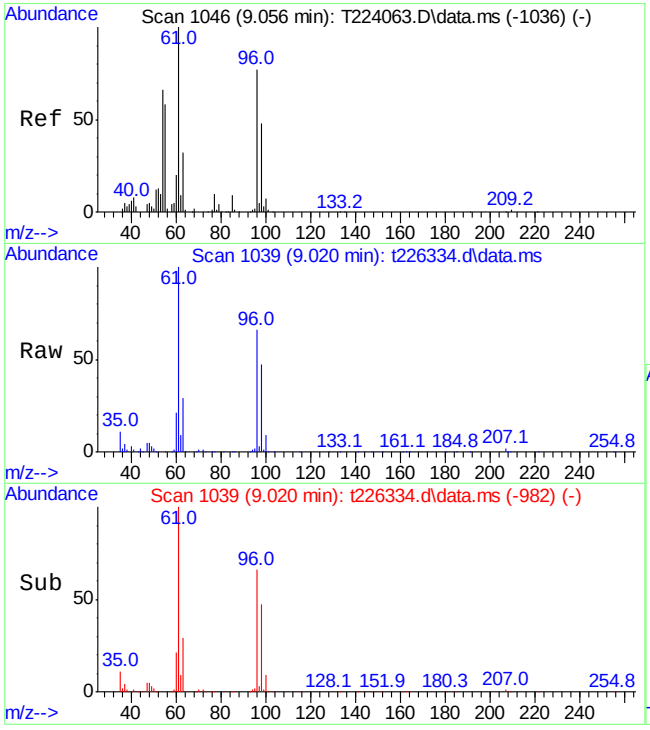


#29
trans-1,2-DICHLOROETHYLENE
Concen: 0.31 PPb
RT: 7.865 min Scan# 818
Delta R.T. 0.001 min
Lab File: t226334.d
Acq: 8 Sep 2017 5:35 pm

Tgt Ion: 61 Resp: 1685

Ion	Ratio	Lower	Upper
61	100		
96	46.8	36.3	96.3
98	36.3	14.8	74.8

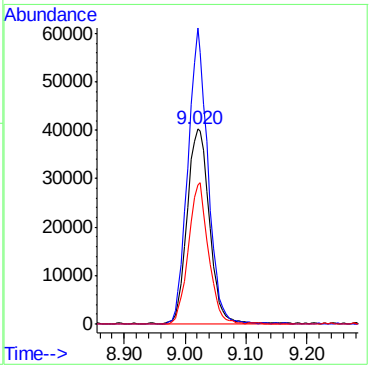


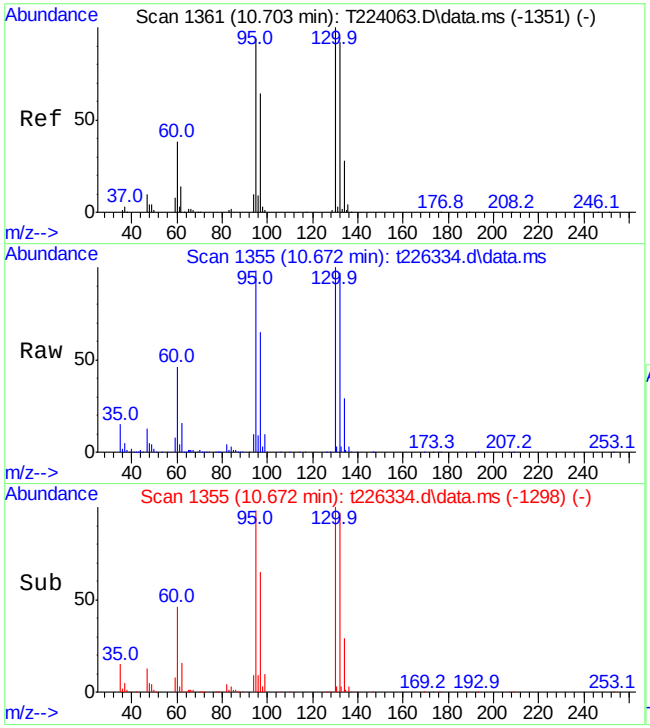


#36
cis-1,2-DICHLOROETHYLENE
Concen: 22.26 PPb
RT: 9.020 min Scan# 1039
Delta R.T. 0.000 min
Lab File: t226334.d
Acq: 8 Sep 2017 5:35 pm

Tgt Ion: 96 Resp: 102586

Ion	Ratio	Lower	Upper
96	100		
61	151.8	111.7	171.7
98	71.1	32.1	92.1

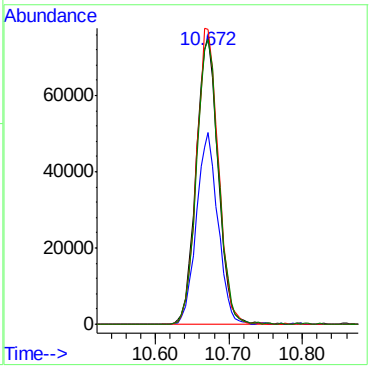




#56
TRICHLOROETHYLENE
Concen: 36.72 PPb
RT: 10.672 min Scan# 1355
Delta R.T. 0.000 min
Lab File: t226334.d
Acq: 8 Sep 2017 5:35 pm

Tgt Ion: 95 Resp: 157351

Ion	Ratio	Lower	Upper
95	100		
97	66.6	35.0	95.0
130	102.2	73.5	133.5
132	98.9	66.7	126.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226335.d
Acq On : 8 Sep 2017 6:06 pm
Operator : payalr
Sample : jc50259-2
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 11 14:00:07 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

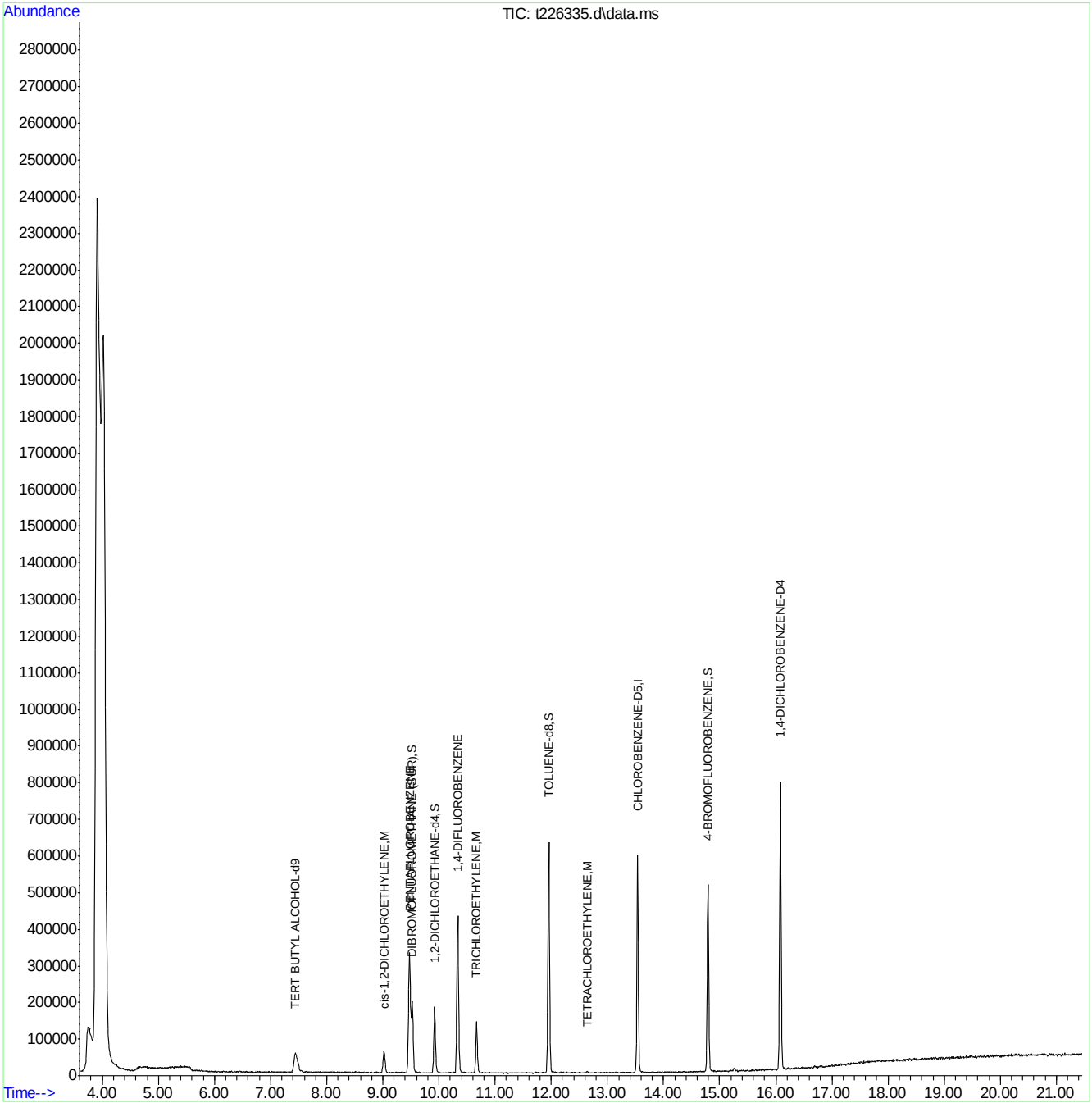
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) TERT BUTYL ALCOHOL-d9	7.439	65	138875	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.478	168	266760	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.335	114	392265	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.540	117	364037	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.081	152	229485	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.520	113	133042	31.68	PPb		0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 105.60%				
50) 1,2-DICHLOROETHANE-d4	9.922	65	144141	31.21	PPB		0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 104.03%				
67) TOLUENE-d8	11.956	98	456825	29.51	PPB		0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 98.37%				
90) 4-BROMOFLUOROBENZENE	14.795	174	166175	29.52	PPB		0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.40%				
Target Compounds							Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.023	96	32245	7.00	PPb		94
56) TRICHLOROETHYLENE	10.670	95	49555	11.67	PPb		96
72) TETRACHLOROETHYLENE	12.641	164	960	0.27	PPb	#	66

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226335.d
Acq On : 8 Sep 2017 6:06 pm
Operator : payalr
Sample : jc50259-2
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 11 14:00:07 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration



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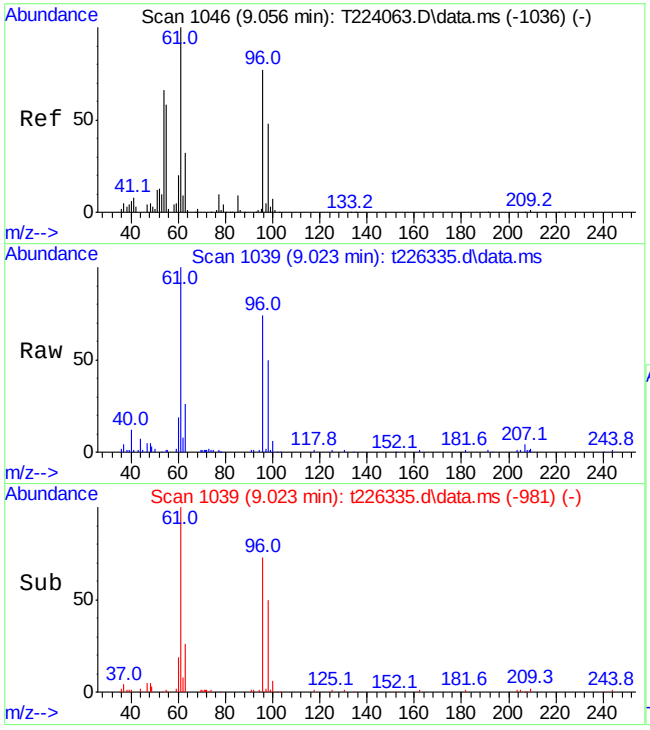
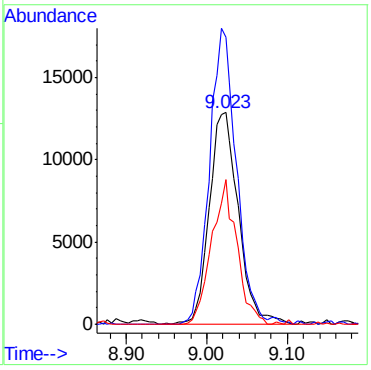
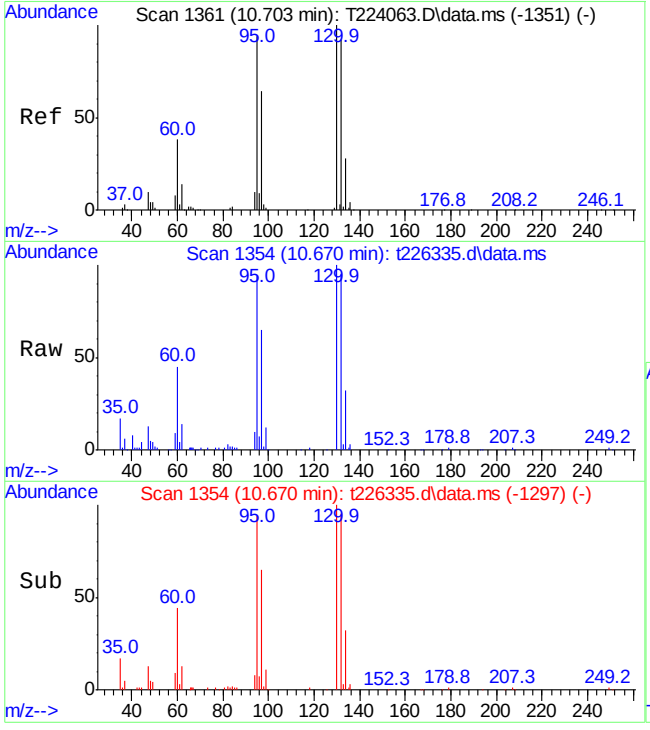


#36
cis-1,2-DICHLOROETHYLENE
Concen: 7.00 PPb
RT: 9.023 min Scan# 1039
Delta R.T. 0.003 min
Lab File: t226335.d
Acq: 8 Sep 2017 6:06 pm

Tgt Ion: 96 Resp: 32245

Ion	Ratio	Lower	Upper
96	100		
61	135.3	111.7	171.7
98	68.2	32.1	92.1

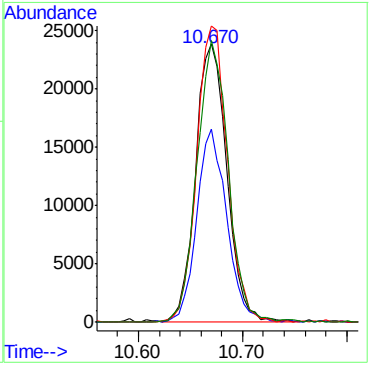


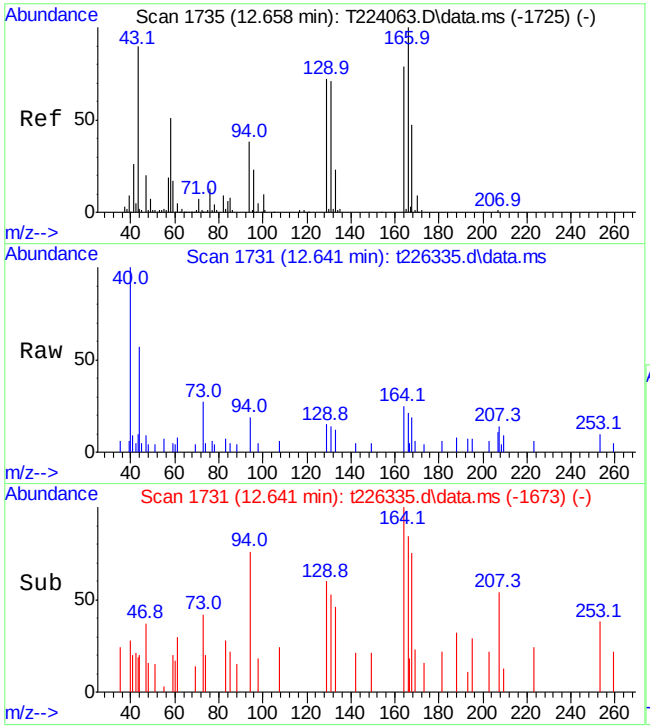


#56
TRICHLOROETHYLENE
Concen: 11.67 PPb
RT: 10.670 min Scan# 1354
Delta R.T. -0.002 min
Lab File: t226335.d
Acq: 8 Sep 2017 6:06 pm

Tgt Ion: 95 Resp: 49555

Ion	Ratio	Lower	Upper
95	100		
97	69.2	35.0	95.0
130	106.4	73.5	133.5
132	100.7	66.7	126.7

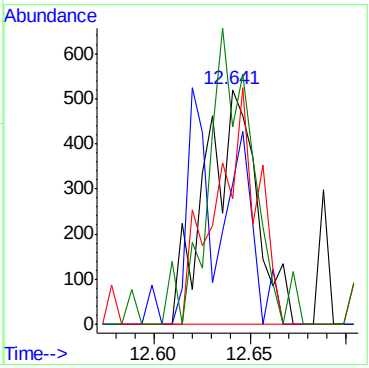




#72
TETRACHLOROETHYLENE
Concen: 0.27 PPb
RT: 12.641 min Scan# 1731
Delta R.T. 0.004 min
Lab File: t226335.d
Acq: 8 Sep 2017 6:06 pm

Tgt Ion:164 Resp: 960

Ion	Ratio	Lower	Upper
164	100		
129	59.6	64.5	124.5#
131	53.5	52.5	112.5
166	84.2	91.2	151.2#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226336.d
Acq On : 8 Sep 2017 6:36 pm
Operator : payalr
Sample : jc50259-3
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 11 14:00:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

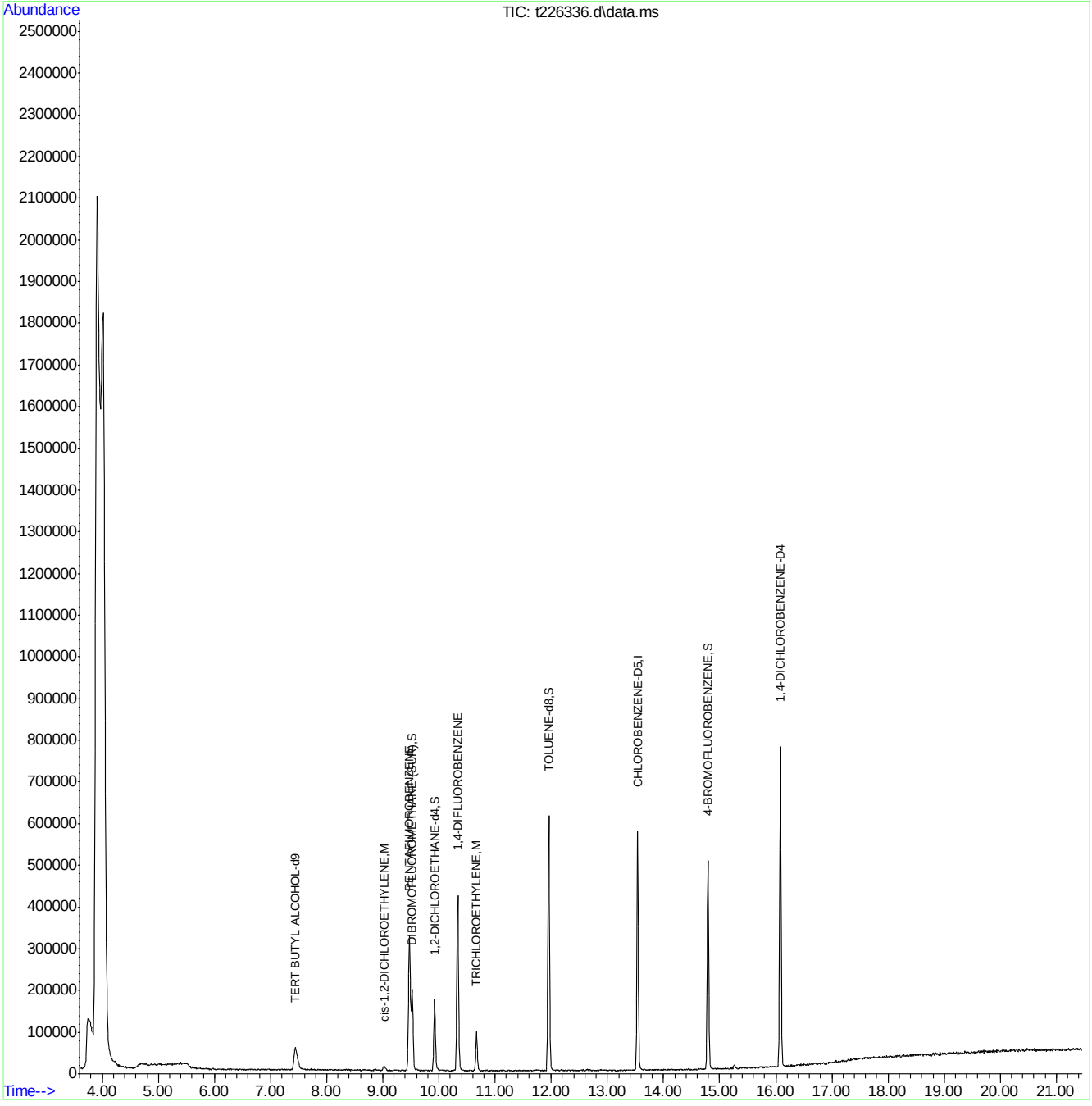
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.439	65	131649	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.473	168	260484	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.335	114	384040	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.540	117	357432	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.081	152	222190	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.520	113	127273	31.03	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 103.43%			
50) 1,2-DICHLOROETHANE-d4	9.922	65	138672	30.67	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 102.23%			
67) TOLUENE-d8	11.956	98	447308	29.43	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 98.10%			
90) 4-BROMOFLUOROBENZENE	14.795	174	162677	29.85	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 99.50%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.023	96	6117	1.36	PPb	87
56) TRICHLOROETHYLENE	10.670	95	33223	7.99	PPb	96

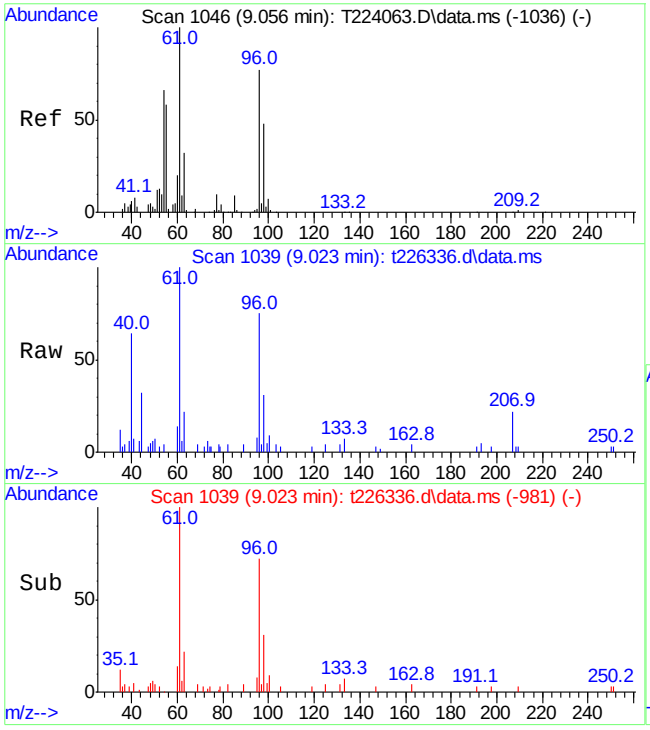
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226336.d
Acq On : 8 Sep 2017 6:36 pm
Operator : payalr
Sample : jc50259-3
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 11 14:00:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

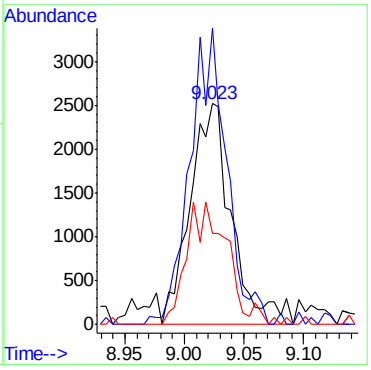


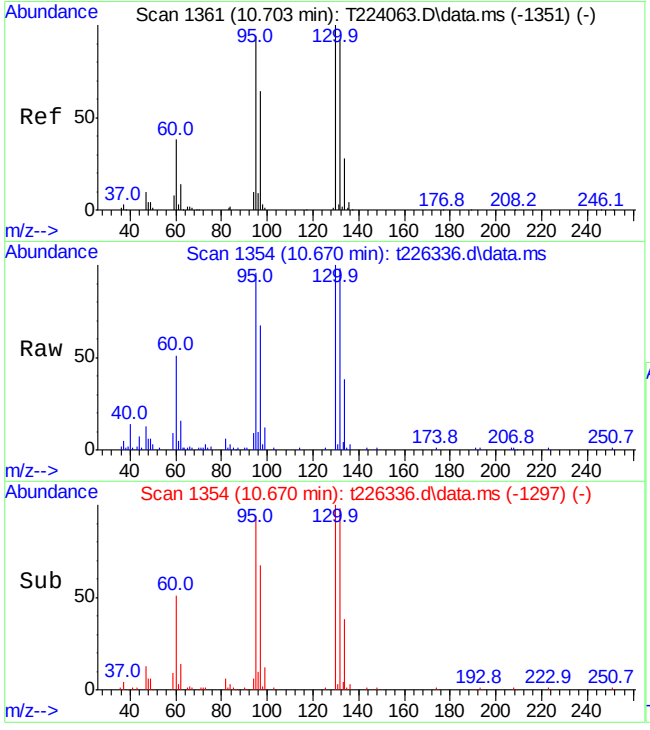


#36
cis-1,2-DICHLOROETHYLENE
Concen: 1.36 PPb
RT: 9.023 min Scan# 1039
Delta R.T. 0.003 min
Lab File: t226336.d
Acq: 8 Sep 2017 6:36 pm

Tgt Ion: 96 Resp: 6117

Ion	Ratio	Lower	Upper
96	100		
61	134.0	111.7	171.7
98	41.1	32.1	92.1

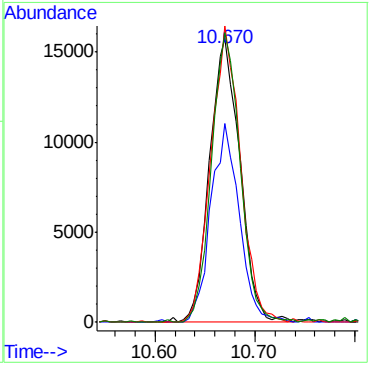




#56
TRICHLOROETHYLENE
Concen: 7.99 PPb
RT: 10.670 min Scan# 1354
Delta R.T. -0.002 min
Lab File: t226336.d
Acq: 8 Sep 2017 6:36 pm

Tgt Ion: 95 Resp: 33223

Ion	Ratio	Lower	Upper
95	100		
97	70.0	35.0	95.0
130	104.5	73.5	133.5
132	102.1	66.7	126.7



SGS ACCUTEST JC50259

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226337.d
Acq On : 8 Sep 2017 7:06 pm
Operator : payalr
Sample : jc50259-4
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 11 14:01:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

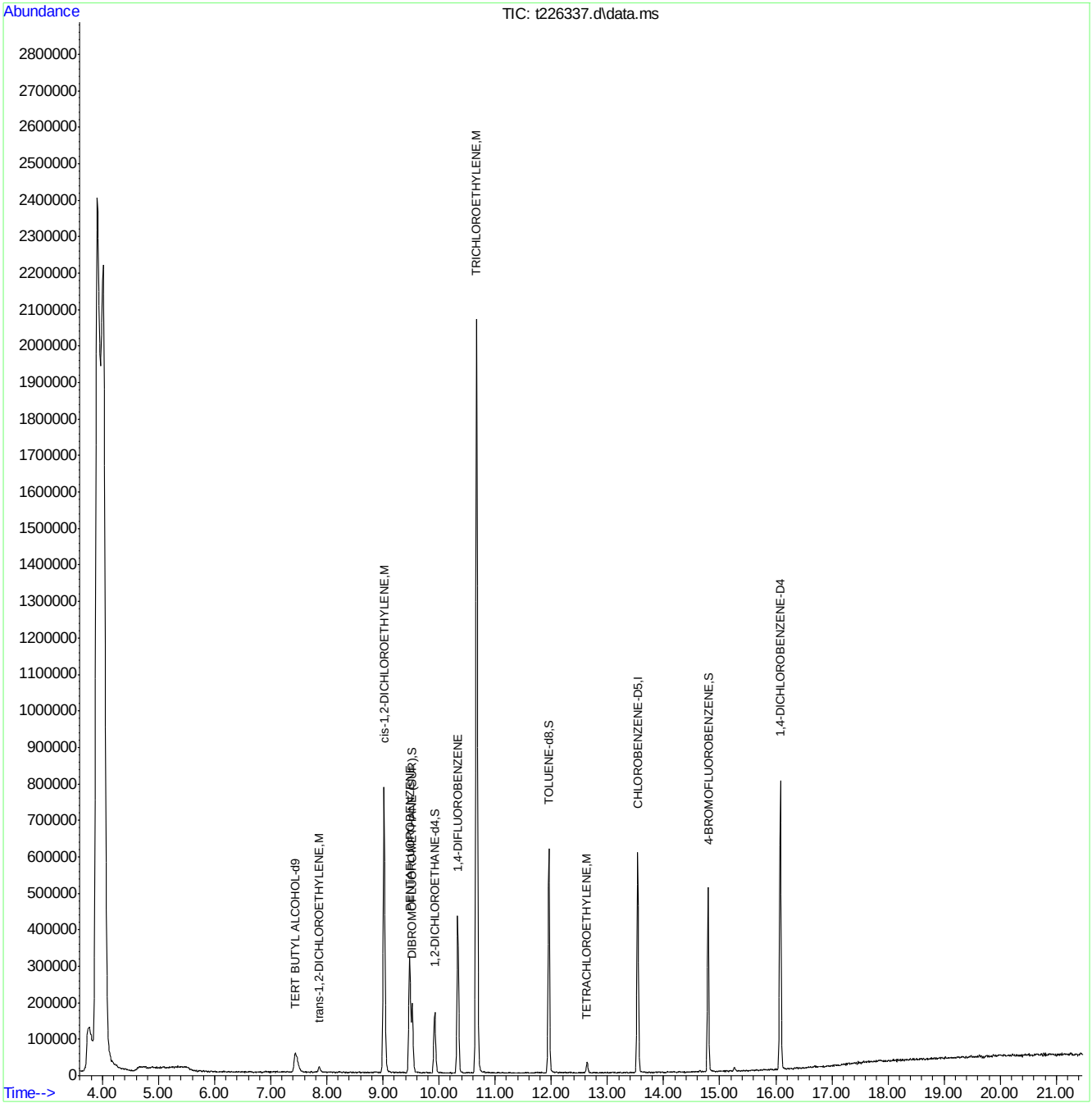
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.441	65	131646	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.474	168	260693	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.332	114	386030	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.536	117	363840	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.083	152	232846	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.521	113	129877	31.64	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 105.47%			
50) 1,2-DICHLOROETHANE-d4	9.924	65	139862	30.77	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 102.57%			
67) TOLUENE-d8	11.958	98	452629	29.25	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 97.50%			
90) 4-BROMOFLUOROBENZENE	14.796	174	164287	28.77	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 95.90%			
Target Compounds						Qvalue
29) trans-1,2-DICHLOROETHY...	7.864	61	10617	1.97	PPb	87
36) cis-1,2-DICHLOROETHYLENE	9.020	96	416877	92.64	PPb	94
56) TRICHLOROETHYLENE	10.666	95	765722	183.21	PPb	99
72) TETRACHLOROETHYLENE	12.632	164	7975	2.25	PPb	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

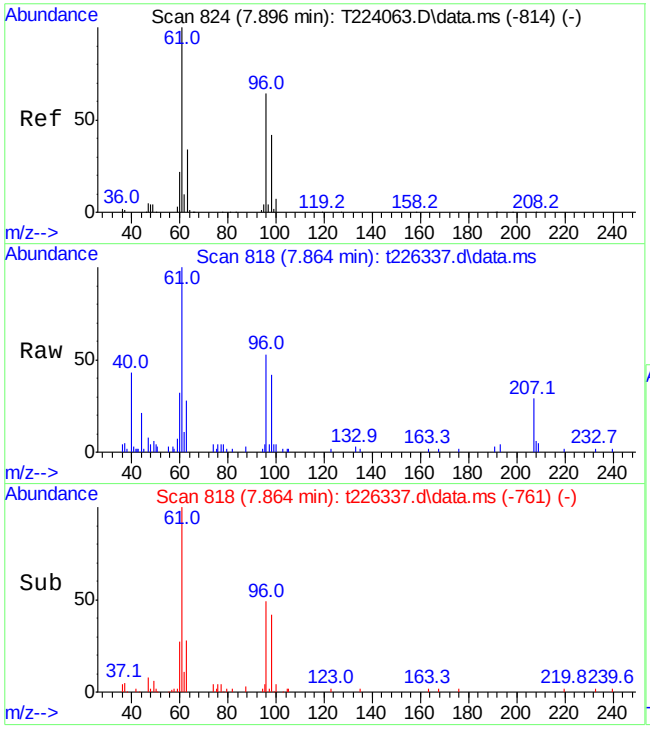
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226337.d
Acq On : 8 Sep 2017 7:06 pm
Operator : payalr
Sample : jc50259-4
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 11 14:01:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration



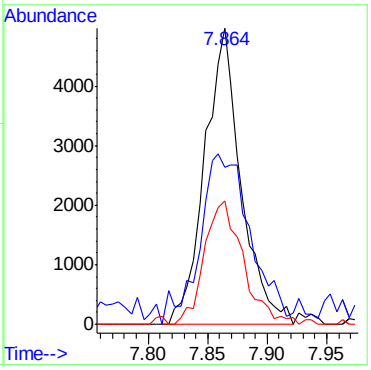
SGS ACCUTEST JC50259

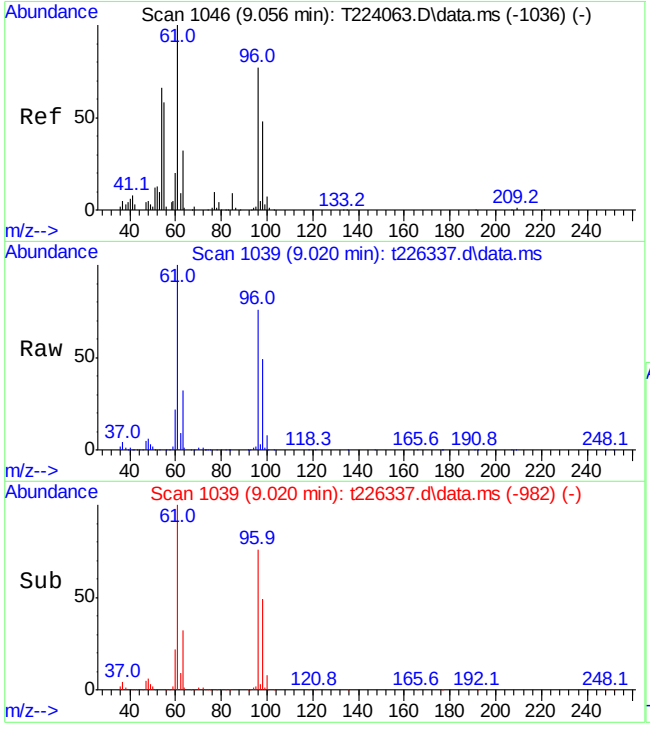


#29
trans-1,2-DICHLOROETHYLENE
Concen: 1.97 PPb
RT: 7.864 min Scan# 818
Delta R.T. 0.000 min
Lab File: t226337.d
Acq: 8 Sep 2017 7:06 pm

Tgt Ion: 61 Resp: 10617

Ion	Ratio	Lower	Upper
61	100		
96	53.0	36.3	96.3
98	39.5	14.8	74.8

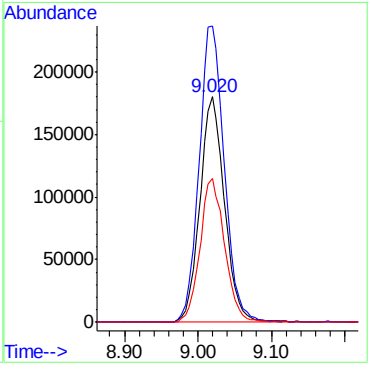




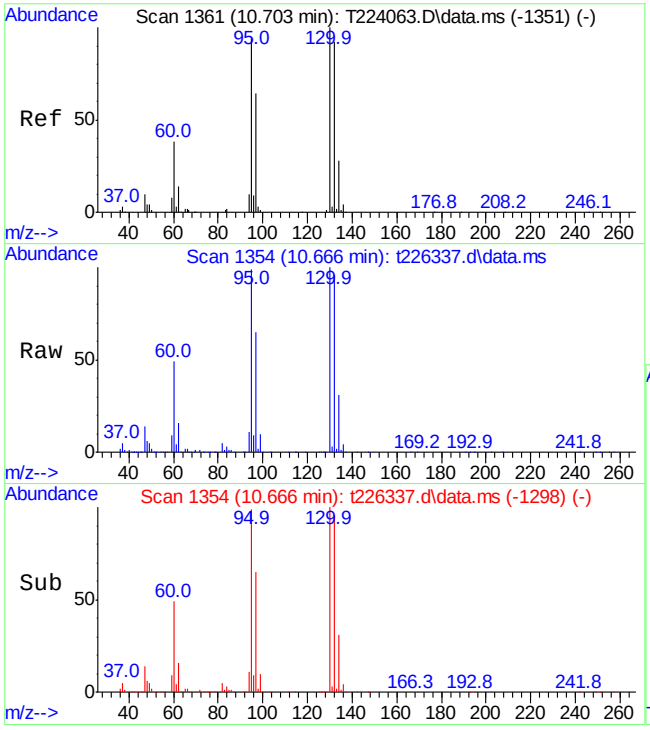
#36
cis-1,2-DICHLOROETHYLENE
Concen: 92.64 PPb
RT: 9.020 min Scan# 1039
Delta R.T. -0.000 min
Lab File: t226337.d
Acq: 8 Sep 2017 7:06 pm

Tgt Ion: 96 Resp: 416877

Ion	Ratio	Lower	Upper
96	100		
61	131.6	111.7	171.7
98	64.0	32.1	92.1



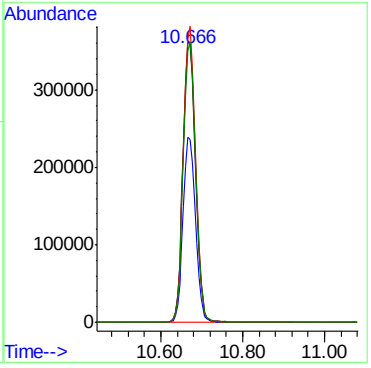
SGS ACCUTEST JC50259

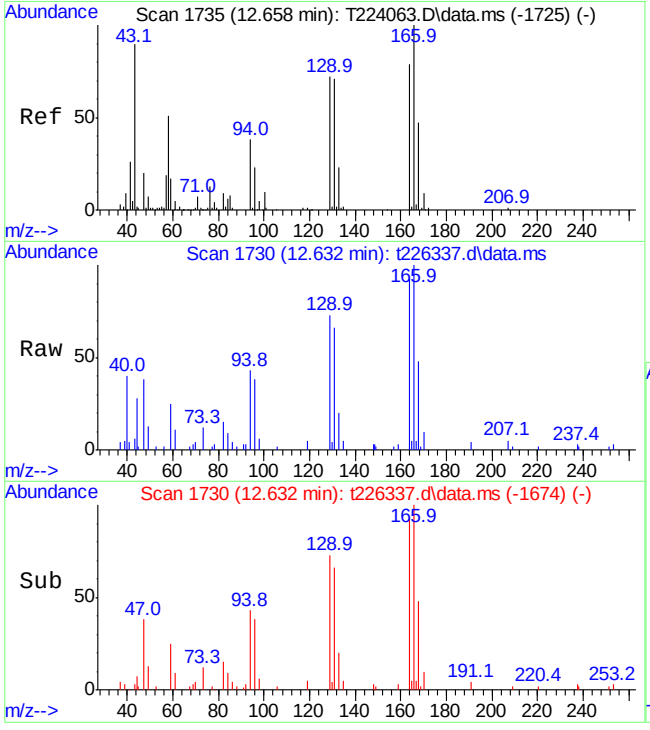


#56
TRICHLOROETHYLENE
Concen: 183.21 PPb
RT: 10.666 min Scan# 1354
Delta R.T. -0.006 min
Lab File: t226337.d
Acq: 8 Sep 2017 7:06 pm

Tgt Ion: 95 Resp: 765722

Ion	Ratio	Lower	Upper
95	100		
97	65.8	35.0	95.0
130	101.3	73.5	133.5
132	96.8	66.7	126.7

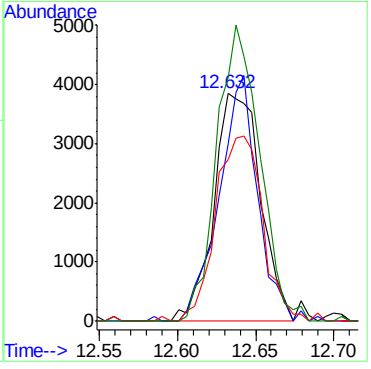




#72
TETRACHLOROETHYLENE
Concen: 2.25 PPb
RT: 12.632 min Scan# 1730
Delta R.T. -0.005 min
Lab File: t226337.d
Acq: 8 Sep 2017 7:06 pm

Tgt Ion:164 Resp: 7975

Ion	Ratio	Lower	Upper
164	100		
129	77.7	64.5	124.5
131	68.8	52.5	112.5
166	107.0	91.2	151.2



SGS ACCUTEST JC50259

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226338.d
Acq On : 8 Sep 2017 7:36 pm
Operator : payalr
Sample : jc50259-5
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 11 14:02:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

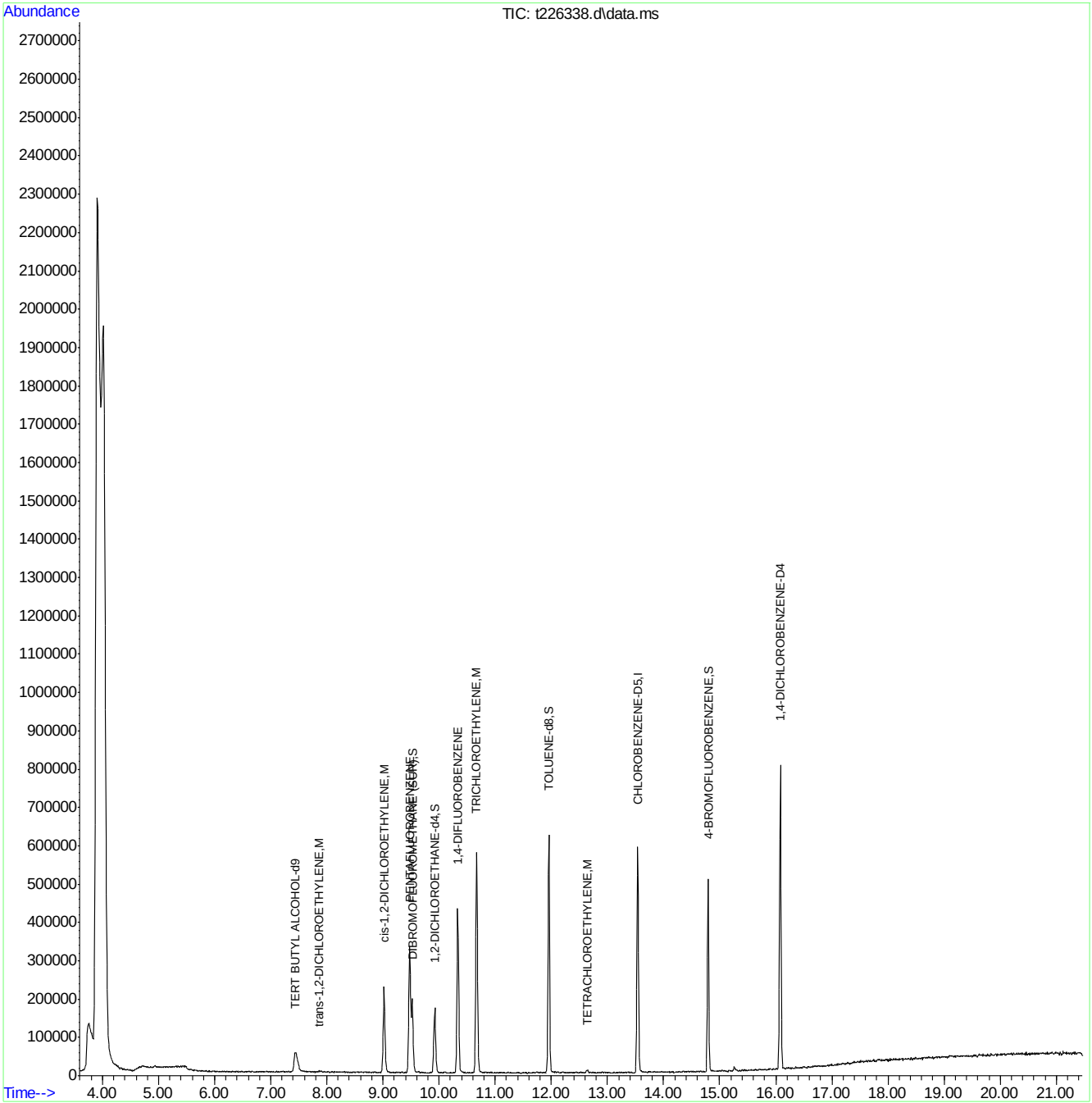
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) TERT BUTYL ALCOHOL-d9	7.441	65	131377	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.474	168	265256	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.332	114	386948	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.542	117	366879	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.082	152	228444	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.526	113	129907	31.11	PPb		0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 103.70%				
50) 1,2-DICHLOROETHANE-d4	9.924	65	138023	30.30	PPB		0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 101.00%				
67) TOLUENE-d8	11.958	98	453299	29.05	PPB		0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 96.83%				
90) 4-BROMOFLUOROBENZENE	14.796	174	166095	29.64	PPB		0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.80%				
Target Compounds							Qvalue
29) trans-1,2-DICHLOROETHY...	7.859	61	1774	0.32	PPb		68
36) cis-1,2-DICHLOROETHYLENE	9.019	96	116917	25.54	PPb		94
56) TRICHLOROETHYLENE	10.666	95	209926	50.11	PPb		96
72) TETRACHLOROETHYLENE	12.642	164	1721	0.48	PPb	#	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

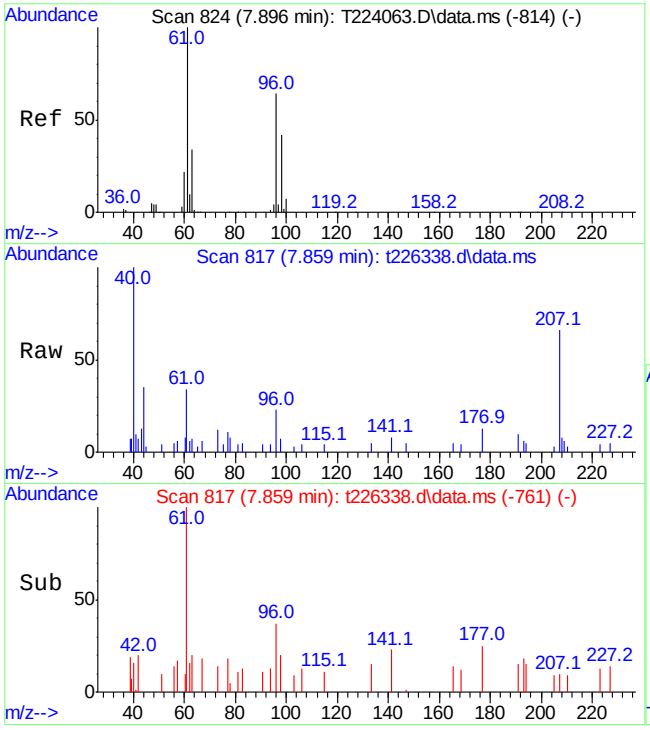
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226338.d
Acq On : 8 Sep 2017 7:36 pm
Operator : payalr
Sample : jc50259-5
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 11 14:02:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration



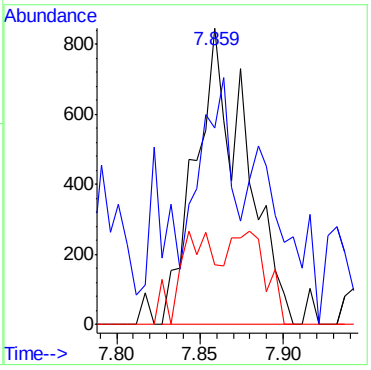
SGS ACCUTEST JC50259

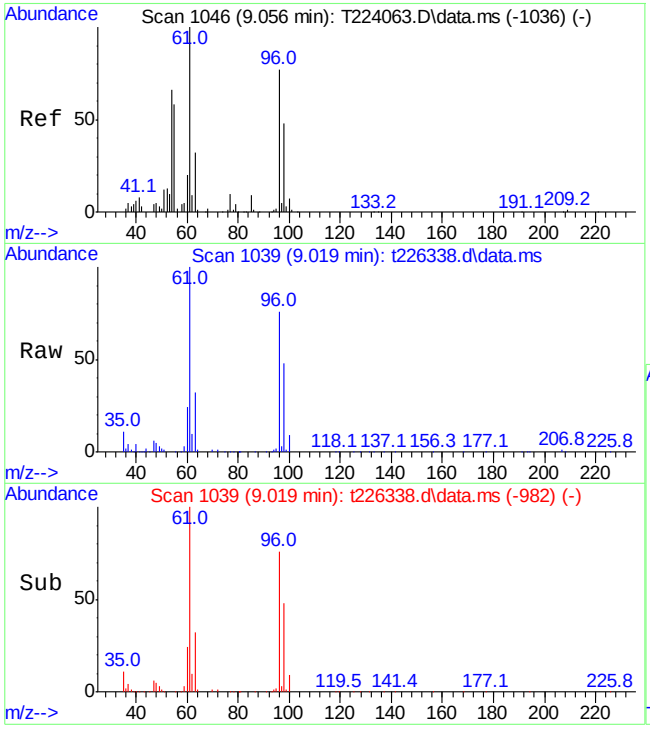


#29
trans-1,2-DICHLOROETHYLENE
Concen: 0.32 PPb
RT: 7.859 min Scan# 817
Delta R.T. -0.005 min
Lab File: t226338.d
Acq: 8 Sep 2017 7:36 pm

Tgt Ion: 61 Resp: 1774

Ion	Ratio	Lower	Upper
61	100		
96	43.8	36.3	96.3
98	20.0	14.8	74.8

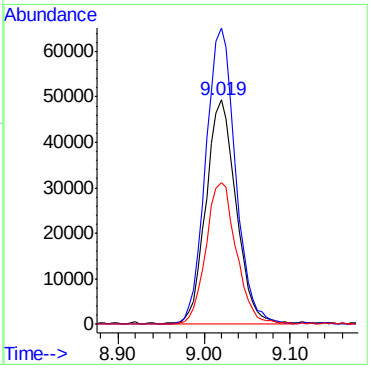


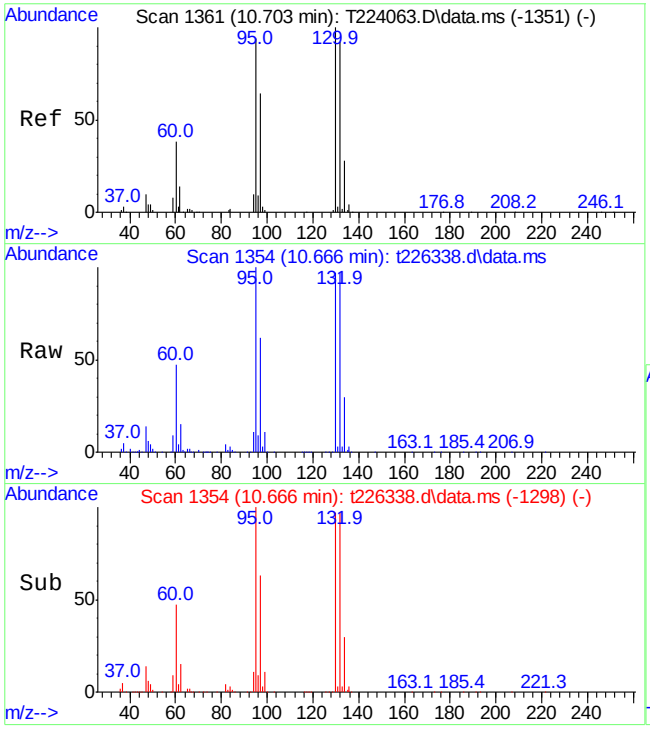


#36
cis-1,2-DICHLOROETHYLENE
Concen: 25.54 PPb
RT: 9.019 min Scan# 1039
Delta R.T. -0.001 min
Lab File: t226338.d
Acq: 8 Sep 2017 7:36 pm

Tgt Ion: 96 Resp: 116917

Ion	Ratio	Lower	Upper
96	100		
61	132.1	111.7	171.7
98	62.9	32.1	92.1

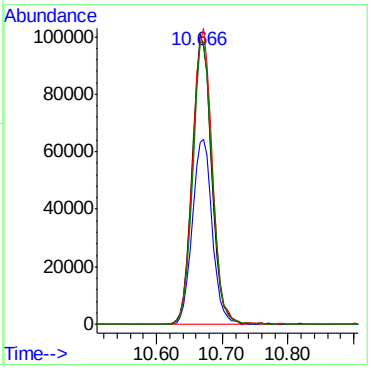


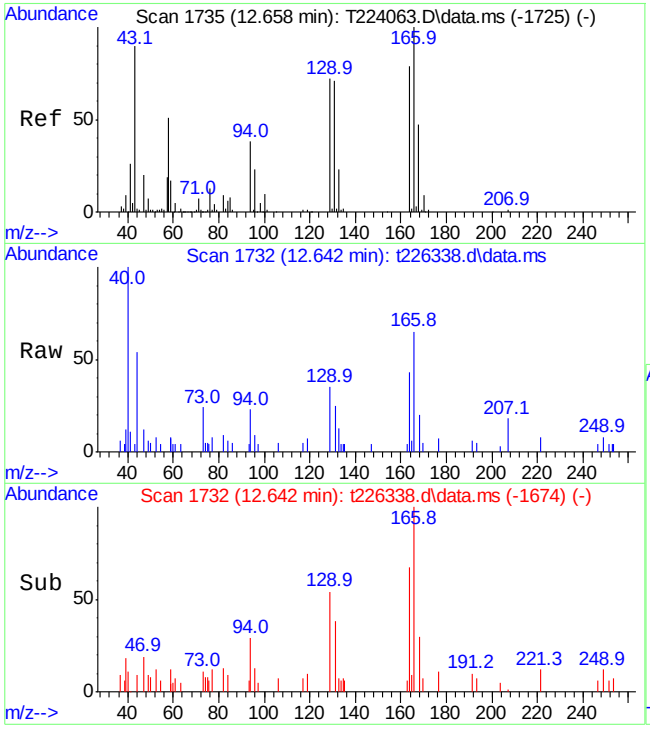


#56
TRICHLOROETHYLENE
Concen: 50.11 PPb
RT: 10.666 min Scan# 1354
Delta R.T. -0.006 min
Lab File: t226338.d
Acq: 8 Sep 2017 7:36 pm

Tgt Ion: 95 Resp: 209926

Ion	Ratio	Lower	Upper
95	100		
97	62.4	35.0	95.0
130	96.6	73.5	133.5
132	96.9	66.7	126.7

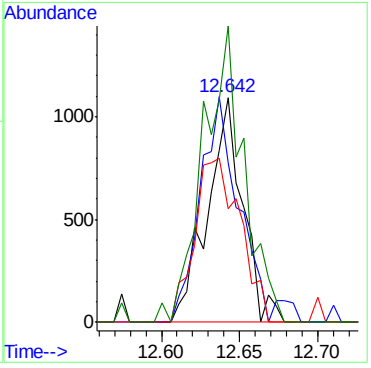




#72
TETRACHLOROETHYLENE
Concen: 0.48 PPb
RT: 12.642 min Scan# 1732
Delta R.T. 0.005 min
Lab File: t226338.d
Acq: 8 Sep 2017 7:36 pm

Tgt Ion:164 Resp: 1721

Ion	Ratio	Lower	Upper
164	100		
129	70.9	64.5	124.5
131	50.4	52.5	112.5#
166	131.7	91.2	151.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226339.d
Acq On : 8 Sep 2017 8:06 pm
Operator : payalr
Sample : jc50259-6
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 11 14:02:50 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

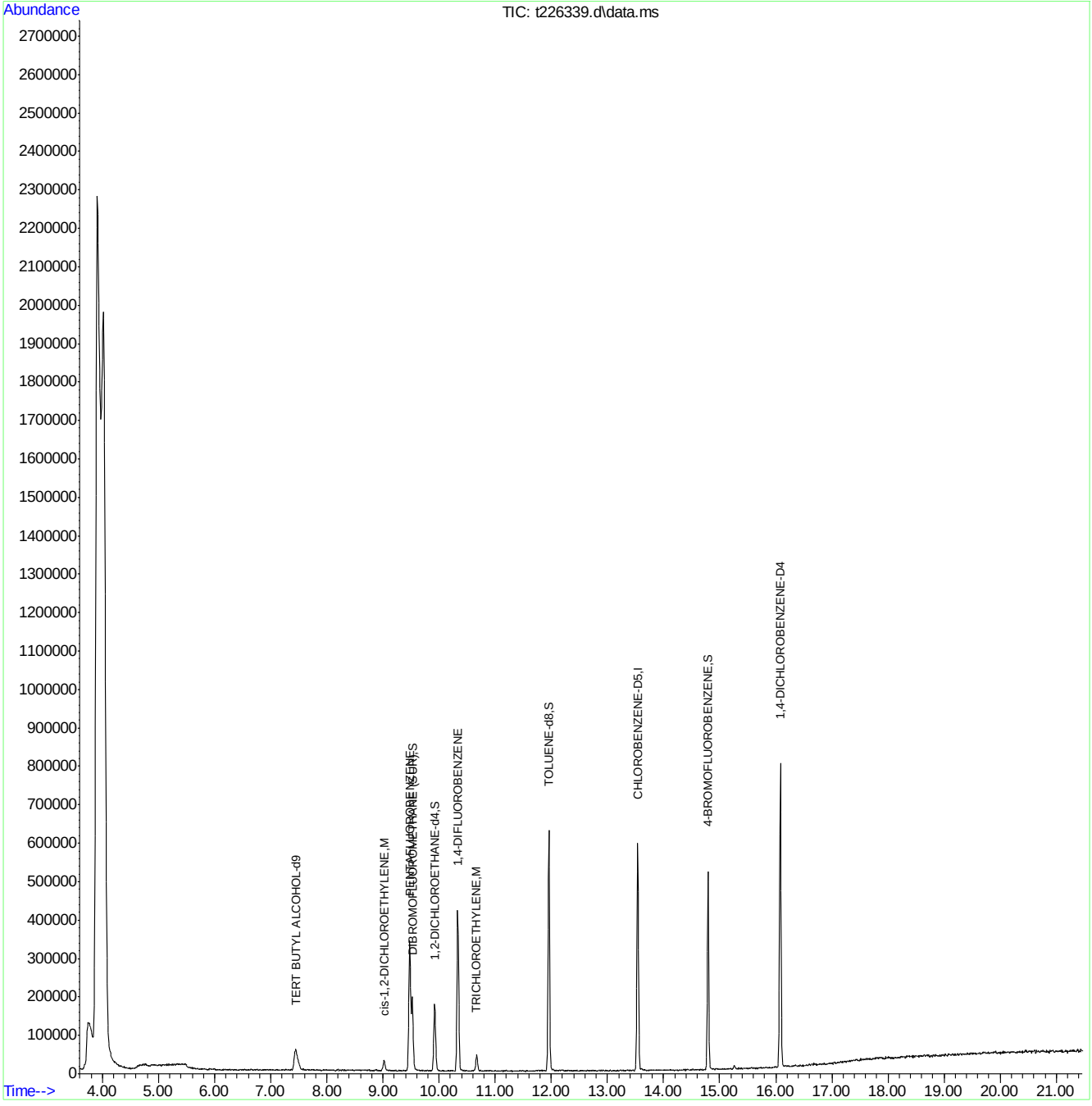
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.446	65	131842	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.475	168	269131	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.337	114	389625	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.537	117	363645	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.083	152	226689	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.527	113	132620	31.30	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 104.33%			
50) 1,2-DICHLOROETHANE-d4	9.924	65	142775	31.13	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 103.77%			
67) TOLUENE-d8	11.958	98	460371	29.77	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 99.23%			
90) 4-BROMOFLUOROBENZENE	14.792	174	166082	29.87	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 99.57%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.020	96	15936	3.43	PPb	90
56) TRICHLOROETHYLENE	10.667	95	14868	3.52	PPb	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226339.d
Acq On : 8 Sep 2017 8:06 pm
Operator : payalr
Sample : jc50259-6
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 11 14:02:50 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration



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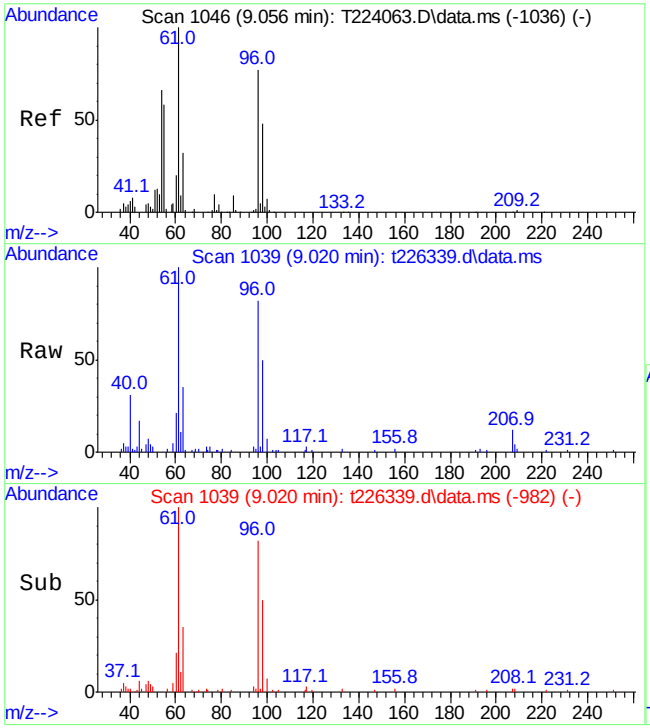
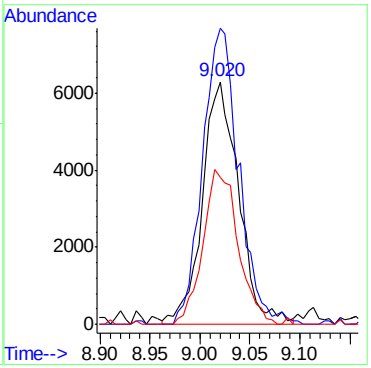
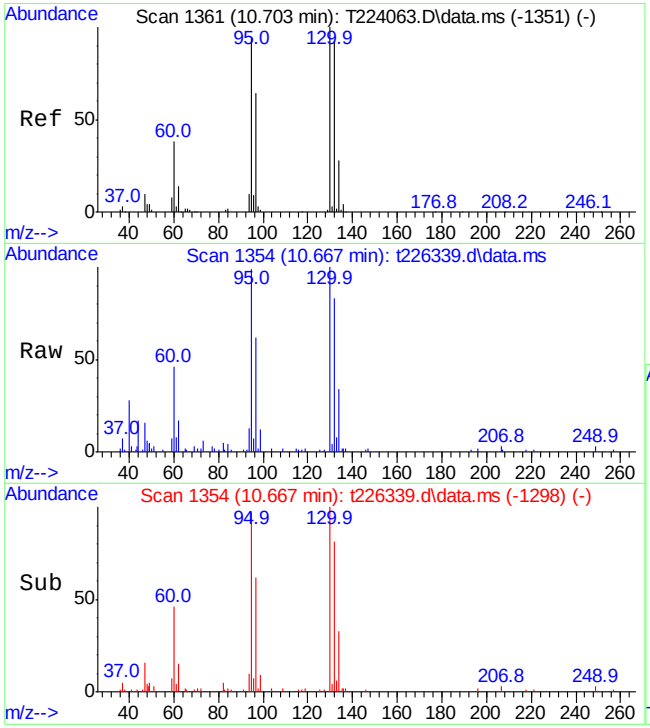


#36
cis-1,2-DICHLOROETHYLENE
Concen: 3.43 PPb
RT: 9.020 min Scan# 1039
Delta R.T. -0.000 min
Lab File: t226339.d
Acq: 8 Sep 2017 8:06 pm

Tgt Ion: 96 Resp: 15936

Ion	Ratio	Lower	Upper
96	100		
61	123.8	111.7	171.7
98	61.4	32.1	92.1

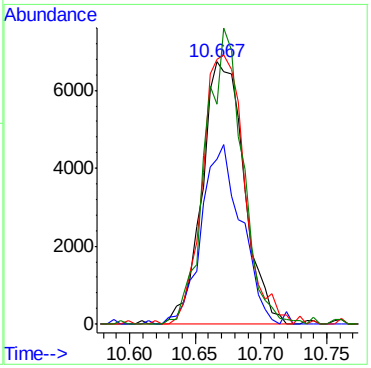




#56
TRICHLOROETHYLENE
Concen: 3.52 PPb
RT: 10.667 min Scan# 1354
Delta R.T. -0.005 min
Lab File: t226339.d
Acq: 8 Sep 2017 8:06 pm

Tgt Ion: 95 Resp: 14868

Ion	Ratio	Lower	Upper
95	100		
97	63.0	35.0	95.0
130	100.8	73.5	133.5
132	83.7	66.7	126.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226340.d
Acq On : 8 Sep 2017 8:36 pm
Operator : payalr
Sample : jc50259-7
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Sep 11 14:03:24 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

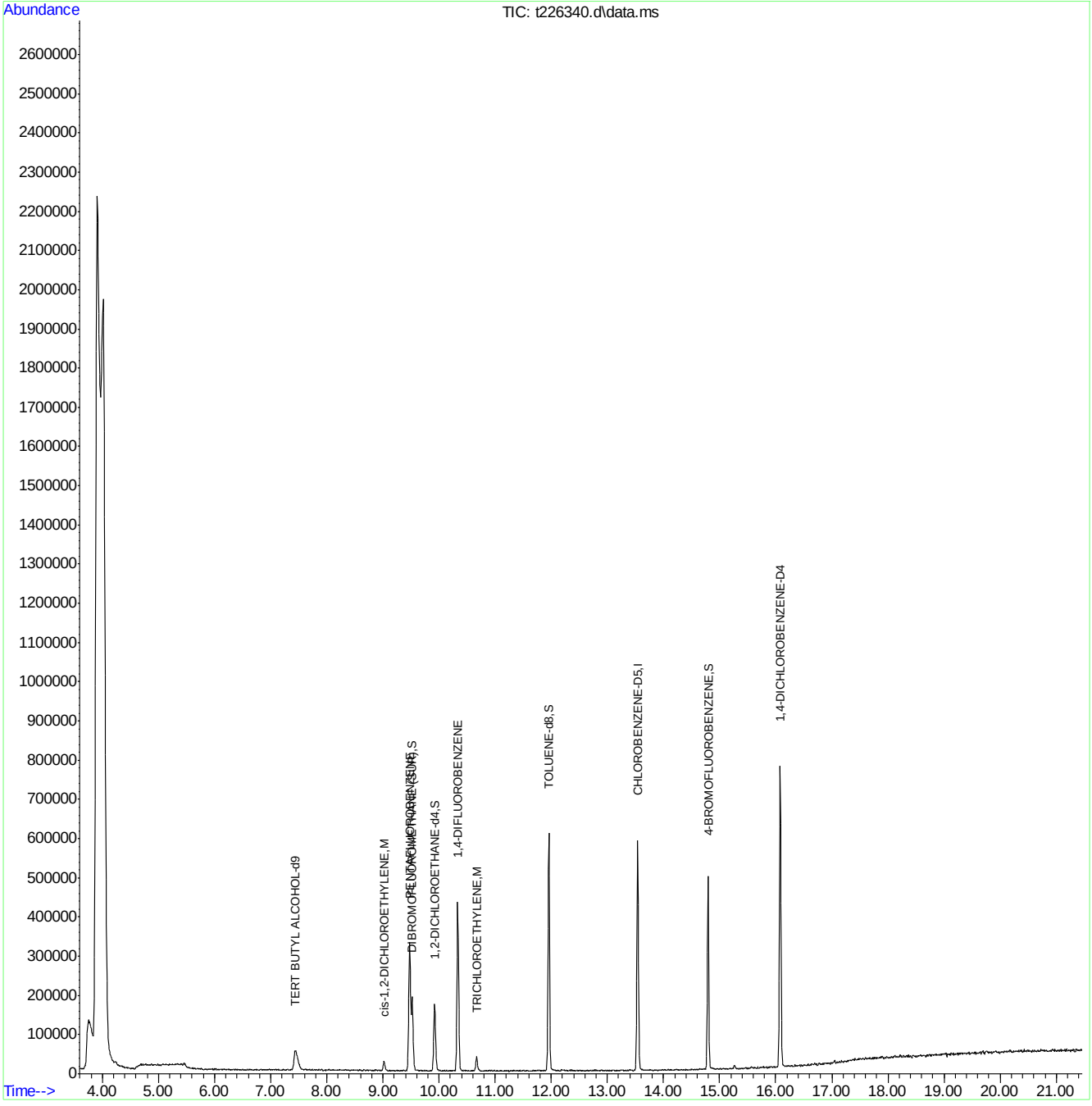
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.436	65	129958	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.475	168	261252	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.333	114	385244	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.537	117	355689	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.078	152	221691	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.522	113	127464	30.99	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 103.30%			
50) 1,2-DICHLOROETHANE-d4	9.920	65	140946	31.08	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 103.60%			
67) TOLUENE-d8	11.959	98	446232	29.50	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 98.33%			
90) 4-BROMOFLUOROBENZENE	14.797	174	159488	29.33	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.77%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.020	96	13507	3.00	PPb	88
56) TRICHLOROETHYLENE	10.672	95	11815	2.83	PPb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226340.d
Acq On : 8 Sep 2017 8:36 pm
Operator : payalr
Sample : jc50259-7
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Sep 11 14:03:24 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration



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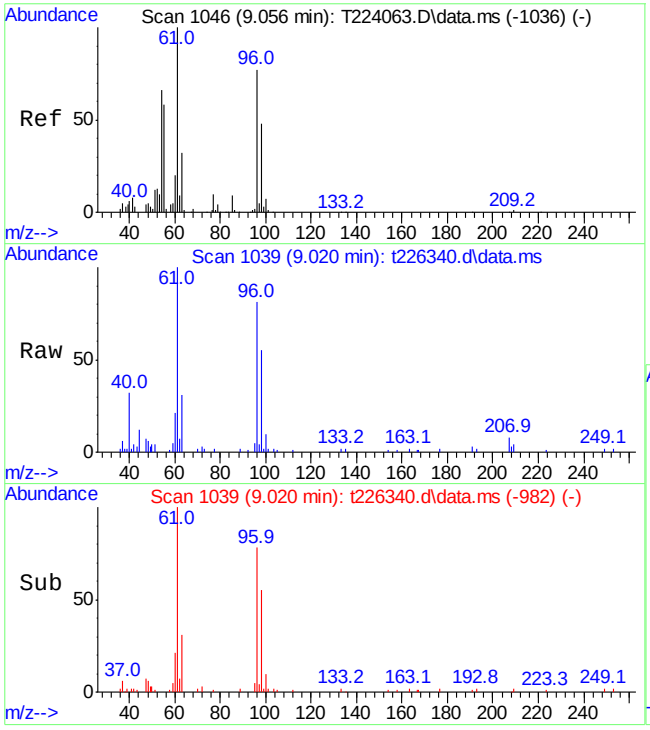
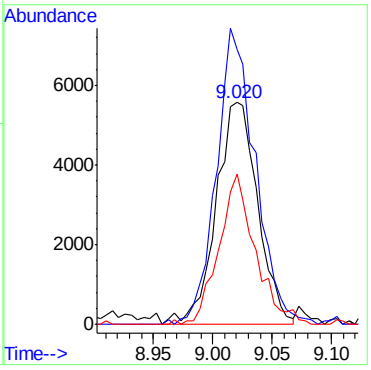
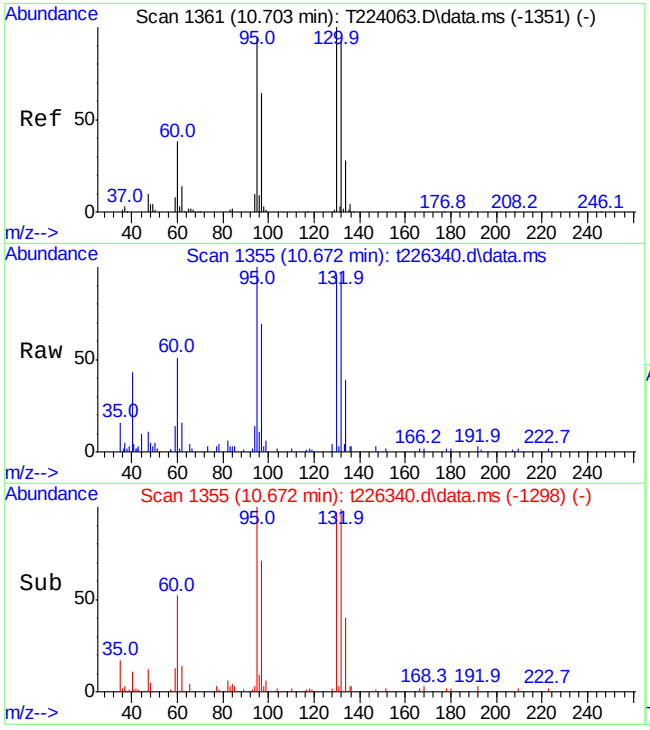


#36
cis-1,2-DICHLOROETHYLENE
Concen: 3.00 PPb
RT: 9.020 min Scan# 1039
Delta R.T. 0.000 min
Lab File: t226340.d
Acq: 8 Sep 2017 8:36 pm

Tgt Ion: 96 Resp: 13507

Ion	Ratio	Lower	Upper
96	100		
61	124.1	111.7	171.7
98	68.0	32.1	92.1

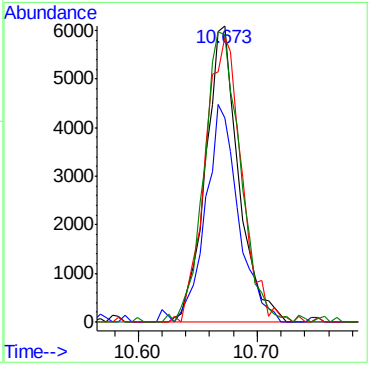




#56
TRICHLOROETHYLENE
Concen: 2.83 PPb
RT: 10.672 min Scan# 1355
Delta R.T. 0.000 min
Lab File: t226340.d
Acq: 8 Sep 2017 8:36 pm

Tgt Ion: 95 Resp: 11815

Ion	Ratio	Lower	Upper
95	100		
97	69.1	35.0	95.0
130	96.4	73.5	133.5
132	97.0	66.7	126.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226341.d
Acq On : 8 Sep 2017 9:06 pm
Operator : payalr
Sample : jc50259-8
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Sep 11 14:03:52 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

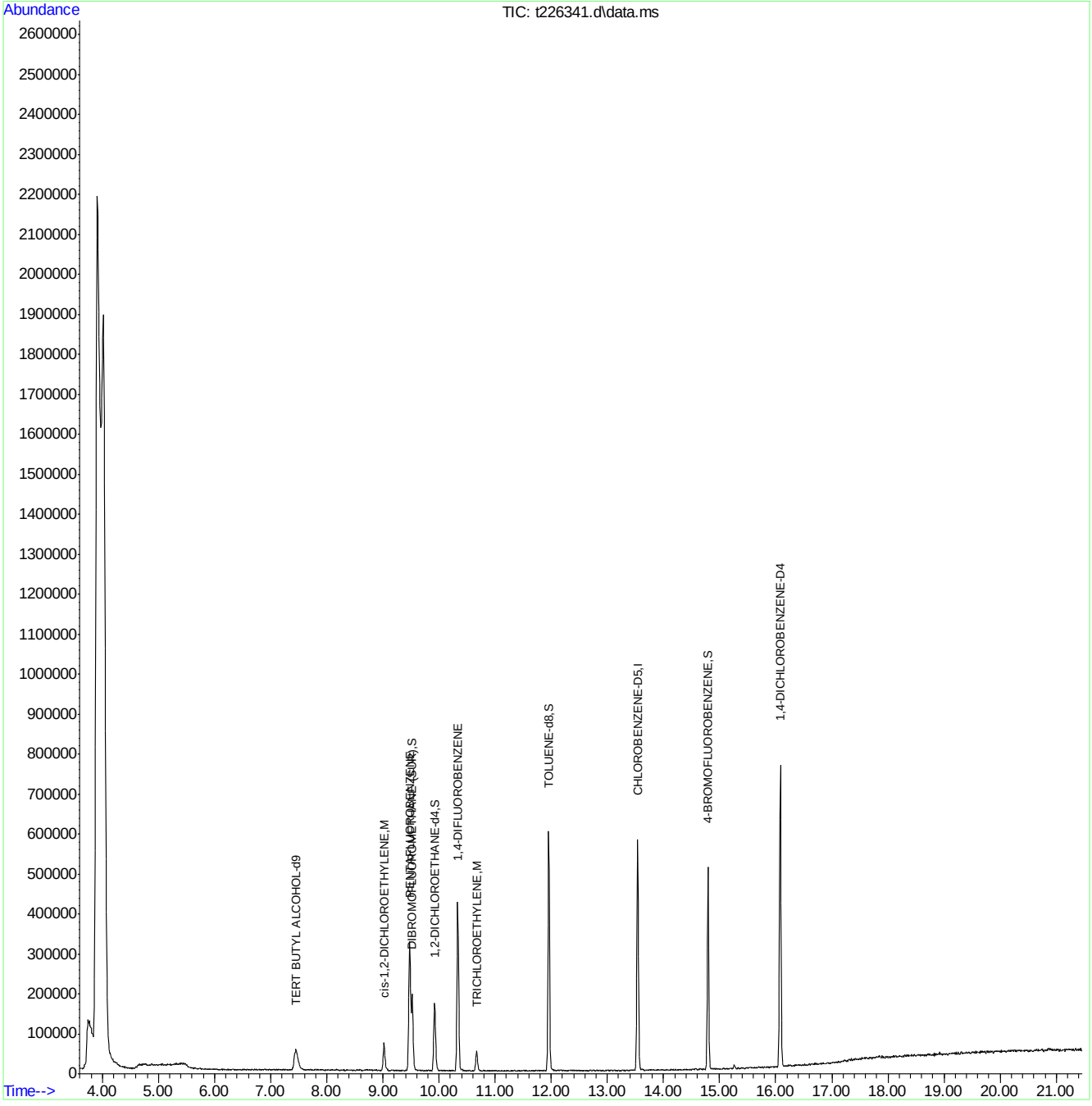
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.447	65	133974	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.475	168	261978	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.338	114	381687	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.537	117	355065	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.083	152	222395	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.522	113	127955	31.02	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 103.40%			
50) 1,2-DICHLOROETHANE-d4	9.920	65	139088	30.95	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 103.17%			
67) TOLUENE-d8	11.958	98	443298	29.36	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 97.87%			
90) 4-BROMOFLUOROBENZENE	14.792	174	162422	29.78	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 99.27%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.020	96	36267	8.02	PPb	92
56) TRICHLOROETHYLENE	10.672	95	18628	4.51	PPb	91

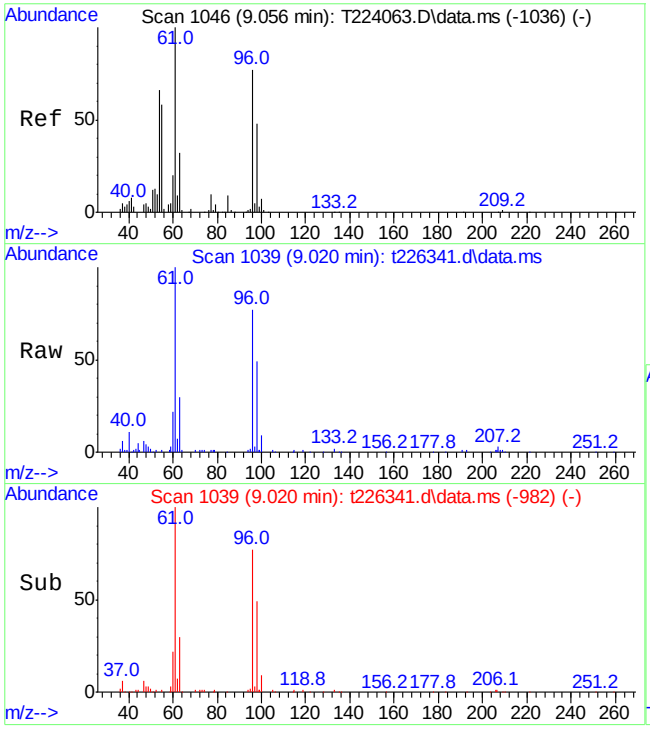
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226341.d
Acq On : 8 Sep 2017 9:06 pm
Operator : payalr
Sample : jc50259-8
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Sep 11 14:03:52 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

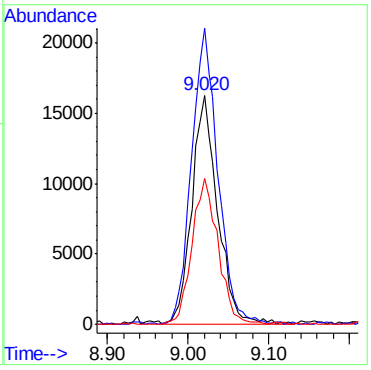


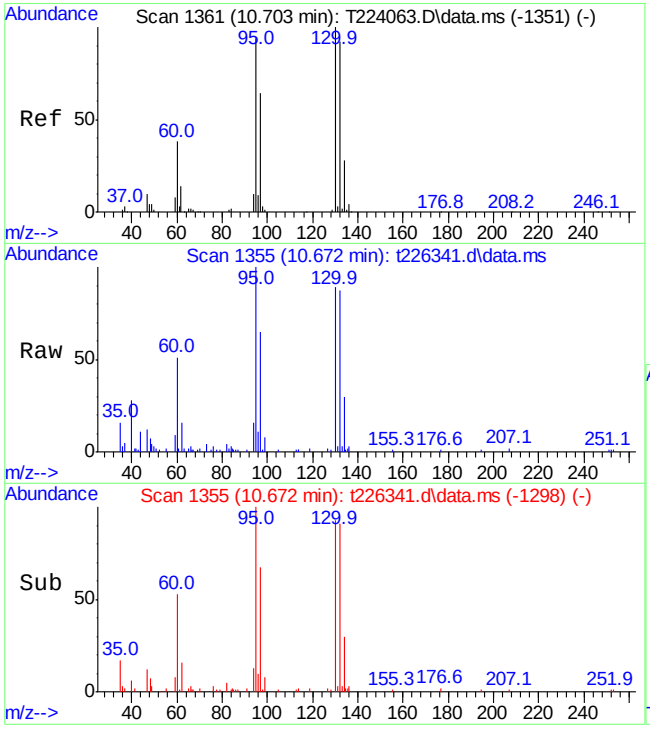


#36
cis-1,2-DICHLOROETHYLENE
Concen: 8.02 PPb
RT: 9.020 min Scan# 1039
Delta R.T. 0.000 min
Lab File: t226341.d
Acq: 8 Sep 2017 9:06 pm

Tgt Ion: 96 Resp: 36267

Ion	Ratio	Lower	Upper
96	100		
61	128.5	111.7	171.7
98	63.7	32.1	92.1

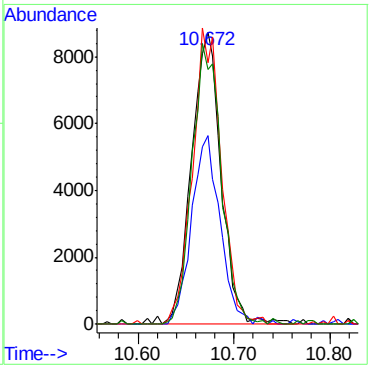




#56
TRICHLOROETHYLENE
Concen: 4.51 PPb
RT: 10.672 min Scan# 1355
Delta R.T. 0.000 min
Lab File: t226341.d
Acq: 8 Sep 2017 9:06 pm

Tgt Ion: 95 Resp: 18628

Ion	Ratio	Lower	Upper
95	100		
97	64.7	35.0	95.0
130	89.5	73.5	133.5
132	87.5	66.7	126.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226342.d
Acq On : 8 Sep 2017 9:36 pm
Operator : payalr
Sample : jc50259-9
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 11 14:04:35 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

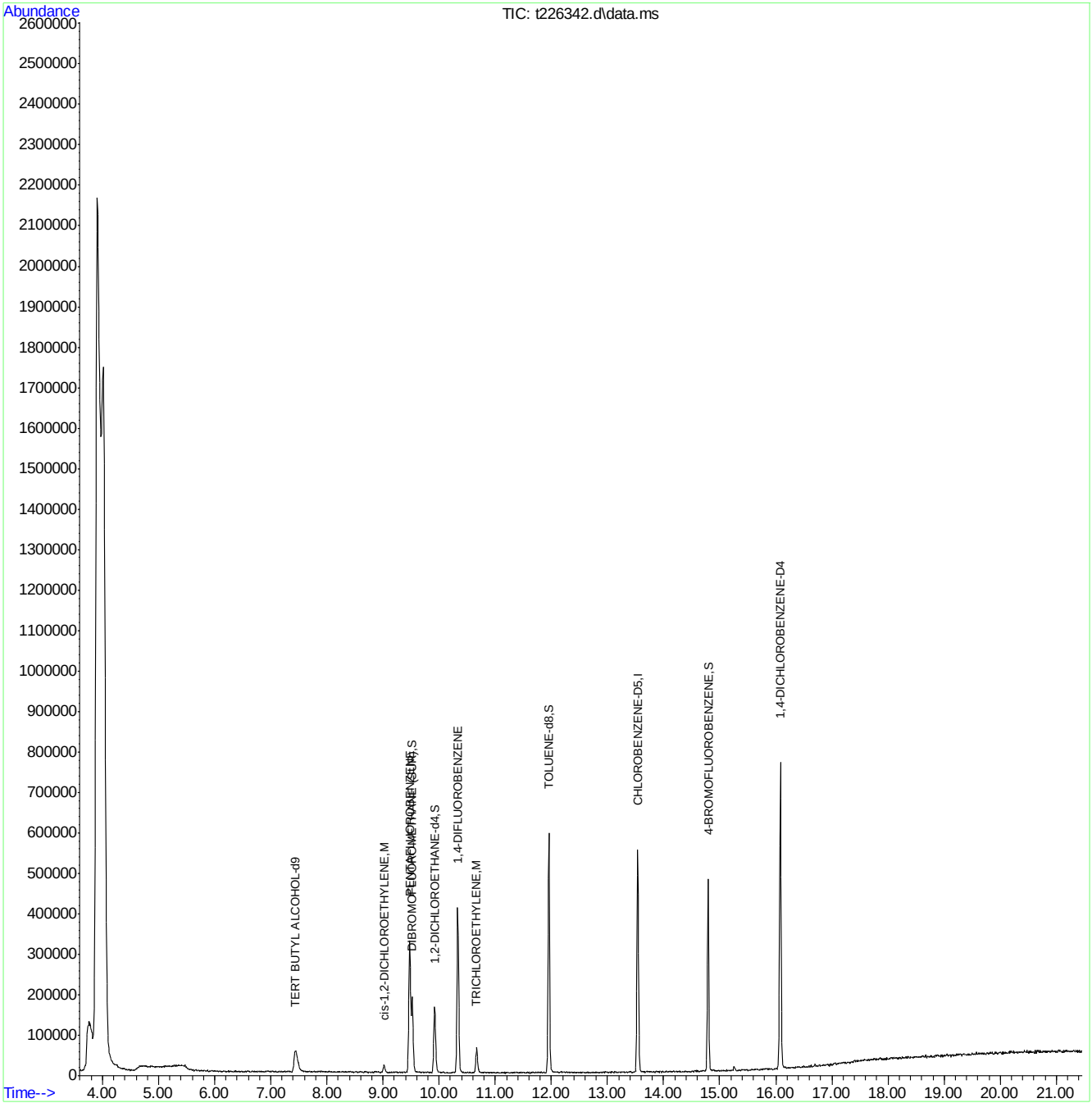
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.440	65	131506	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.474	168	259599	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.331	114	370645	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.536	117	344871	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.082	152	219570	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.521	113	125522	30.71	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 102.37%			
50) 1,2-DICHLOROETHANE-d4	9.924	65	136418	31.26	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 104.20%			
67) TOLUENE-d8	11.957	98	432244	29.47	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 98.23%			
90) 4-BROMOFLUOROBENZENE	14.796	174	155947	28.96	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 96.53%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.019	96	9978	2.23	PPb	83
56) TRICHLOROETHYLENE	10.666	95	22093	5.51	PPb	96

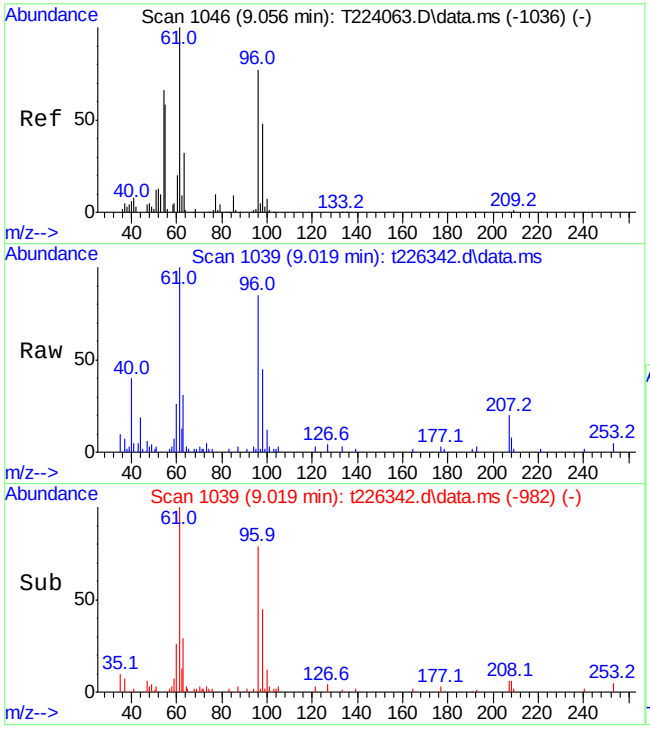
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226342.d
Acq On : 8 Sep 2017 9:36 pm
Operator : payalr
Sample : jc50259-9
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 11 14:04:35 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

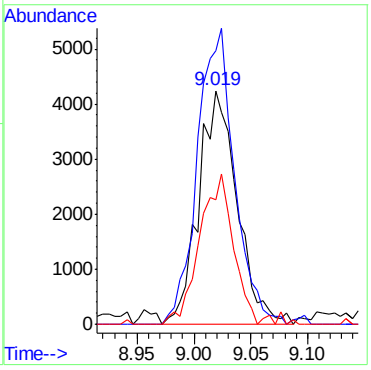


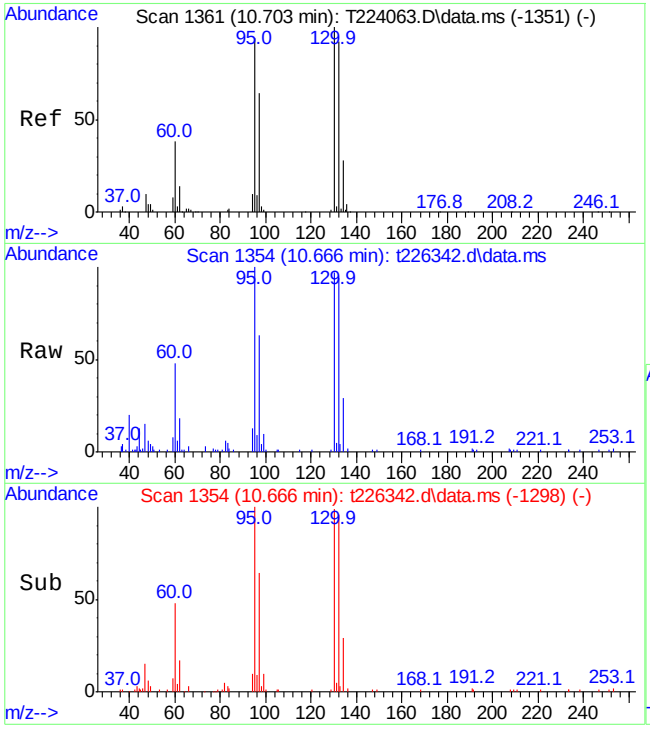


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.23 PPb
RT: 9.019 min Scan# 1039
Delta R.T. -0.001 min
Lab File: t226342.d
Acq: 8 Sep 2017 9:36 pm

Tgt Ion: 96 Resp: 9978

Ion	Ratio	Lower	Upper
96	100		
61	117.4	111.7	171.7
98	53.1	32.1	92.1

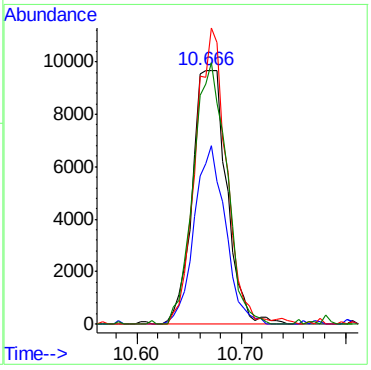




#56
TRICHLOROETHYLENE
Concen: 5.51 PPb
RT: 10.666 min Scan# 1354
Delta R.T. -0.006 min
Lab File: t226342.d
Acq: 8 Sep 2017 9:36 pm

Tgt Ion: 95 Resp: 22093

Ion	Ratio	Lower	Upper
95	100		
97	63.1	35.0	95.0
130	97.4	73.5	133.5
132	94.5	66.7	126.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226333.d
Acq On : 8 Sep 2017 5:05 pm
Operator : payalr
Sample : jc50259-10
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 11 13:58:33 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

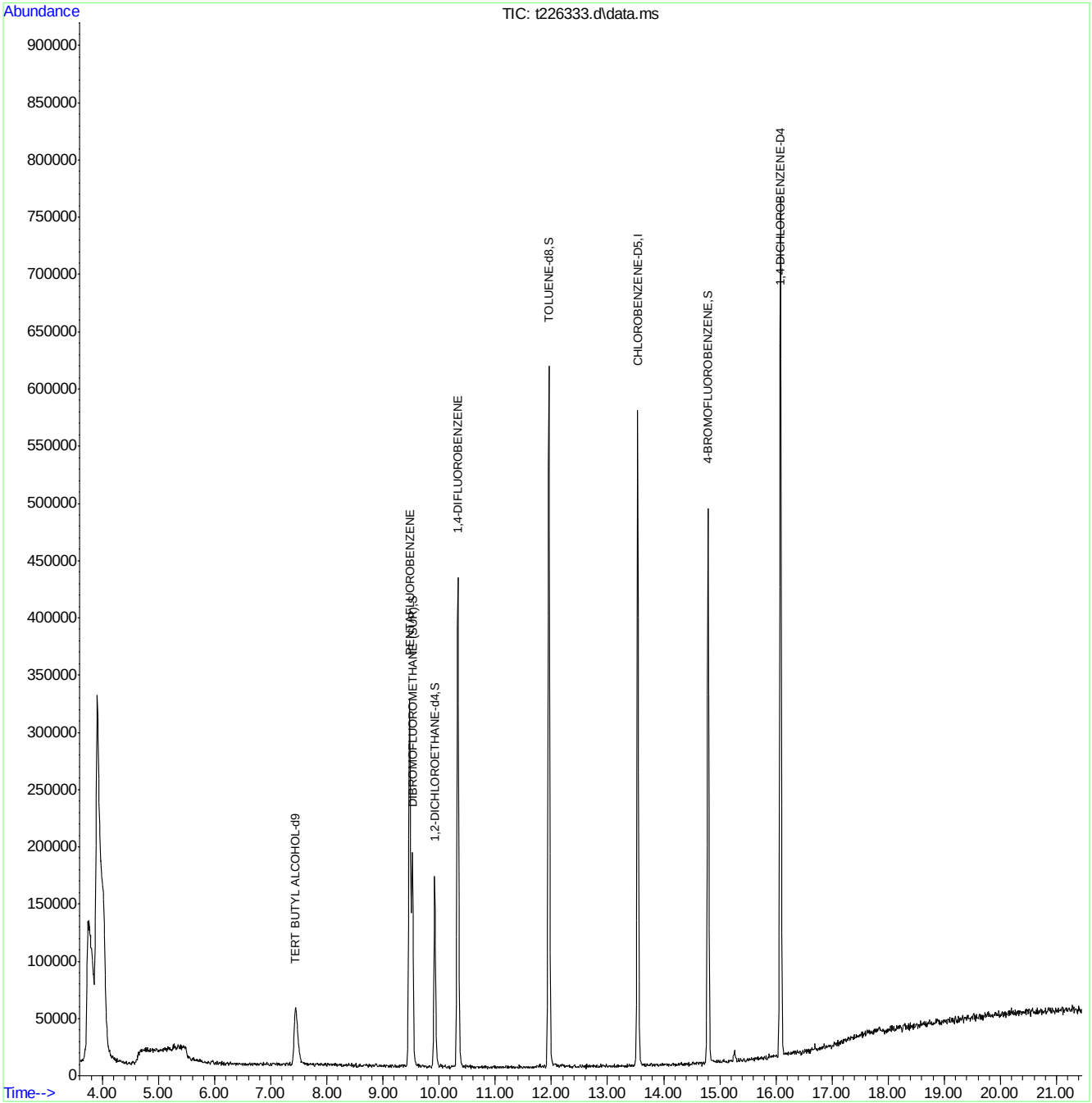
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.437	65	128570	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.476	168	259779	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.333	114	378155	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.538	117	347884	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.084	152	213790	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.523	113	125118	30.59	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 101.97%			
50) 1,2-DICHLOROETHANE-d4	9.925	65	133691	30.03	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 100.10%			
67) TOLUENE-d8	11.954	98	437942	29.60	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 98.67%			
90) 4-BROMOFLUOROBENZENE	14.793	174	155113	29.58	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.60%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226333.d
Acq On : 8 Sep 2017 5:05 pm
Operator : payalr
Sample : jc50259-10
Misc : MS19820,VT9293,W,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 11 13:58:33 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration



MT9291.M Mon Sep 11 14:07:23 2017 Page: 2

SGS ACCUTEST JC50259

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226322.d
Acq On : 8 Sep 2017 9:59 am
Operator : payalr
Sample : mb
Misc : MS19096,VT9293,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 11 13:50:18 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration

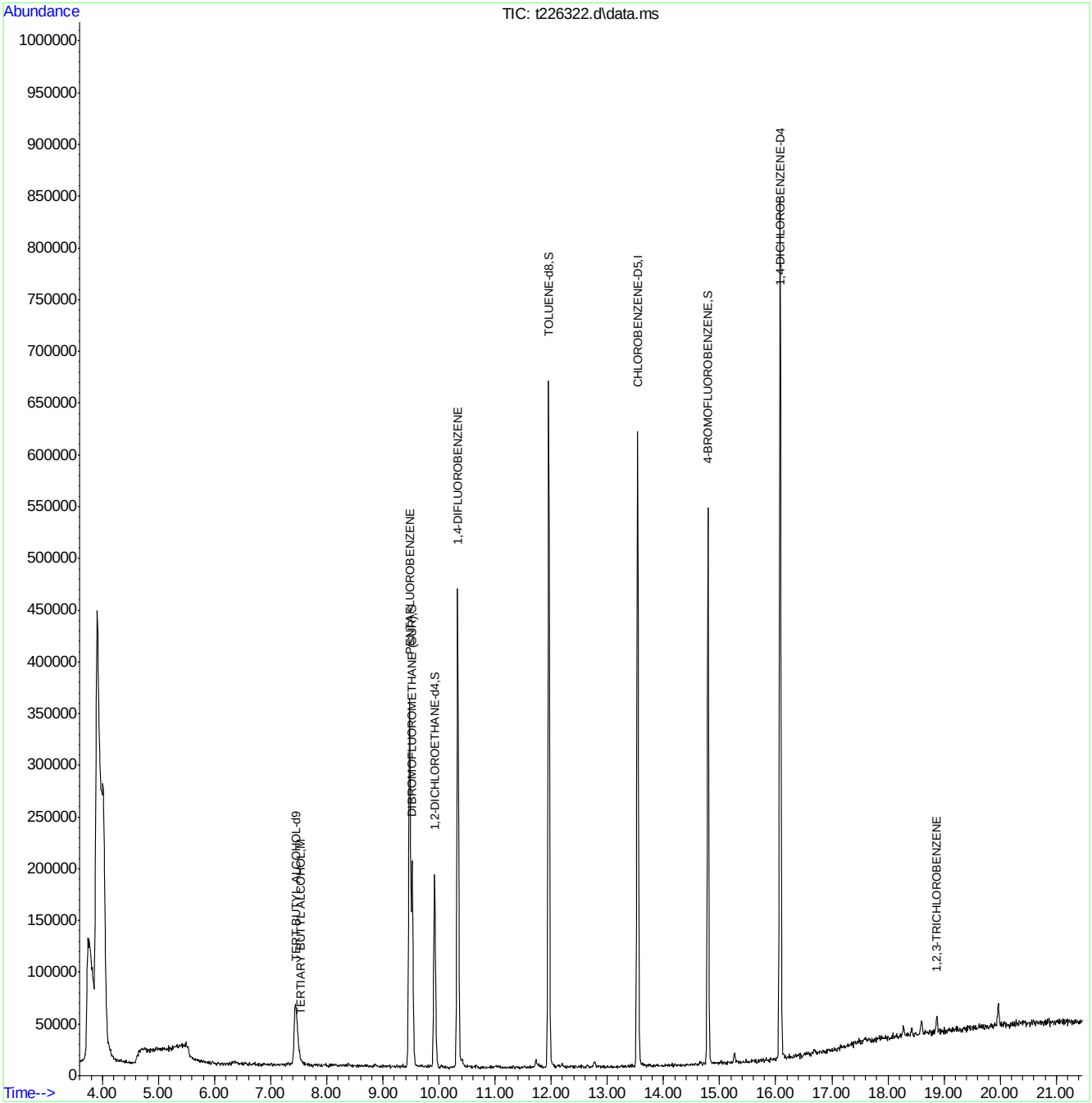
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) TERT BUTYL ALCOHOL-d9	7.447	65	149634	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.476	168	283491	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.333	114	416583	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.538	117	378765	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.084	152	240030	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.523	113	136413	30.56	PPb		0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 101.87%				
50) 1,2-DICHLOROETHANE-d4	9.920	65	152264	31.05	PPB		0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 103.50%				
67) TOLUENE-d8	11.954	98	484726	30.09	PPB		0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 100.30%				
90) 4-BROMOFLUOROBENZENE	14.792	174	172839	29.36	PPB		0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.87%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.541	59	2909	4.79	PPB		72
113) 1,2,3-TRICHLOROBENZENE	18.870	180	6250	0.57	PPB	#	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

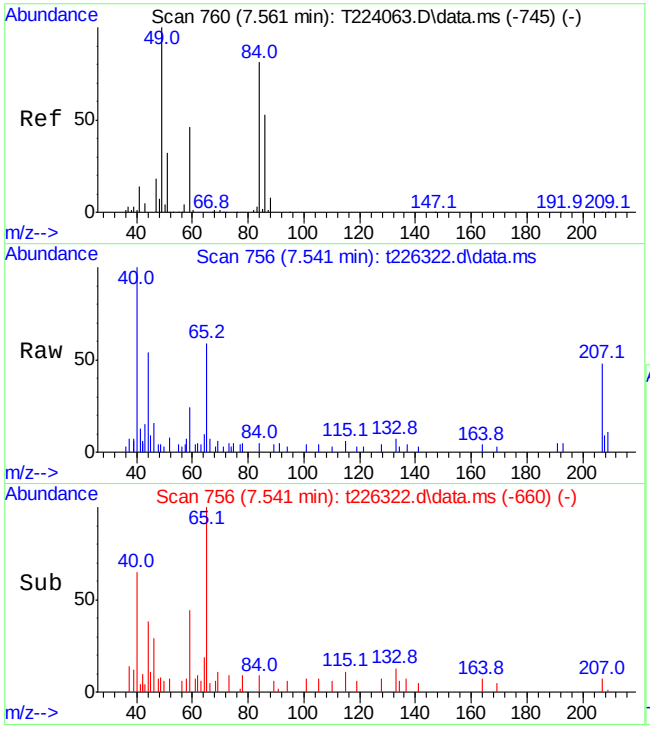
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\T-core\Vt9293\
Data File : t226322.d
Acq On : 8 Sep 2017 9:59 am
Operator : payalr
Sample : mb
Misc : MS19096,VT9293,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 11 13:50:18 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9291.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Sep 08 12:16:04 2017
Response via : Initial Calibration



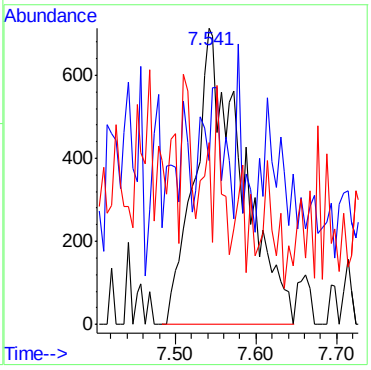
SGS ACCUTEST JC50259

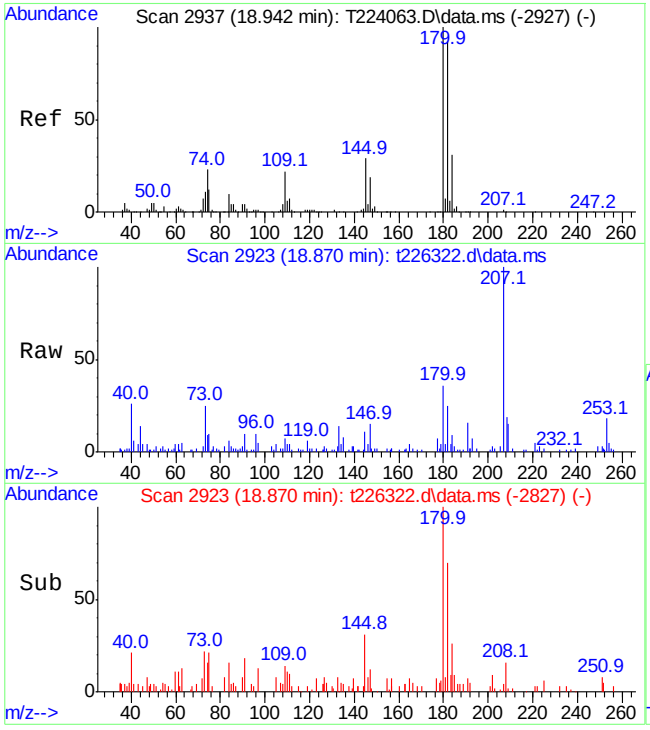


#2
TERTIARY BUTYL ALCOHOL
Concen: 4.79 PPb
RT: 7.541 min Scan# 756
Delta R.T. 0.001 min
Lab File: t226322.d
Acq: 8 Sep 2017 9:59 am

Tgt Ion: 59 Resp: 2909

Ion	Ratio	Lower	Upper
59	100		
41	22.9	0.9	60.9
43	41.8	0.0	49.3

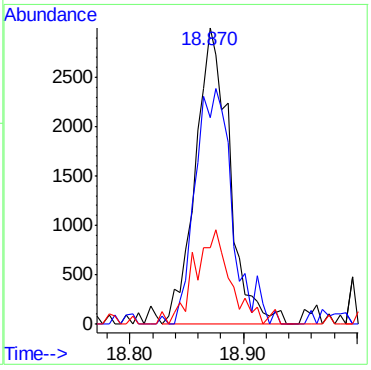




#113
1,2,3-TRICHLOROBENZENE
Concen: 0.57 PPB
RT: 18.870 min Scan# 2923
Delta R.T. 0.001 min
Lab File: t226322.d
Acq: 8 Sep 2017 9:59 am

Tgt Ion:180 Resp: 6250

Ion	Ratio	Lower	Upper
180	100		
182	69.6	73.0	113.0#
184	25.9	8.8	48.8



Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H7090817W2.CSV Date Analyzed: 09/08/17 Methods: EPA 245.1
Analyst: JA Run ID: MA42750
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:59	MA42750-STD1	1		b=2.1458e-004 c=2.1011e-002 r=0.9997112
10:00	MA42750-STD2	1		STDB
10:02	MA42750-STD3	1		STDC
10:03	MA42750-STD4	1		STDD
10:04	MA42750-STD5	1		STDE
10:06	MA42750-STD6	1		STDF
10:08	MA42750-ICV1	1		
10:10	MA42750-ICB1	1		
10:11	MA42750-ICCV1	1		
10:13	MA42750-CCB1	1		
10:14	MA42750-CRI1	1		
10:16	MP2817-MB1	1		
10:17	MP2817-B1	1		
10:18	MP2817-S1	1		
10:20	MP2817-S2	1		
10:22	JC50259-7A	1		
10:23	JC50259-8A	1		
10:25	JC50259-9A	1		
---------->	Last reportable sample/prep for job JC50259			
10:26	ZZZZZZ	1		
10:27	MA42750-CCV1	1		
10:29	MA42750-CCB2	1		
10:30	ZZZZZZ	1		
10:32	ZZZZZZ	1		
10:33	ZZZZZZ	1		
10:34	ZZZZZZ	1		
10:35	MA42750-CRI2	1		
10:37	MA42750-CCV2	1		
10:39	MA42750-CCB3	1		
---------->	Last reportable CCB for job JC50259			
	Refer to raw data for calibration curve and standards.			

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H7090817W2.CSV Date Analyzed: 09/08/17 Methods: EPA 245.1
QC Limits: result < RL Run ID: MA42750 Units: ug/l

Time: / Sample ID:			10:10 ICB1		10:13 CCB1		10:29 CCB2		10:39 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.075	-0.017	<0.20	-0.062	<0.20	-0.058	<0.20	-0.043	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H7090817W2.CSV Date Analyzed: 09/08/17 Methods: EPA 245.1
QC Limits: 95 to 105 % Recovery Run ID: MA42750 Units: ug/l

Time:		10:11	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Mercury	2.5	2.6	104.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H7090817W2.CSV Date Analyzed: 09/08/17 Methods: EPA 245.1
QC Limits: 90 to 110 % Recovery Run ID: MA42750 Units: ug/l

Time:		10:08			10:27			10:37	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	3.0	3.0	100.0	2.5	2.5	100.0	2.5	2.5	100.0

(*) Outside of QC limits
(anr) Analyte not requested

8.1.3
8

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H7090817W2.CSV Date Analyzed: 09/08/17 Methods: EPA 245.1
QC Limits: 70 to 130 % Recovery Run ID: MA42750 Units: ug/l

Time:			10:14		10:35	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Mercury	0.20		0.20	100.0	0.20	100.0

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:11	MA42768-STD1	1		STDA
09:15	MA42768-STD2	1		STDB
09:19	ZZZZZZ	1		
09:23	ZZZZZZ	1		
09:28	MA42768-ICV1	1		
09:40	MA42768-ICB1	1		
09:44	MA42768-ICCV1	1		
09:56	MA42768-CCB1	1		
09:59	MA42768-CRI1	1		
10:04	MA42768-CRID1	1		
10:08	MA42768-ICSA1	1		
10:13	MA42768-ICSAB1	1		
10:17	MA42768-HSTD1	1		
10:21	MA42768-HSTD2	1		
10:25	ZZZZZZ	1		
10:30	ZZZZZZ	1		
10:34	ZZZZZZ	1		
10:38	MA42768-CCV1	1		
10:43	MA42768-CCB2	1		
10:57	MA42768-CRI2	1		
11:01	ZZZZZZ	1		
11:05	MP2824-MB1	1		
11:09	MP2824-B1	1		
11:13	MP2824-S1	1		
11:18	MP2824-S2	1		
11:22	JC50115-23	1		(sample used for QC only; not part of login JC50259)
11:26	MP2824-SD1	5		
11:30	ZZZZZZ	1		
11:35	MA42768-CCV2	1		
11:39	MA42768-CCB3	1		
11:43	ZZZZZZ	1		
11:48	ZZZZZZ	1		
11:52	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:56	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:05	ZZZZZZ	1		
12:09	ZZZZZZ	1		
12:13	ZZZZZZ	1		
12:18	ZZZZZZ	1		
12:22	MA42768-CCV3	1		
12:26	MA42768-CCB4	1		
12:30	ZZZZZZ	1		
12:34	ZZZZZZ	1		
12:39	ZZZZZZ	1		
12:43	ZZZZZZ	1		
12:47	ZZZZZZ	1		
12:52	ZZZZZZ	1		
12:56	ZZZZZZ	1		
13:00	ZZZZZZ	1		
13:04	ZZZZZZ	1		
13:09	MA42768-CCV4	1		
13:13	MA42768-CCB5	1		
13:17	MP2828-MB1	1		
13:22	MP2828-B1	1		
13:26	ZZZZZZ	1		
13:30	ZZZZZZ	1		
13:34	MP2837-MB1	1		
13:39	MP2837-B1	1		
13:43	MP2837-S1	1		
13:47	MP2837-S2	1		
13:51	JC49927-3R	1		(sample used for QC only; not part of login JC50259)
13:55	MA42768-CCV5	1		
13:59	MA42768-CCB6	1		
14:03	MP2837-SD1	5		
14:08	ZZZZZZ	1		
14:12	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:16	ZZZZZZ	1		
14:20	ZZZZZZ	1		
14:25	ZZZZZZ	1		
14:29	ZZZZZZ	1		
14:33	ZZZZZZ	1		
14:37	ZZZZZZ	1		
14:42	MA42768-CCV6	1		
14:46	MA42768-CCB7	1		
14:50	ZZZZZZ	1		
14:54	ZZZZZZ	1		
14:58	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:07	ZZZZZZ	1		
15:11	ZZZZZZ	1		
15:15	ZZZZZZ	1		
15:20	ZZZZZZ	1		
15:24	ZZZZZZ	1		
15:28	MA42768-CCV7	1		
15:32	MA42768-CCB8	1		
15:37	ZZZZZZ	1		
15:41	MP2808-MB2	5		
15:45	MP2808-B2	5		
15:49	ZZZZZZ	5		
15:54	ZZZZZZ	5		
15:58	ZZZZZZ	5		
16:02	ZZZZZZ	5		
16:07	MA42768-CCV8	1		
16:11	MA42768-CCB9	1		
16:15	MA42768-CRI3	1		
16:20	MA42768-CRID2	1		
16:24	MA42768-ICSA2	1		
16:28	MA42768-ICSAB2	1		
16:33	MA42768-CCV9	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:37	MA42768-CCB10	1		
16:41	MP2815-MB1	1		
16:45	MP2815-B1	1		
16:49	MP2815-S1	1		
16:54	MP2815-S2	1		
16:58	JC50250-1	1		(sample used for QC only; not part of login JC50259)
17:02	MP2815-SD1	5		
17:06	JC50259-7A	1		
17:11	JC50259-8A	1		
17:15	JC50259-9A	1		
---------->	Last reportable sample/prep for job JC50259			
17:19	MA42768-CCV10	1		
17:23	MA42768-CCB11	1		
17:28	MP2842-MB1	5		
17:32	MP2842-B1	5		
17:36	MP2842-S1	5		
17:40	MP2842-S2	5		
17:45	JC50313-1AB	5		(sample used for QC only; not part of login JC50259)
17:49	MP2842-SD1	25		
17:53	ZZZZZZ	5		
17:58	ZZZZZZ	5		
18:02	ZZZZZZ	5		
18:06	MA42768-CCV11	1		
18:10	MA42768-CCB12	1		
18:15	ZZZZZZ	5		
18:19	ZZZZZZ	5		
18:24	ZZZZZZ	5		
18:28	ZZZZZZ	5		
18:32	ZZZZZZ	5		
18:37	ZZZZZZ	5		
18:41	ZZZZZZ	5		
18:46	ZZZZZZ	5		
18:50	ZZZZZZ	5		
18:54	MA42768-CCV12	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:58	MA42768-CCB13	1		
19:03	MP2791-MB3	1		
19:07	MP2791-B3	1		
19:11	ZZZZZZ	1		
19:15	MP2656-MB5	5		
19:20	MP2656-B5	5		
19:28	MA42768-CCV13	1		
19:32	MA42768-CCB14	1		
19:36	ZZZZZZ	5		
19:40	ZZZZZZ	2		
19:45	ZZZZZZ	10		
19:49	ZZZZZZ	10		
19:53	ZZZZZZ	5		
19:58	ZZZZZZ	5		
20:02	ZZZZZZ	5		
20:06	ZZZZZZ	3		
20:10	MA42768-CCV14	1		
20:14	MA42768-CCB15	1		
20:25	MA42768-CRI4	1		
20:29	MA42768-CRID3	1		
20:33	ZZZZZZ	1		
20:40	MA42768-CCV15	1		
20:44	MA42768-CCB16	1		
---------->	Last reportable CCB for job JC50259			
20:49	ZZZZZZ	1		
20:53	ZZZZZZ	1		
20:57	ZZZZZZ	1		
21:02	ZZZZZZ	1		
21:06	ZZZZZZ	1		
21:10	ZZZZZZ	1		
21:15	ZZZZZZ	1		
21:19	ZZZZZZ	1		
21:23	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:11	MA42768-STD1	3038 R	90459 R	15197 R	7091 R
09:15	MA42768-STD2	2840	83584	14824	6263
09:19	ZZZZZZ	2909	85622	14717	6443
09:23	ZZZZZZ	3024	89860	14728	7027
09:28	MA42768-ICV1	2912	85342	14528	6435
09:40	MA42768-ICB1	3034	89997	14533	7008
09:44	MA42768-ICCV1	2933	85488	14339	6438
09:56	MA42768-CCB1	3049	89484	14561	7016
09:59	MA42768-CRI1	No results reported for the elements associated with this internal standard.			
10:04	MA42768-CRID1	3026	88750	14494	6955
10:08	MA42768-ICSA1	2730	78546	13898	5779
10:13	MA42768-ICSAB1	2715	77934	13792	5750
10:17	MA42768-HSTD1	2983	87486	14355	6835
10:21	MA42768-HSTD2	2762	79170	13799	5801
10:25	ZZZZZZ	3090	89904	14735	7155
10:30	ZZZZZZ	2952	88258	14177	6927
10:34	ZZZZZZ	3035	88653	14197	6960
10:38	MA42768-CCV1	2906	84029	13837	6333
10:43	MA42768-CCB2	3067	89408	14252	7012
10:57	MA42768-CRI2	3040	88501	14203	6876
11:01	ZZZZZZ	3051	88854	14118	6947
11:05	MP2824-MB1	3070	89934	14452	6996
11:09	MP2824-B1	2997	86603	14214	6570
11:13	MP2824-S1	2879	83279	14133	6098
11:18	MP2824-S2	2870	82679	14080	6084
11:22	JC50115-23	2840	82411	14041	6165
11:26	MP2824-SD1	3003	86609	14190	6679
11:30	ZZZZZZ	2785	81045	13752	5981
11:35	MA42768-CCV2	2933	84124	14059	6377
11:39	MA42768-CCB3	3089	86990	14150	7039
11:43	ZZZZZZ	2866	82660	14317	6213
11:48	ZZZZZZ	2964	85846	14349	6574
11:52	ZZZZZZ	2883	82820	14210	6253

INTERNAL STANDARD SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:56	ZZZZZZ	2941	85971	14404	6543
12:01	ZZZZZZ	2936	85864	14426	6483
12:05	ZZZZZZ	3038	89286	14515	6959
12:09	ZZZZZZ	2976	86855	14589	6671
12:13	ZZZZZZ	2960	86883	14476	6642
12:18	ZZZZZZ	2964	87105	14533	6654
12:22	MA42768-CCV3	2928	84560	14195	6387
12:26	MA42768-CCB4	3033	88668	14371	6955
12:30	ZZZZZZ	2973	87304	14666	6667
12:34	ZZZZZZ	2970	87128	14557	6588
12:39	ZZZZZZ	2968	86519	14511	6589
12:43	ZZZZZZ	2960	86311	14436	6582
12:47	ZZZZZZ	2963	86123	14450	6577
12:52	ZZZZZZ	3056	90037	14688	7095
12:56	ZZZZZZ	2950	85720	14390	6556
13:00	ZZZZZZ	2846	82726	14152	6229
13:04	ZZZZZZ	2937	86445	14513	6617
13:09	MA42768-CCV4	2900	83856	14154	6335
13:13	MA42768-CCB5	3020	88194	14297	6916
13:17	MP2828-MB1	3029	89281	14549	6942
13:22	MP2828-B1	2918	85340	14330	6448
13:26	ZZZZZZ	3054	89669	14536	7053
13:30	ZZZZZZ	3071	89725	14365	7088
13:34	MP2837-MB1	3012	88921	14490	6898
13:39	MP2837-B1	2927	85539	14303	6473
13:43	MP2837-S1	2951	84788	14396	6410
13:47	MP2837-S2	2950	85208	14448	6424
13:51	JC49927-3R	3033	88015	14566	6739
13:55	MA42768-CCV5	2919	83011	14135	6366
13:59	MA42768-CCB6	3016	88599	14293	6920
14:03	MP2837-SD1	3039	88459	14499	6846
14:08	ZZZZZZ	2967	88404	14938	6570
14:12	ZZZZZZ	2927	85864	14488	6573

INTERNAL STANDARD SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:16	ZZZZZZ	2957	86428	14540	6642
14:20	ZZZZZZ	3038	88526	14657	6729
14:25	ZZZZZZ	3040	88269	14836	6626
14:29	ZZZZZZ	3028	87882	14684	6744
14:33	ZZZZZZ	3010	87827	14819	6570
14:37	ZZZZZZ	2989	87258	14741	6620
14:42	MA42768-CCV6	2911	84177	14208	6346
14:46	MA42768-CCB7	3021	88395	14367	6915
14:50	ZZZZZZ	3054	88553	14826	6659
14:54	ZZZZZZ	3033	87992	14723	6661
14:58	ZZZZZZ	3041	88105	14590	6696
15:03	ZZZZZZ	3042	88501	14705	6725
15:07	ZZZZZZ	3042	88360	14640	6735
15:11	ZZZZZZ	3045	88717	14642	6817
15:15	ZZZZZZ	3027	88162	14554	6769
15:20	ZZZZZZ	3033	87983	14643	6739
15:24	ZZZZZZ	2850	82291	14486	5861
15:28	MA42768-CCV7	2894	83625	14152	6313
15:32	MA42768-CCB8	3049	89146	14507	6978
15:37	ZZZZZZ	3134	91012	15664	6513
15:41	MP2808-MB2	2851	81257	14196	6147
15:45	MP2808-B2	2863	81975	14152	6120
15:49	ZZZZZZ	2794	80243	14083	5991
15:54	ZZZZZZ	2805	80713	14008	6001
15:58	ZZZZZZ	2855	81452	14144	6135
16:02	ZZZZZZ	2841	81306	14067	6106
16:07	MA42768-CCV8	2898	83687	14129	6302
16:11	MA42768-CCB9	3004	87664	14260	6875
16:15	MA42768-CRI3	2978	86588	14323	6752
16:20	MA42768-CRID2	2996	87832	14343	6844
16:24	MA42768-ICSA2	2698	76953	13743	5684
16:28	MA42768-ICSAB2	2695	76970	13761	5672
16:33	MA42768-CCV9	2902	83776	14192	6322

INTERNAL STANDARD SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:37	MA42768-CCB10	3005	87642	14266	6872
16:41	MP2815-MB1	3037	89246	14702	7008
16:45	MP2815-B1	2947	85842	14667	6508
16:49	MP2815-S1	2782	80818	14460	5893
16:54	MP2815-S2	2789	80786	14478	5903
16:58	JC50250-1	2799	81182	14507	5988
17:02	MP2815-SD1	2923	84641	14408	6474
17:06	JC50259-7A	2852	83654	14532	6322
17:11	JC50259-8A	2892	84739	14703	6454
17:15	JC50259-9A	2881	84719	14574	6418
17:19	MA42768-CCV10	2879	83298	14169	6272
17:23	MA42768-CCB11	3001	88146	14546	6871
17:28	MP2842-MB1	2841	81240	14244	6124
17:32	MP2842-B1	2858	81800	14214	6105
17:36	MP2842-S1	2778	79548	14037	5917
17:40	MP2842-S2	2778	80048	14041	5924
17:45	JC50313-1AB	2767	79591	13879	5921
17:49	MP2842-SD1	2920	84688	14137	6438
17:53	ZZZZZZ	2841	80984	14021	6085
17:58	ZZZZZZ	2813	80593	13974	6015
18:02	ZZZZZZ	2825	80458	13980	6052
18:06	MA42768-CCV11	2892	83519	14104	6290
18:10	MA42768-CCB12	3004	88093	14240	6857
18:15	ZZZZZZ	2770	79680	13949	5923
18:19	ZZZZZZ	2846	81056	14092	6108
18:24	ZZZZZZ	2824	80784	14024	6068
18:28	ZZZZZZ	2844	80991	14089	6090
18:32	ZZZZZZ	2847	81219	14065	6110
18:37	ZZZZZZ	2844	80819	14031	6101
18:41	ZZZZZZ	2838	81056	14091	6070
18:46	ZZZZZZ	2848	81176	14183	6130
18:50	ZZZZZZ	2841	80775	14130	6085
18:54	MA42768-CCV12	2851	84160	14066	6201

INTERNAL STANDARD SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:58	MA42768-CCB13	3013	87721	14289	6875
19:03	MP2791-MB3	2993	87949	14259	6828
19:07	MP2791-B3	2902	84772	14198	6394
19:11	ZZZZZZ	2944	86508	14323	6521
19:15	MP2656-MB5	3006	88276	14384	6858
19:20	MP2656-B5	2985	87198	14358	6696
19:28	MA42768-CCV13	2849	82523	13788	6186
19:32	MA42768-CCB14	2995	87336	14094	6816
19:36	ZZZZZZ	2739	79434	13794	5982
19:40	ZZZZZZ	2963	86761	14462	6572
19:45	ZZZZZZ	2988	87050	13913	6716
19:49	ZZZZZZ	2993	87157	14124	6745
19:53	ZZZZZZ	2990	86792	14184	6660
19:58	ZZZZZZ	3006	87771	14261	6703
20:02	ZZZZZZ	2933	84840	14085	6335
20:06	ZZZZZZ	3030	87469	14497	6551
20:10	MA42768-CCV14	2916	83696	13913	6303
20:14	MA42768-CCB15	3015	87691	14081	6846
20:25	MA42768-CRI4	2988	86808	14003	6720
20:29	MA42768-CRID3	3007	87558	13945	6811
20:33	ZZZZZZ	2988	87140	13941	6783
20:40	MA42768-CCV15	2907	83656	13856	6288
20:44	MA42768-CCB16	3031	88133	14028	6880
20:49	ZZZZZZ	3131	84441	14802	6306
20:53	ZZZZZZ	2788	80315	13553	6031
20:57	ZZZZZZ	2785	80606	13475	6039
21:02	ZZZZZZ	3018	87558	14048	6824
21:06	ZZZZZZ	3024	88293	14029	6890
21:10	ZZZZZZ	3045	88312	14037	6897
21:15	ZZZZZZ	3046	88912	14226	6888
21:19	ZZZZZZ	3041	88478	14087	6887
21:23	ZZZZZZ	3020	88049	14204	6839

R = Reference for ISTD limits. ! = Outside limits.

INTERNAL STANDARD SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA42768
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time:			09:40		09:56		10:43		11:39	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2	anr							
Arsenic	3.0	1.6	anr							
Barium	200	.3	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.5								
Boron	100	1.1								
Cadmium	3.0	.4	anr							
Calcium	5000	3.5	anr							
Chromium	10	.9	anr							
Cobalt	50	.4	anr							
Copper	10	.8	-0.10	<10	0.0	<10	0.20	<10	0.10	<10
Iron	100	2.8	-0.60	<100	2.4	<100	-1.5	<100	-0.80	<100
Lead	3.0	2.2	anr							
Lithium	50	1.9								
Magnesium	5000	24	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3								
Nickel	10	.5	anr							
Phosphorus	50	1.4								
Potassium	10000	44	anr							
Selenium	10	2.6	anr							
Silicon	200	1.6								
Silver	10	1	-0.10	<10	-0.50	<10	-0.40	<10	-0.40	<10
Sodium	10000	9.7	anr							
Strontium	10	.1								
Sulfur	50	3.6								
Thallium	2.0	1.5	anr							
Tin	10	.9								
Titanium	10	.7								
Tungsten	50	1.4								
Vanadium	50	.8	anr							
Zinc	20	.4	0.0	<20	-0.30	<20	-0.10	<20	-0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time:			09:40		09:56		10:43		11:39	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time: / Sample ID:			12:26 CCB4		13:13 CCB5		13:59 CCB6		14:46 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2	anr							
Arsenic	3.0	1.6	anr							
Barium	200	.3	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.5								
Boron	100	1.1								
Cadmium	3.0	.4	anr							
Calcium	5000	3.5	anr							
Chromium	10	.9	anr							
Cobalt	50	.4	anr							
Copper	10	.8	0.20	<10	0.20	<10	0.20	<10	0.10	<10
Iron	100	2.8	4.5	<100	5.9	<100	4.4	<100	4.4	<100
Lead	3.0	2.2	anr							
Lithium	50	1.9								
Magnesium	5000	24	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3								
Nickel	10	.5	anr							
Phosphorus	50	1.4								
Potassium	10000	44	anr							
Selenium	10	2.6	anr							
Silicon	200	1.6								
Silver	10	1	-0.60	<10	0.50	<10	-0.30	<10	-0.60	<10
Sodium	10000	9.7	anr							
Strontium	10	.1								
Sulfur	50	3.6								
Thallium	2.0	1.5	anr							
Tin	10	.9								
Titanium	10	.7								
Tungsten	50	1.4								
Vanadium	50	.8	anr							
Zinc	20	.4	0.0	<20	0.0	<20	-0.10	<20	0.30	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time: / Sample ID:			12:26 CCB4		13:13 CCB5		13:59 CCB6		14:46 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time: / Sample ID:			15:32 CCB8		16:11 CCB9		16:37 CCB10		17:23 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2	anr							
Arsenic	3.0	1.6	anr							
Barium	200	.3	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.5								
Boron	100	1.1								
Cadmium	3.0	.4	anr							
Calcium	5000	3.5	anr							
Chromium	10	.9	anr							
Cobalt	50	.4	anr							
Copper	10	.8	-0.20	<10	-0.30	<10	0.10	<10	0.0	<10
Iron	100	2.8	1.0	<100	2.4	<100	0.40	<100	3.1	<100
Lead	3.0	2.2	anr							
Lithium	50	1.9								
Magnesium	5000	24	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3								
Nickel	10	.5	anr							
Phosphorus	50	1.4								
Potassium	10000	44	anr							
Selenium	10	2.6	anr							
Silicon	200	1.6								
Silver	10	1	-0.50	<10	-0.60	<10	-0.40	<10	-0.10	<10
Sodium	10000	9.7	anr							
Strontium	10	.1								
Sulfur	50	3.6								
Thallium	2.0	1.5	anr							
Tin	10	.9								
Titanium	10	.7								
Tungsten	50	1.4								
Vanadium	50	.8	anr							
Zinc	20	.4	0.0	<20	-0.10	<20	0.60	<20	0.40	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time: / Sample ID:			15:32 CCB8		16:11 CCB9		16:37 CCB10		17:23 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time:			18:10		18:58		19:32		20:14	
Sample ID:			CCB12		CCB13		CCB14		CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2	anr							
Arsenic	3.0	1.6	anr							
Barium	200	.3	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.5								
Boron	100	1.1								
Cadmium	3.0	.4	anr							
Calcium	5000	3.5	anr							
Chromium	10	.9	anr							
Cobalt	50	.4	anr							
Copper	10	.8	0.0	<10	0.0	<10	-0.30	<10	0.20	<10
Iron	100	2.8	2.9	<100	4.5	<100	2.7	<100	3.0	<100
Lead	3.0	2.2	anr							
Lithium	50	1.9								
Magnesium	5000	24	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3								
Nickel	10	.5	anr							
Phosphorus	50	1.4								
Potassium	10000	44	anr							
Selenium	10	2.6	anr							
Silicon	200	1.6								
Silver	10	1	-1.0	<10	-0.60	<10	-0.80	<10	-0.30	<10
Sodium	10000	9.7	anr							
Strontium	10	.1								
Sulfur	50	3.6								
Thallium	2.0	1.5	anr							
Tin	10	.9								
Titanium	10	.7								
Tungsten	50	1.4								
Vanadium	50	.8	anr							
Zinc	20	.4	0.40	<20	0.40	<20	0.60	<20	0.50	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time: / Sample ID:			18:10 CCB12		18:58 CCB13		19:32 CCB14		20:14 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time:			20:44	
Sample ID:			CCB16	
Metal	RL	IDL	raw	final
Aluminum	200	16	anr	
Antimony	6.0	2	anr	
Arsenic	3.0	1.6	anr	
Barium	200	.3	anr	
Beryllium	1.0	.1	anr	
Bismuth	20	3.5		
Boron	100	1.1		
Cadmium	3.0	.4	anr	
Calcium	5000	3.5	anr	
Chromium	10	.9	anr	
Cobalt	50	.4	anr	
Copper	10	.8	-0.20	<10
Iron	100	2.8	2.0	<100
Lead	3.0	2.2	anr	
Lithium	50	1.9		
Magnesium	5000	24	anr	
Manganese	15	.2	anr	
Molybdenum	20	.3		
Nickel	10	.5	anr	
Phosphorus	50	1.4		
Potassium	10000	44	anr	
Selenium	10	2.6	anr	
Silicon	200	1.6		
Silver	10	1	-1.3	<10
Sodium	10000	9.7	anr	
Strontium	10	.1		
Sulfur	50	3.6		
Thallium	2.0	1.5	anr	
Tin	10	.9		
Titanium	10	.7		
Tungsten	50	1.4		
Vanadium	50	.8	anr	
Zinc	20	.4	0.40	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42768 Units: ug/l

Time:			20:44	
Sample ID:			CCB16	
Metal	RL	IDL	raw	final
Zirconium	10	.4		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		09:44	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	2000	2000	100.0
Iron	40000	41400	103.5
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	245	98.0
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2070	103.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		09:44	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		09:28			10:38			11:35	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1960	98.0	2000	2040	102.0	2000	2040	102.0
Iron	40000	40900	102.3	40000	41800	104.5	40000	41600	104.0
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	242	96.8	250	249	99.6	250	252	100.8
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2040	102.0	2000	2120	106.0	2000	2130	106.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		09:28			10:38			11:35	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		12:22			13:09			13:55	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2030	101.5	2000	2050	102.5	2000	2080	104.0
Iron	40000	41400	103.5	40000	41800	104.5	40000	41900	104.8
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	253	101.2	250	255	102.0	250	258	103.2
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2110	105.5	2000	2130	106.5	2000	2120	106.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		12:22			13:09			13:55	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		14:42			15:28			16:07	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2050	102.5	2000	2070	103.5	2000	2070	103.5
Iron	40000	41700	104.3	40000	42000	105.0	40000	41800	104.5
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	255	102.0	250	258	103.2	250	257	102.8
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2130	106.5	2000	2140	107.0	2000	2140	107.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		14:42			15:28			16:07	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		16:33			17:19			18:06	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2070	103.5	2000	2080	104.0	2000	2070	103.5
Iron	40000	41600	104.0	40000	41800	104.5	40000	41700	104.3
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	258	103.2	250	258	103.2	250	256	102.4
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2130	106.5	2000	2140	107.0	2000	2130	106.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		16:33			17:19			18:06	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		18:54			19:28			20:10	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2060	103.0	2000	2120	106.0	2000	2080	104.0
Iron	40000	41800	104.5	40000	42700	106.8	40000	41900	104.8
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	255	102.0	250	259	103.6	250	255	102.0
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2170	108.5	2000	2170	108.5	2000	2120	106.0

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		18:54			19:28			20:10	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		20:40	
Sample ID:	CCV	CCV15	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	2000	2070	103.5
Iron	40000	41700	104.3
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	257	102.8
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2140	107.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42768 Units: ug/l

Time:		20:40	
Sample ID:	CCV	CCV15	
Metal	True	Results	% Rec
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42768 Units: ug/l

Time:		10:17			10:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	5000	5180	103.6			
Iron				150000	151000	100.7
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	625	604	96.6			
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	5000	5320	106.4			

HIGH STANDARD CHECK SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42768 Units: ug/l

Time:		10:17			10:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST
JC50259

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42768 Units: ug/l

Time:				10:04		10:57		16:15	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRI3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0			9.9	99.0	10.5	105.0
Iron	100	500				106	106.0	110	110.0
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0			4.4	88.0	4.0	80.0
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	11.0	110.0	21.5	107.5	22.3	111.5

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42768 Units: ug/l

Time:				10:04		10:57		16:15	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRI3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42768 Units: ug/l

Time:				16:20		20:25		20:29	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI4		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0						
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0			10.4	104.0		
Iron	100	500				108	108.0		
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0			3.9	78.0		
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	11.3	113.0	22.3	111.5	11.5	115.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42768 Units: ug/l

Time:				16:20		20:25		20:29	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI4		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42768 Units: ug/l

Time:			10:08		10:13		16:24		16:28	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	516000	103.2	523000	104.6	542000	108.4	539000	107.8
Antimony		1000	1.2		1040	104.0	1.6		1060	106.0
Arsenic		1000	-1.2		1010	101.0	-3.2		1030	103.0
Barium		500	-0.80		522	104.4	-0.60		536	107.2
Beryllium		500	0.40		503	100.6	0.30		510	102.0
Bismuth		500	1.6		499	99.8	1.1		509	101.8
Boron		500	-0.80		495	99.0	-2.0		501	100.2
Cadmium		1000	0.40		1010	101.0	0.0		1030	103.0
Calcium	400000	400000	389000	97.3	396000	99.0	403000	100.8	401000	100.3
Chromium		500	-0.20		482	96.4	-0.30		492	98.4
Cobalt		500	0.80		488	97.6	0.90		493	98.6
Copper		500	3.7		513	102.6	3.3		530	106.0
Iron	200000	200000	194000	97.0	193000	96.5	196000	98.0	195000	97.5
Lead		1000	2.6		967	96.7	5.7		976	97.6
Lithium		500	3.4		518	103.6	3.6		523	104.6
Magnesium	500000	500000	522000	104.4	519000	103.8	529000	105.8	525000	105.0
Manganese		500	-0.90		494	98.8	-2.2		496	99.2
Molybdenum		500	-0.90		487	97.4	-1.0		496	99.2
Nickel		1000	-0.40		989	98.9	-0.10		1010	101.0
Phosphorus		500	-2.6		496	99.2	3.3		518	103.6
Potassium			-330		-450		-360		-500	
Selenium		1000	-4.8		1040	104.0	-5.7		1070	107.0
Silicon		500	-3.3		481	96.2	0.70		487	97.4
Silver		1000	-0.70		1030	103.0	-5.3		1070	107.0
Sodium			20.8		15.9		62.2		35.0	
Strontium		500	9.6		523	104.6	9.8		536	107.2
Sulfur		500	4.9		458	91.6	9.6		471	94.2
Thallium		1000	-3.0		967	96.7	-3.8		978	97.8
Tin		500	-1.4		458	91.6	-0.80		461	92.2
Titanium		500	-0.90		528	105.6	-0.50		542	108.4
Tungsten		500	12.3		487	97.4	7.8		497	99.4
Vanadium		500	-1.0		499	99.8	-0.60		510	102.0
Zinc		1000	-1.9		962	96.2	-2.0		980	98.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE091117M1.ICP Date Analyzed: 09/11/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42768 Units: ug/l

Time:			10:08		10:13		16:24		16:28	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium		500	3.4		534	106.8	2.4		547	109.4

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 09/08/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	32		
Antimony	6.0	2	3		
Arsenic	3.0	1.6	2.6		
Barium	200	.3	1		
Beryllium	1.0	.1	.31		
Bismuth	20	3.5	5.5		
Boron	100	1.1	7.8		
Cadmium	3.0	.4	.69		
Calcium	5000	3.5	48		
Chromium	10	.9	1.6		
Cobalt	50	.4	.7		
Copper	10	.8	6.5	0.20	<10
Iron	100	2.8	20	0.50	<100
Lead	3.0	2.2	2.6		
Lithium	50	1.9	11		
Magnesium	5000	24	59		
Manganese	15	.2	.78		
Molybdenum	20	.3	5.7		
Nickel	10	.5	5.2		
Phosphorus	50	1.4	14		
Potassium	10000	44	290		
Selenium	10	2.6	7.2		
Silicon	200	1.6	32		
Silver	10	1	3	-0.10	<10
Sodium	10000	9.7	170		
Strontium	10	.1	.3		
Sulfur	50	3.6	14		
Thallium	2.0	1.5	1.5		
Tin	50	.9	7.6		
Titanium	10	.7	1.3		
Tungsten	50	1.4	7.8		
Vanadium	50	.8	.95		
Zinc	20	.4	2.2	-0.10	<20

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

Metal	RL	IDL	MDL	MB raw	final
Zirconium	10	.4	1.2		

Associated samples MP2815: JC50259-7A, JC50259-8A, JC50259-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

Metal	JC50250-1 Original MS		Spikelot MPEPA200.7% Rec		QC Limits
Aluminum	anr				
Antimony					
Arsenic					
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper	3.4	2090	2000	104.3	70-130
Iron	77.6	26500	25000	105.7	70-130
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver	0.0	88.2	80	110.3	70-130
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	5.7	2130	2000	106.2	70-130
Zirconium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

	JC50250-1	Spikelot	QC
Metal	Original MS	MPEPA200.7% Rec	Limits

Associated samples MP2815: JC50259-7A, JC50259-8A, JC50259-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 09/08/17

Metal	JC50250-1 Original	MSD	Spikelot MPEPA200.7	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony						
Arsenic						
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper	3.4	2080	2000	103.8	0.5	10
Iron	77.6	26300	25000	104.9	0.8	10
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver	0.0	86.8	80	108.5	1.6	10
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	5.7	2120	2000	105.7	0.5	10
Zirconium						

8.3.2
8
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ACCUTEST
JC50259

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

Metal	JC50250-1 Original MSD	Spikelot MPEPA200.7% Rec	MSD RPD	QC Limit

Associated samples MP2815: JC50259-7A, JC50259-8A, JC50259-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

Metal	BSP Result	Spikelot MPEPA200.7	% Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	2090	2000	104.5	85-115
Iron	26800	25000	107.2	85-115
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver	86.1	80	107.6	85-115
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	2170	2000	108.5	85-115

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

Metal	BSP Result	Spikelot MPEPA200.7% Rec	QC Limits
Zirconium			

Associated samples MP2815: JC50259-7A, JC50259-8A, JC50259-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 09/08/17

Metal	JC50250-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	3.40	4.90	44.1 (a)	0-10
Iron	77.6	62.7	19.2 (a)	0-10
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	5.70	7.40	29.8 (a)	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2815 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

	JC50250-1		QC
Metal	Original SDL 1:5	%DIF	Limits
Zirconium			

Associated samples MP2815: JC50259-7A, JC50259-8A, JC50259-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2817 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.075	.082	0.014	<0.20

Associated samples MP2817: JC50259-7A, JC50259-8A, JC50259-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2817 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

Metal	JC50259-7A Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0	2.0	2	100.0	70-130

Associated samples MP2817: JC50259-7A, JC50259-8A, JC50259-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2817 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/08/17

Metal	JC50259-7A Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.0	2.0	2	100.0	0.0	19

Associated samples MP2817: JC50259-7A, JC50259-8A, JC50259-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP2817
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 09/08/17

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	2.0	2	100.0	85-115

Associated samples MP2817: JC50259-7A, JC50259-8A, JC50259-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide	GP7711/GN69465	0.010	0.0	mg/l	0.0833	0.0855	102.6	90-110%
HEM Oil and Grease	GP7681/GN69269	5.0	0.0	mg/l	40.24	34.5	85.7	78-114%
Solids, Total Suspended	GN69176	4.0	0.0	mg/l				

Associated Samples:
Batch GP7681: JC50259-7A, JC50259-8A, JC50259-9A
Batch GP7711: JC50259-7A, JC50259-8A, JC50259-9A
Batch GN69176: JC50259-7A, JC50259-8A, JC50259-9A
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Cyanide	GP7711/GN69465	JC50259-7A	mg/l	0.0	0.0	0.0	0-32%
HEM Oil and Grease	GP7681/GN69269	JC50259-7A	mg/l	0.0	0.0	0.0	0-18%
Solids, Total Suspended	GN69176	JC50183-1	mg/l	574	576	0.3	0-17%

Associated Samples:
Batch GP7681: JC50259-7A, JC50259-8A, JC50259-9A
Batch GP7711: JC50259-7A, JC50259-8A, JC50259-9A
Batch GN69176: JC50259-7A, JC50259-8A, JC50259-9A
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Cyanide	GP7711/GN69465	JC50259-7A	mg/l	0.0	0.0833	0.058	69.6N(a)	90-110%
HEM Oil and Grease	GP7681/GN69269	JC50396-1	mg/l	0.0	40.24	31.5	78.3	78-114%

Associated Samples:
Batch GP7681: JC50259-7A, JC50259-8A, JC50259-9A
Batch GP7711: JC50259-7A, JC50259-8A, JC50259-9A
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E091417W1.CN Date Analyzed: 09/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Analyst: BM Run ID: GN69465
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:12	GN69465-STD1	1		STDA
10:13	GN69465-STD2	1		STDB
10:14	GN69465-STD3	1		STDC
10:16	GN69465-STD4	1		STDD
10:17	GN69465-STD5	1		STDE
10:18	GN69465-STD6	1		STDF
10:20	GN69465-STD7	1		STDG
10:21	GN69465-ICV1	1		
10:23	GN69465-ICB1	1		
10:24	GN69465-CCV5	1		
10:25	GN69465-CCB5	1		
10:27	GP7710-MB1	1		
10:28	GP7710-B1	1		
10:29	GP7710-S1	1		
10:31	GP7710-S2	1		
10:32	GP7710-D1	1		
10:33	ZZZZZZ	1		
10:35	JC50344-1	1		(sample used for QC only; not part of login JC50259)
10:36	JC50345-1	1		(sample used for QC only; not part of login JC50259)
10:37	ZZZZZZ	1		
10:39	ZZZZZZ	1		
10:40	GN69465-CCV6	1		
10:42	GN69465-CCB6	1		
10:43	ZZZZZZ	1		
10:44	ZZZZZZ	1		
10:46	ZZZZZZ	1		
10:47	ZZZZZZ	1		
10:48	ZZZZZZ	1		
10:50	ZZZZZZ	1		
10:51	ZZZZZZ	1		
10:52	JC50380-1	1		(sample used for QC only; not part of login JC50259)
10:54	JC50380-2	1		(sample used for QC only; not part of login JC50259)
10:55	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E091417W1.CN Date Analyzed: 09/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Analyst: BM Run ID: GN69465
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:57	GN69465-CCV7	1		
10:58	GN69465-CCB7	1		
10:59	ZZZZZZ	1		
11:01	GP7711-MB1	1		
11:02	GP7711-B1	1		
11:03	GP7711-S1	1		
11:05	GP7711-D1	1		
11:06	JC50259-7A	1		
11:07	JC50259-8A	1		
11:09	JC50259-9A	1		
11:10	ZZZZZZ	1		
11:12	ZZZZZZ	1		
11:13	GN69465-CCV8	1		
11:14	GN69465-CCB8	1		
11:16	ZZZZZZ	1		
11:17	ZZZZZZ	1		
11:18	ZZZZZZ	1		
11:20	ZZZZZZ	1		
11:21	ZZZZZZ	1		
11:22	ZZZZZZ	1		
11:24	ZZZZZZ	1		
11:25	GP7746-MB1	1		
11:26	GP7746-B1	1		
11:28	GP7746-S1	1		
11:29	GN69465-CCV9	1		
11:31	GN69465-CCB9	1		
11:32	GP7746-D1	1		
11:33	JC50650-1	1		(sample used for QC only; not part of login JC50259)
11:35	GP7745-MB1	1		
11:36	GP7745-B1	1		
11:37	GP7745-S1	1		
11:39	GP7745-S2	1		
11:40	GP7745-D1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E091417W1.CN Date Analyzed: 09/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Analyst: BM Run ID: GN69465
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:41	JC50594-2	1		(sample used for QC only; not part of login JC50259)
11:43	JC50594-4	1		(sample used for QC only; not part of login JC50259)
11:44	ZZZZZZ	1		
11:46	GN69465-CCV10	1		
11:47	GN69465-CCB10	1		
11:48	ZZZZZZ	1		
11:50	ZZZZZZ	1		
11:51	ZZZZZZ	1		
11:52	ZZZZZZ	1		
11:54	ZZZZZZ	1		
11:55	ZZZZZZ	1		
11:56	ZZZZZZ	1		
11:58	ZZZZZZ	1		
11:59	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:04	GN69465-CCV11	1		
12:05	GN69465-CCB11	1		
12:33	GN69465-CCV1	1		
12:35	GN69465-CCB1	1		
12:36	GP7777-MB1	1		
12:38	GP7777-B1	1		
12:39	GP7777-S1	1		
12:40	GP7777-S2	1		
12:42	GP7777-D1	1		
12:43	JC50380-1	1		(sample used for QC only; not part of login JC50259)
12:44	JC50380-2	1		(sample used for QC only; not part of login JC50259)
12:46	ZZZZZZ	1		
12:47	ZZZZZZ	1		
12:48	ZZZZZZ	1		
12:50	GN69465-CCV2	1		
12:51	GN69465-CCB2	1		
12:53	ZZZZZZ	1		
12:54	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E091417W1.CN Date Analyzed: 09/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Analyst: BM Run ID: GN69465
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:55	ZZZZZZ	1		
12:57	ZZZZZZ	1		
12:58	ZZZZZZ	1		
12:59	ZZZZZZ	1		
13:01	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:03	ZZZZZZ	1		
13:05	ZZZZZZ	1		
13:06	GN69465-CCV3	1		
13:08	GN69465-CCB3	1		
13:09	ZZZZZZ	1		
13:10	ZZZZZZ	1		
13:12	ZZZZZZ	1		
13:13	ZZZZZZ	1		
13:14	ZZZZZZ	1		
13:17	GN69465-CCV4	1		
13:19	GN69465-CCB4	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC50259
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E091417W1.CN Date Analyzed: 09/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Run ID: GN69465 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN69465-ICV1	Cyanide	0.32	0.010	0.0058	.3	106.7	90-110
GN69465-ICB1	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV5	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB5	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV6	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB6	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV7	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB7	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV8	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB8	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV9	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB9	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV10	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB10	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV11	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB11	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV1	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB1	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV2	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB2	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV3	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB3	Cyanide	0.0058 U	0.010	0.0058			
GN69465-CCV4	Cyanide	0.38	0.010	0.0058	.4	95.0	90-110
GN69465-CCB4	Cyanide	0.0058 U	0.010	0.0058			

(!) Outside of QC limits

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Automated Report

Technical Report for

United Technologies Corporation

SECORINI: Zanesville OH, Monthly

182602727

SGS Accutest Job Number: JC52477

Sampling Date: 10/04/17

Report to:

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Indianapolis, IN 46268
susan.hall@stantec.com

ATTN: Susan Hall

Total number of pages in report: **181**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

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SGS ACCUTEST
JC52477

Sample Summary

United Technologies Corporation

Job No: JC52477

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC52477-1	10/04/17	17:30	JK	10/05/17	AQ	Ground Water	I-1
JC52477-2	10/04/17	17:35	JK	10/05/17	AQ	Ground Water	I-2
JC52477-3	10/04/17	17:40	JK	10/05/17	AQ	Ground Water	I-3
JC52477-4	10/04/17	17:45	JK	10/05/17	AQ	Ground Water	I-4
JC52477-5	10/04/17	17:50	JK	10/05/17	AQ	Influent	INFLUENT
JC52477-6	10/04/17	17:25	JK	10/05/17	AQ	Effluent	EFFLUENT
JC52477-7	10/04/17	17:20	JK	10/05/17	AQ	Ground Water	RIVOUT
JC52477-7A	10/04/17	17:20	JK	10/05/17	AQ	Ground Water	RIVOUT
JC52477-8	10/04/17	16:40	JK	10/05/17	AQ	Ground Water	W-6 OUT
JC52477-8A	10/04/17	16:40	JK	10/05/17	AQ	Ground Water	W-6 OUT
JC52477-9	10/04/17	16:20	JK	10/05/17	AQ	Ground Water	W-12 OUT
JC52477-9A	10/04/17	16:20	JK	10/05/17	AQ	Ground Water	W-12 OUT
JC52477-10	10/04/17	17:50	JK	10/05/17	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	United Technologies Corporation	**Job No**	JC52477
Site:	SECORINI: Zanesville OH, Monthly	**Report Date**	10/12/2017 12:00:59 P

On 10/05/2017, 9 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 1.1 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC52477 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method EPA 624

Matrix: AQ **Batch ID:** VT9324

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52477-2MS, JC52477-1DUP were used as the QC samples indicated.
- RPD(s) for Duplicate for trans-1,2-Dichloroethene are outside control limits for sample JC52477-1DUP. Outside control limits possibly due to vial differences.

Matrix: AQ **Batch ID:** VT9325

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC52488-2MS, JC52488-3DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals Analysis By Method EPA 200.7

Matrix: AQ **Batch ID:** MP3344

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52477-7AMS, JC52477-7AMSD, JC52477-7ASDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Copper, Zinc are outside control limits for sample MP3344-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method EPA 245.1

Matrix: AQ **Batch ID:** MP3389

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52477-7AMS, JC52477-7AMSD were used as the QC samples for metals.

General Chemistry By Method EPA 1664A

Matrix: AQ **Batch ID:** GP8313

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52477-7AMS, JC52477-8ADUP were used as the QC samples for HEM Oil and Grease.
- RPD(s) for Duplicate for HEM Oil and Grease are outside control limits for sample GP8313-D1. RPD acceptable due to low duplicate and sample concentrations.

General Chemistry By Method EPA 335.4/LACHAT

Matrix: AQ **Batch ID:** GP8268

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52292-1DUP, JC52292-1MS were used as the QC samples for Cyanide.
- Blank Spike Recovery(s) for Cyanide are outside control limits. Spike blank indicates possible high bias, but all associated samples < DL.
- Matrix Spike Recovery(s) for Cyanide are outside control limits. Spike recovery indicates possible matrix interference.
- RPD(s) for Duplicate for Cyanide are outside control limits for sample GP8268-D1. RPD acceptable due to low duplicate and sample concentrations.

General Chemistry By Method SM2540 D-11

Matrix: AQ **Batch ID:** GN70524

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52388-2DUP were used as the QC samples for Solids, Total Suspended.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC52477
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 10/04/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52477-1	**I-1**					
cis-1,2-Dichloroethene		26.3	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		26.3	1.0		ug/l	EPA 624
Trichloroethene		45.6	1.0		ug/l	EPA 624
JC52477-2	**I-2**					
cis-1,2-Dichloroethene		7.1	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		7.1	1.0		ug/l	EPA 624
Trichloroethene		16.0	1.0		ug/l	EPA 624
JC52477-3	**I-3**					
Trichloroethene		8.4	1.0		ug/l	EPA 624
JC52477-4	**I-4**					
cis-1,2-Dichloroethene		85.7	1.0		ug/l	EPA 624
trans-1,2-Dichloroethene		1.4	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		87.1	1.0		ug/l	EPA 624
Trichloroethene		177	1.0		ug/l	EPA 624
JC52477-5	**INFLUENT**					
cis-1,2-Dichloroethene		23.3	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		23.3	1.0		ug/l	EPA 624
Trichloroethene		50.7	1.0		ug/l	EPA 624
JC52477-6	**EFFLUENT**					
cis-1,2-Dichloroethene		4.1	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		4.1	1.0		ug/l	EPA 624
Trichloroethene		4.8	1.0		ug/l	EPA 624
JC52477-7	**RIVOUT**					
cis-1,2-Dichloroethene		3.8	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		3.8	1.0		ug/l	EPA 624
Trichloroethene		4.2	1.0		ug/l	EPA 624
JC52477-7A	**RIVOUT**					
Iron		1660	100		ug/l	EPA 200.7
Solids, Total Suspended		5.2	4.0		mg/l	SM2540 D-11

Summary of Hits

Job Number: JC52477
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 10/04/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52477-8	**W-6 OUT**					
cis-1,2-Dichloroethene		7.3	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		7.3	1.0		ug/l	EPA 624
Trichloroethene		4.4	1.0		ug/l	EPA 624
JC52477-8A	**W-6 OUT**					
Iron		238	100		ug/l	EPA 200.7
JC52477-9	**W-12 OUT**					
cis-1,2-Dichloroethene		2.3	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		2.3	1.0		ug/l	EPA 624
Trichloroethene		5.5	1.0		ug/l	EPA 624
JC52477-9A	**W-12 OUT**					
Iron		229	100		ug/l	EPA 200.7
JC52477-10	**TRIP BLANK**					

No hits reported in this sample.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID: I-1
Lab Sample ID: JC52477-1
Matrix: AQ - Ground Water
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 10/04/17
Date Received: 10/05/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227059.D	1	10/06/17 18:16	PR	n/a	n/a	VT9324
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	26.3	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	26.3	1.0	ug/l	
79-01-6	Trichloroethene	45.6	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	85%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	104%		80-120%
1868-53-7	Dibromofluoromethane (S)	86%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: I-2
Lab Sample ID: JC52477-2
Matrix: AQ - Ground Water
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 10/04/17
Date Received: 10/05/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227060.D	1	10/06/17 18:46	PR	n/a	n/a	VT9324
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	7.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	7.1	1.0	ug/l	
79-01-6	Trichloroethene	16.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	87%		76-122%
2037-26-5	Toluene-D8 (SUR)	94%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%		80-120%
1868-53-7	Dibromofluoromethane (S)	88%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: I-3
Lab Sample ID: JC52477-3
Matrix: AQ - Ground Water
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 10/04/17
Date Received: 10/05/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227061.D	1	10/06/17 19:17	PR	n/a	n/a	VT9324
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	8.4	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	87%		76-122%
2037-26-5	Toluene-D8 (SUR)	95%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%		80-120%
1868-53-7	Dibromofluoromethane (S)	88%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-4		
Lab Sample ID:	JC52477-4	**Date Sampled:**	10/04/17
Matrix:	AQ - Ground Water	**Date Received:**	10/05/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227062.D	1	10/06/17 19:47	PR	n/a	n/a	VT9324
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	85.7	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.4	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	87.1	1.0	ug/l	
79-01-6	Trichloroethene	177	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	88%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	90%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	INFLUENT		
Lab Sample ID:	JC52477-5	**Date Sampled:**	10/04/17
Matrix:	AQ - Influent	**Date Received:**	10/05/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227063.D	1	10/06/17 20:17	PR	n/a	n/a	VT9324
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	23.3	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	23.3	1.0	ug/l	
79-01-6	Trichloroethene	50.7	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	91%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	90%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	EFFLUENT		
Lab Sample ID:	JC52477-6	**Date Sampled:**	10/04/17
Matrix:	AQ - Effluent	**Date Received:**	10/05/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227064.D	1	10/06/17 20:47	PR	n/a	n/a	VT9324
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	4.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	4.1	1.0	ug/l	
79-01-6	Trichloroethene	4.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	91%		76-122%
2037-26-5	Toluene-D8 (SUR)	97%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	89%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC52477-7	**Date Sampled:**	10/04/17
Matrix:	AQ - Ground Water	**Date Received:**	10/05/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227065.D	1	10/06/17 21:18	PR	n/a	n/a	VT9324
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	3.8	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	3.8	1.0	ug/l	
79-01-6	Trichloroethene	4.2	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	91%		76-122%
2037-26-5	Toluene-D8 (SUR)	95%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	93%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RIVOUT
Lab Sample ID: JC52477-7A
Matrix: AQ - Ground Water
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 10/04/17
Date Received: 10/05/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]
Iron	1660	100	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	10/09/17	10/09/17	JPM	EPA 245.1 [2]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42964
(2) Instrument QC Batch: MA42966
(3) Prep QC Batch: MP3344
(4) Prep QC Batch: MP3389

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC52477-7A	**Date Sampled:**	10/04/17
Matrix:	AQ - Ground Water	**Date Received:**	10/05/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	10/11/17 09:43	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.0	5.0	mg/l	1	10/06/17 21:40	CB	EPA 1664A
Solids, Total Suspended	5.2	4.0	mg/l	1	10/05/17 18:45	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC52477-8	**Date Sampled:**	10/04/17
Matrix:	AQ - Ground Water	**Date Received:**	10/05/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227097.D	1	10/07/17 13:48	PR	n/a	n/a	VT9325
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	7.3	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	7.3	1.0	ug/l	
79-01-6	Trichloroethene	4.4	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	94%		76-122%
2037-26-5	Toluene-D8 (SUR)	97%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	96%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC52477-8A	**Date Sampled:**	10/04/17
Matrix:	AQ - Ground Water	**Date Received:**	10/05/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]
Iron	238	100	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	10/09/17	10/09/17	JPM	EPA 245.1 [2]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42964
(2) Instrument QC Batch: MA42966
(3) Prep QC Batch: MP3344
(4) Prep QC Batch: MP3389

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC52477-8A	**Date Sampled:**	10/04/17
Matrix:	AQ - Ground Water	**Date Received:**	10/05/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	10/11/17 09:45	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.0	5.0	mg/l	1	10/06/17 21:40	CB	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	10/05/17 18:45	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC52477-9	**Date Sampled:**	10/04/17
Matrix:	AQ - Ground Water	**Date Received:**	10/05/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227098.D	1	10/07/17 14:18	PR	n/a	n/a	VT9325
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.3	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.3	1.0	ug/l	
79-01-6	Trichloroethene	5.5	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	93%		76-122%
2037-26-5	Toluene-D8 (SUR)	95%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	95%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC52477-9A	**Date Sampled:**	10/04/17
Matrix:	AQ - Ground Water	**Date Received:**	10/05/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]
Iron	229	100	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	10/09/17	10/09/17	JPM	EPA 245.1 [2]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	10/05/17	10/08/17	GT	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42964
(2) Instrument QC Batch: MA42966
(3) Prep QC Batch: MP3344
(4) Prep QC Batch: MP3389

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC52477-9A	**Date Sampled:**	10/04/17
Matrix:	AQ - Ground Water	**Date Received:**	10/05/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	10/11/17 09:46	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.0	5.0	mg/l	1	10/06/17 21:40	CB	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	10/05/17 18:45	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID: TRIP BLANK
Lab Sample ID: JC52477-10
Matrix: AQ - Trip Blank Water
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 10/04/17
Date Received: 10/05/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227096.D	1	10/07/17 13:18	PR	n/a	n/a	VT9325
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	92%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	92%		80-120%

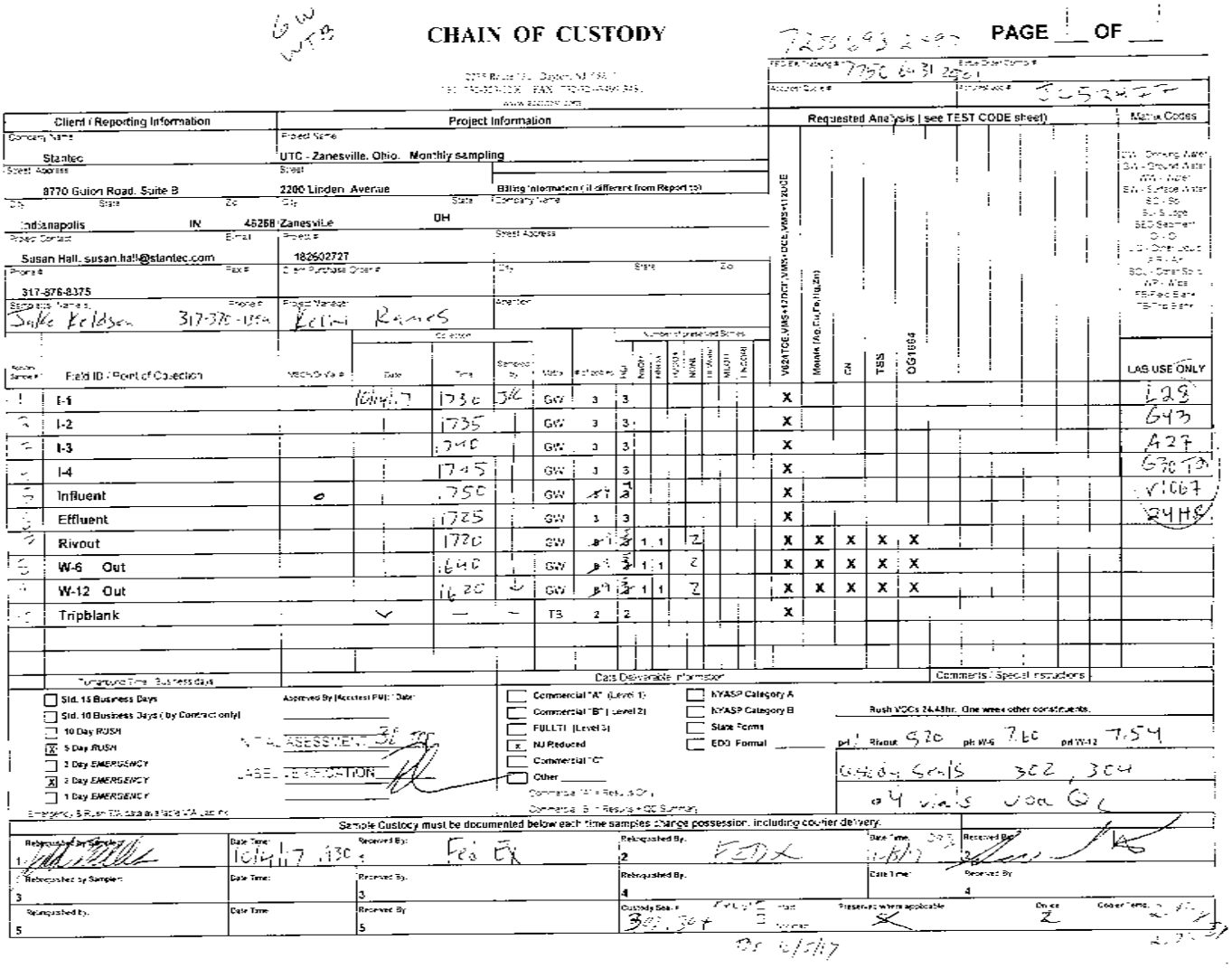
ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody



CHAIN OF CUSTODY

PAGE 1 OF 1

Client / Reporting Information	Project Information	Requested Analysis (see TEST CODE sheet)	Matrix Codes
Company Name: Stantec	Project Name: UTC - Zanesville, Ohio. Monthly sampling		
Street Address: 8770 Guion Road, Suite B	Street: 2200 Linden Avenue	Billing Information (if different from Report to):	
City: Indianapolis State: IN Zip: 46268	City: Zanesville State: OH	Company Name:	
Project Contact: Susan Hall, susan.hall@stantec.com	Email: Project #: 182602727	Street Address:	
Phone #: 317-876-8375	Fax #: Client Purchase Order #:	City: State: Zip:	
Sampler's Name: Spike Feldsen	Phone #: 317-370-1554 Project Manager: Kelini Ramos	Attention:	

Collection

Sample Number	Field ID / Point of Collection	MW/SW/Air #	Date	Time	Sampled By	Matrix	# of bottles	HgCl	NaOH	H2SO4	NONE	ZnAc/NaOH	MEOH	HNO3	VOA 624 TCL VOAs + 10 TICs, VOAs+1,4 DIOX, VOAs+1,2 DCE	Methane, Ethane, Ethene (RSK-175)	CN	TSS	OG 1664	LAB USE ONLY
1	I-1		10/4/17	1730	SF	GW	3	3							X					128
2	I-2			1735		GW	3	3							X					643
3	I-3			1740		GW	3	3							X					427
4	I-4			1745		GW	3	3							X					536 13
5	Influent	e		1750		GW	3	3							X					V1067
6	Effluent			1725		GW	3	3							X					24HR
7	Rivout			1720		GW	3	3	1	1		2			X	X	X	X	X	
8	W-6 Out			1640		GW	3	3	1	1		2			X	X	X	X	X	
9	W-12 Out			1620	↓	GW	3	3	1	1		2			X	X	X	X	X	
10	Tripblank		✓	—	—	TB	2	2							X					

Turnaround Time - Business days

- ☐ Std. 15 Business Days
- ☐ Std. 10 Business Days (by Contract only)
- ☐ 10 Day RUSH
- ☒ 5 Day RUSH
- ☐ 3 Day EMERGENCY
- ☒ 2 Day EMERGENCY
- ☐ 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM) / Date:

TOTAL ASSESSMENT: 3F 350

LABEL VERIFICATION:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULLTI (Level 3)
- ☒ NJ Reduced
- ☐ Commercial "C"
- ☐ Other

- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format

Comments / Special Instructions

Rush VOCs 24-48hr. One week other constituents.

pH Rivout 9.20 pH W-6 7.60 pH W-12 7.54

Custody Seals 302, 304

24 vials VOA Gl

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 10/4/17 1730	Received By: Fed Ex	Relinquished By: 2 FEDX	Date Time: 10/5/17 0930	Received By:
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished By: 5	Date Time:	Received By: 5	Custody Seals: 302, 304	Intact: Yes	Preservation where applicable: ✓	On Ice: 2	Cooler Temp: 2.7

Rec 10/5/17

SGS Accutest Sample Receipt Summary

Job Number: JC52477 **Client:** _____ **Project:** _____

Date / Time Received: 10/5/2017 9:30:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.4); Cooler 2: (2.7);

Cooler Temps (Corrected) °C: Cooler 1: (0.8); Cooler 2: (1.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC52477: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC52477

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC52477-1 I-1	Collected: 04-OCT-17 17:30 By: JK		Received: 05-OCT-17		By: RL	
JC52477-1	EPA 624	06-OCT-17 18:16	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC52477-2 I-2	Collected: 04-OCT-17 17:35 By: JK		Received: 05-OCT-17		By: RL	
JC52477-2	EPA 624	06-OCT-17 18:46	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC52477-3 I-3	Collected: 04-OCT-17 17:40 By: JK		Received: 05-OCT-17		By: RL	
JC52477-3	EPA 624	06-OCT-17 19:17	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC52477-4 I-4	Collected: 04-OCT-17 17:45 By: JK		Received: 05-OCT-17		By: RL	
JC52477-4	EPA 624	06-OCT-17 19:47	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC52477-5 INFLUENT	Collected: 04-OCT-17 17:50 By: JK		Received: 05-OCT-17		By: RL	
JC52477-5	EPA 624	06-OCT-17 20:17	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC52477-6 EFFLUENT	Collected: 04-OCT-17 17:25 By: JK		Received: 05-OCT-17		By: RL	
JC52477-6	EPA 624	06-OCT-17 20:47	PR			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC52477-7 RIVOUT	Collected: 04-OCT-17 17:20 By: JK		Received: 05-OCT-17		By: RL	

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC52477

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC52477-7	EPA 624	06-OCT-17 21:18	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC52477-8 W-6 OUT	Collected: 04-OCT-17 16:40 By: JK		Received: 05-OCT-17 By: RL			
JC52477-8	EPA 624	07-OCT-17 13:48	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC52477-9 W-12 OUT	Collected: 04-OCT-17 16:20 By: JK		Received: 05-OCT-17 By: RL			
JC52477-9	EPA 624	07-OCT-17 14:18	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC52477-10 TRIP BLANK	Collected: 04-OCT-17 17:50 By: JK		Received: 05-OCT-17 By: RL			
JC52477-10	EPA 624	07-OCT-17 13:18	PR			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC52477-7A RIVOUT	Collected: 04-OCT-17 17:20 By: JK		Received: 05-OCT-17 By: RL			
JC52477-7A	SM2540 D-11	05-OCT-17 18:45	TZW			TSS
JC52477-7A	EPA 1664A	06-OCT-17 21:40	CB	06-OCT-17	CB	OG1664
JC52477-7A	EPA 200.7	08-OCT-17 15:43	GT	05-OCT-17	CH	AG,CU,FE,ZN
JC52477-7A	EPA 245.1	09-OCT-17 13:43	JPM	09-OCT-17	JPM	HG
JC52477-7A	EPA 335.4/LACHAT	11-OCT-17 09:43	BM	09-OCT-17	TG	CN
JC52477-8A W-6 OUT	Collected: 04-OCT-17 16:40 By: JK		Received: 05-OCT-17 By: RL			
JC52477-8A	SM2540 D-11	05-OCT-17 18:45	TZW			TSS
JC52477-8A	EPA 1664A	06-OCT-17 21:40	CB	06-OCT-17	CB	OG1664
JC52477-8A	EPA 200.7	08-OCT-17 16:17	GT	05-OCT-17	CH	AG,CU,FE,ZN
JC52477-8A	EPA 245.1	09-OCT-17 13:45	JPM	09-OCT-17	JPM	HG
JC52477-8A	EPA 335.4/LACHAT	11-OCT-17 09:45	BM	09-OCT-17	TG	CN

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC52477

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC52477-9A	Collected: 04-OCT-17 16:20 By: JK W-12 OUT		Received: 05-OCT-17 By: RL			
JC52477-9A	SM2540 D-11	05-OCT-17 18:45	TZW			TSS
JC52477-9A	EPA 1664A	06-OCT-17 21:40	CB	06-OCT-17	CB	OG1664
JC52477-9A	EPA 200.7	08-OCT-17 16:22	GT	05-OCT-17	CH	AG,CU,FE,ZN
JC52477-9A	EPA 245.1	09-OCT-17 13:46	JPM	09-OCT-17	JPM	HG
JC52477-9A	EPA 335.4/LACHAT	11-OCT-17 09:46	BM	09-OCT-17	TG	CN

SGS Accutest Internal Chain of Custody

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 10/05/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC52477-1.1	Secured Storage	Payal Rana	10/06/17 19:36	Retrieve from Storage
JC52477-1.1	Payal Rana	GCMST	10/06/17 19:36	Load on Instrument
JC52477-1.1	GCMST	Gabriela Alvarez	10/09/17 12:27	Unload from Instrument
JC52477-1.1	Gabriela Alvarez	Secured Storage	10/09/17 12:28	Return to Storage
JC52477-2.1	Secured Storage	Payal Rana	10/06/17 19:36	Retrieve from Storage
JC52477-2.1	Payal Rana	GCMST	10/06/17 19:36	Load on Instrument
JC52477-2.1	GCMST	Gabriela Alvarez	10/09/17 12:27	Unload from Instrument
JC52477-2.1	Gabriela Alvarez	Secured Storage	10/09/17 12:28	Return to Storage
JC52477-7.1	Secured Storage	Dave Hunkele	10/06/17 14:21	Retrieve from Storage
JC52477-7.1	Dave Hunkele	Secured Staging Area	10/06/17 14:22	Return to Storage
JC52477-7.1	Secured Staging Area	Chris Brunson	10/06/17 21:10	Retrieve from Storage
JC52477-7.1	Chris Brunson		10/06/17 22:31	Depleted
JC52477-7.2	Secured Storage	Dave Hunkele	10/06/17 14:21	Retrieve from Storage
JC52477-7.2	Dave Hunkele	Secured Staging Area	10/06/17 14:22	Return to Storage
JC52477-7.2	Secured Staging Area	Chris Brunson	10/06/17 21:10	Retrieve from Storage
JC52477-7.2	Chris Brunson		10/06/17 22:31	Depleted
JC52477-7.3	Secured Storage	Todd Shoemaker	10/05/17 15:02	Retrieve from Storage
JC52477-7.3	Todd Shoemaker	Secured Staging Area	10/05/17 15:02	Return to Storage
JC52477-7.3	Secured Staging Area	Timothy Zhen Wei Ho	10/05/17 16:16	Retrieve from Storage
JC52477-7.3	Timothy Zhen Wei Ho	Secured Storage	10/06/17 00:06	Return to Storage
JC52477-7.5	Secured Storage	Dwayne Johnson	10/06/17 11:58	Retrieve from Storage
JC52477-7.5	Dwayne Johnson	Secured Staging Area	10/06/17 11:58	Return to Storage
JC52477-7.5	Secured Staging Area	Colleen Hill	10/06/17 12:23	Retrieve from Storage
JC52477-7.5	Colleen Hill	Secured Storage	10/06/17 15:08	Return to Storage
JC52477-7.5	Secured Storage	Jennifer Voitovitch	10/08/17 11:18	Retrieve from Storage
JC52477-7.5	Jennifer Voitovitch	Secured Storage	10/08/17 11:18	Return to Storage
JC52477-7.5	Secured Storage	James Patrick McIlvaine	10/09/17 10:14	Retrieve from Storage
JC52477-7.5	James Patrick McIlvaine	Secured Storage	10/09/17 10:15	Return to Storage
JC52477-7.5.1	Colleen Hill	Metals Digestion	10/06/17 15:03	Digestate from JC52477-7.5
JC52477-7.5.1	Metals Digestion	Colleen Hill	10/06/17 15:04	Digestate from JC52477-7.5
JC52477-7.5.1	Colleen Hill	Metals Digestate Storage	10/06/17 15:04	Return to Storage
JC52477-7.5.1	Metals Digestate Storage	Gulcag Temizau	10/08/17 17:14	Retrieve from Storage
JC52477-7.5.1	Gulcag Temizau	Metals Digestate Storage	10/08/17 17:16	Return to Storage
JC52477-7.5.1	Metals Digestate Storage	Gulcag Temizau	10/09/17 17:35	Retrieve from Storage
JC52477-7.5.1	Gulcag Temizau	Metals Digestate Storage	10/09/17 17:37	Return to Storage
JC52477-7.6	Secured Storage	Todd Shoemaker	10/09/17 10:53	Retrieve from Storage
JC52477-7.6	Todd Shoemaker	Secured Staging Area	10/09/17 10:53	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 10/05/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC52477-7.6	Secured Staging Area	Thomas Gabriel	10/09/17 11:14	Retrieve from Storage
JC52477-7.6	Thomas Gabriel	Secured Storage	10/09/17 17:03	Return to Storage
JC52477-8.1	Secured Storage	Dave Hunkele	10/06/17 14:21	Retrieve from Storage
JC52477-8.1	Dave Hunkele	Secured Staging Area	10/06/17 14:22	Return to Storage
JC52477-8.1	Secured Staging Area	Chris Brunson	10/06/17 21:10	Retrieve from Storage
JC52477-8.1	Chris Brunson		10/06/17 22:31	Depleted
JC52477-8.2	Secured Storage	Dave Hunkele	10/06/17 14:21	Retrieve from Storage
JC52477-8.2	Dave Hunkele	Secured Staging Area	10/06/17 14:22	Return to Storage
JC52477-8.2	Secured Staging Area	Chris Brunson	10/06/17 21:10	Retrieve from Storage
JC52477-8.2	Chris Brunson		10/06/17 22:31	Depleted
JC52477-8.4	Secured Storage	Todd Shoemaker	10/05/17 15:02	Retrieve from Storage
JC52477-8.4	Todd Shoemaker	Secured Staging Area	10/05/17 15:02	Return to Storage
JC52477-8.4	Secured Staging Area	Timothy Zhen Wei Ho	10/05/17 16:16	Retrieve from Storage
JC52477-8.4	Timothy Zhen Wei Ho	Secured Storage	10/06/17 00:06	Return to Storage
JC52477-8.5	Secured Storage	Dwayne Johnson	10/06/17 11:58	Retrieve from Storage
JC52477-8.5	Dwayne Johnson	Secured Staging Area	10/06/17 11:58	Return to Storage
JC52477-8.5	Secured Staging Area	Colleen Hill	10/06/17 12:23	Retrieve from Storage
JC52477-8.5	Colleen Hill	Secured Storage	10/06/17 15:08	Return to Storage
JC52477-8.5	Secured Storage	Jennifer Voitovitch	10/08/17 11:18	Retrieve from Storage
JC52477-8.5	Jennifer Voitovitch	Secured Storage	10/08/17 11:18	Return to Storage
JC52477-8.5	Secured Storage	James Patrick McIlvaine	10/09/17 10:14	Retrieve from Storage
JC52477-8.5	James Patrick McIlvaine	Secured Storage	10/09/17 10:15	Return to Storage
JC52477-8.5.1	Colleen Hill	Metals Digestion	10/06/17 15:03	Digestate from JC52477-8.5
JC52477-8.5.1	Metals Digestion	Colleen Hill	10/06/17 15:04	Digestate from JC52477-8.5
JC52477-8.5.1	Colleen Hill	Metals Digestate Storage	10/06/17 15:04	Return to Storage
JC52477-8.5.1	Metals Digestate Storage	Gulcag Temizau	10/08/17 17:14	Retrieve from Storage
JC52477-8.5.1	Gulcag Temizau	Metals Digestate Storage	10/08/17 17:16	Return to Storage
JC52477-8.5.1	Metals Digestate Storage	Gulcag Temizau	10/09/17 17:35	Retrieve from Storage
JC52477-8.5.1	Gulcag Temizau	Metals Digestate Storage	10/09/17 17:37	Return to Storage
JC52477-8.6	Secured Storage	Todd Shoemaker	10/09/17 10:53	Retrieve from Storage
JC52477-8.6	Todd Shoemaker	Secured Staging Area	10/09/17 10:53	Return to Storage
JC52477-8.6	Secured Staging Area	Thomas Gabriel	10/09/17 11:14	Retrieve from Storage
JC52477-8.6	Thomas Gabriel	Secured Storage	10/09/17 17:03	Return to Storage
JC52477-8.8	Secured Storage	Payal Rana	10/07/17 09:58	Retrieve from Storage
JC52477-8.8	Payal Rana	GCMST	10/07/17 09:59	Load on Instrument
JC52477-8.8	GCMST	Gabriela Alvarez	10/09/17 12:27	Unload from Instrument
JC52477-8.8	Gabriela Alvarez	Secured Storage	10/09/17 12:28	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 10/05/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC52477-9.1	Secured Storage	Dave Hunkele	10/06/17 14:21	Retrieve from Storage
JC52477-9.1	Dave Hunkele	Secured Staging Area	10/06/17 14:22	Return to Storage
JC52477-9.1	Secured Staging Area	Chris Brunson	10/06/17 21:10	Retrieve from Storage
JC52477-9.1	Chris Brunson		10/06/17 22:31	Depleted
JC52477-9.4	Secured Storage	Todd Shoemaker	10/05/17 15:02	Retrieve from Storage
JC52477-9.4	Todd Shoemaker	Secured Staging Area	10/05/17 15:02	Return to Storage
JC52477-9.4	Secured Staging Area	Timothy Zhen Wei Ho	10/05/17 16:16	Retrieve from Storage
JC52477-9.4	Timothy Zhen Wei Ho	Secured Storage	10/06/17 00:06	Return to Storage
JC52477-9.5	Secured Storage	Dwayne Johnson	10/06/17 11:58	Retrieve from Storage
JC52477-9.5	Dwayne Johnson	Secured Staging Area	10/06/17 11:58	Return to Storage
JC52477-9.5	Secured Staging Area	Colleen Hill	10/06/17 12:23	Retrieve from Storage
JC52477-9.5	Colleen Hill	Secured Storage	10/06/17 15:08	Return to Storage
JC52477-9.5	Secured Storage	Jennifer Voitovitch	10/08/17 11:18	Retrieve from Storage
JC52477-9.5	Jennifer Voitovitch	Secured Storage	10/08/17 11:18	Return to Storage
JC52477-9.5	Secured Storage	James Patrick McIlvaine	10/09/17 10:14	Retrieve from Storage
JC52477-9.5	James Patrick McIlvaine	Secured Storage	10/09/17 10:15	Return to Storage
JC52477-9.5.1	Colleen Hill	Metals Digestion	10/06/17 15:03	Digestate from JC52477-9.5
JC52477-9.5.1	Metals Digestion	Colleen Hill	10/06/17 15:04	Digestate from JC52477-9.5
JC52477-9.5.1	Colleen Hill	Metals Digestate Storage	10/06/17 15:04	Return to Storage
JC52477-9.5.1	Metals Digestate Storage	Gulcag Temizau	10/08/17 17:14	Retrieve from Storage
JC52477-9.5.1	Gulcag Temizau	Metals Digestate Storage	10/08/17 17:16	Return to Storage
JC52477-9.5.1	Metals Digestate Storage	Gulcag Temizau	10/09/17 17:35	Retrieve from Storage
JC52477-9.5.1	Gulcag Temizau	Metals Digestate Storage	10/09/17 17:37	Return to Storage
JC52477-9.6	Secured Storage	Todd Shoemaker	10/09/17 10:53	Retrieve from Storage
JC52477-9.6	Todd Shoemaker	Secured Staging Area	10/09/17 10:53	Return to Storage
JC52477-9.6	Secured Staging Area	Thomas Gabriel	10/09/17 11:14	Retrieve from Storage
JC52477-9.6	Thomas Gabriel	Secured Storage	10/09/17 17:03	Return to Storage
JC52477-9.8	Secured Storage	Payal Rana	10/07/17 09:58	Retrieve from Storage
JC52477-9.8	Payal Rana	GCMST	10/07/17 09:59	Load on Instrument
JC52477-9.8	GCMST	Gabriela Alvarez	10/09/17 12:27	Unload from Instrument
JC52477-9.8	Gabriela Alvarez	Secured Storage	10/09/17 12:28	Return to Storage
JC52477-10.1	Secured Storage	Payal Rana	10/07/17 09:58	Retrieve from Storage
JC52477-10.1	Payal Rana	GCMST	10/07/17 09:59	Load on Instrument
JC52477-10.1	GCMST	Gabriela Alvarez	10/09/17 12:27	Unload from Instrument
JC52477-10.1	Gabriela Alvarez	Secured Storage	10/09/17 12:28	Return to Storage

MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9324-MB2	T227052.D	1	10/06/17	PR	n/a	n/a	VT9324

The QC reported here applies to the following samples: **Method:** EPA 624

JC52477-1, JC52477-2, JC52477-3, JC52477-4, JC52477-5, JC52477-6, JC52477-7

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	95%	76-122%
2037-26-5	Toluene-D8 (SUR)	100%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	96%	80-120%
1868-53-7	Dibromofluoromethane (S)	95%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.76	16	ug/l	J
	system artifact	3.92	41	ug/l	J
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9325-MB	T227077.D	1	10/07/17	PR	n/a	n/a	VT9325

The QC reported here applies to the following samples: **Method:** EPA 624

JC52477-8, JC52477-9, JC52477-10

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	93%	76-122%
2037-26-5	Toluene-D8 (SUR)	98%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%	80-120%
1868-53-7	Dibromofluoromethane (S)	95%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.76	17	ug/l	J
	system artifact	3.92	27	ug/l	J
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9324-BS2	T227054.D	1	10/06/17	PR	n/a	n/a	VT9324

The QC reported here applies to the following samples: **Method:** EPA 624

JC52477-1, JC52477-2, JC52477-3, JC52477-4, JC52477-5, JC52477-6, JC52477-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	20.9	105	72-115
156-60-5	trans-1,2-Dichloroethene	20	23.5	118	70-121
540-59-0	1,2-Dichloroethene (total)	40	44.4	111	72-117
79-01-6	Trichloroethene	20	22.6	113	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	94%	76-122%
2037-26-5	Toluene-D8 (SUR)	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	80-120%
1868-53-7	Dibromofluoromethane (S)	96%	80-120%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9325-BS	T227078.D	1	10/07/17	PR	n/a	n/a	VT9325

The QC reported here applies to the following samples: **Method:** EPA 624

JC52477-8, JC52477-9, JC52477-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	18.9	95	72-115
156-60-5	trans-1,2-Dichloroethene	20	20.9	105	70-121
540-59-0	1,2-Dichloroethene (total)	40	39.8	100	72-117
79-01-6	Trichloroethene	20	20.4	102	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	92%	76-122%
2037-26-5	Toluene-D8 (SUR)	100%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%	80-120%
1868-53-7	Dibromofluoromethane (S)	93%	80-120%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC52477-2MS	T227066.D	1	10/06/17	PR	n/a	n/a	VT9324
JC52477-2	T227060.D	1	10/06/17	PR	n/a	n/a	VT9324

The QC reported here applies to the following samples: **Method:** EPA 624

JC52477-1, JC52477-2, JC52477-3, JC52477-4, JC52477-5, JC52477-6, JC52477-7

CAS No.	Compound	JC52477-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
156-59-2	cis-1,2-Dichloroethene	7.1		20	25.1	90	50-134
156-60-5	trans-1,2-Dichloroethene	ND		20	20.9	105	63-129
540-59-0	1,2-Dichloroethene (total)	7.1		40	46.1	98	48-138
79-01-6	Trichloroethene	16.0		20	36.4	102	46-145

CAS No.	Surrogate Recoveries	MS	JC52477-2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	90%	87%	76-122%
2037-26-5	Toluene-D8 (SUR)	97%	94%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%	101%	80-120%
1868-53-7	Dibromofluoromethane (S)	91%	88%	80-120%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC52488-2MS	T227093.D	1	10/07/17	PR	n/a	n/a	VT9325
JC52488-2	T227081.D	1	10/07/17	PR	n/a	n/a	VT9325

The QC reported here applies to the following samples: **Method:** EPA 624

JC52477-8, JC52477-9, JC52477-10

CAS No.	Compound	JC52488-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
156-59-2	cis-1,2-Dichloroethene	ND		20	18.0	90	50-134
156-60-5	trans-1,2-Dichloroethene	ND		20	19.4	97	63-129
540-59-0	1,2-Dichloroethene (total)	ND		40	37.5	94	48-138
79-01-6	Trichloroethene	ND		20	21.4	107	46-145

CAS No.	Surrogate Recoveries	MS	JC52488-2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	90%	92%	76-122%
2037-26-5	Toluene-D8 (SUR)	99%	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%	98%	80-120%
1868-53-7	Dibromofluoromethane (S)	88%	93%	80-120%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC52477-1DUP	T227068.D	1	10/06/17	PR	n/a	n/a	VT9324
JC52477-1	T227059.D	1	10/06/17	PR	n/a	n/a	VT9324

The QC reported here applies to the following samples: **Method:** EPA 624

JC52477-1, JC52477-2, JC52477-3, JC52477-4, JC52477-5, JC52477-6, JC52477-7

CAS No.	Compound	JC52477-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
156-59-2	cis-1,2-Dichloroethene	26.3		28.3		7	22
156-60-5	trans-1,2-Dichloroethene	ND		0.40	J	200* [a]	14
540-59-0	1,2-Dichloroethene (total)	26.3		28.7		7	22
79-01-6	Trichloroethene	45.6		48.0		5	18

CAS No.	Surrogate Recoveries	DUP	JC52477-1	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	92%	85%	76-122%
2037-26-5	Toluene-D8 (SUR)	95%	96%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	104%	80-120%
1868-53-7	Dibromofluoromethane (S)	92%	86%	80-120%

(a) Outside control limits possibly due to vial differences.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC52488-3DUP	T227095.D	1	10/07/17	PR	n/a	n/a	VT9325
JC52488-3	T227082.D	1	10/07/17	PR	n/a	n/a	VT9325

The QC reported here applies to the following samples: **Method:** EPA 624

JC52477-8, JC52477-9, JC52477-10

CAS No.	Compound	JC52488-3 ug/l	Q	DUP ug/l	Q	RPD	Limits
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	22
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	14
540-59-0	1,2-Dichloroethene (total)	ND		ND		nc	22
79-01-6	Trichloroethene	ND		ND		nc	18

CAS No.	Surrogate Recoveries	DUP	JC52488-3	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	91%	92%	76-122%
2037-26-5	Toluene-D8 (SUR)	98%	100%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%	101%	80-120%
1868-53-7	Dibromofluoromethane (S)	92%	94%	80-120%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9306-BFB
Lab File ID: T226632.D
Instrument ID: GCMST
Injection Date: 09/20/17
Injection Time: 17:14

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12205	22.0		Pass
75	30.0 - 60.0% of mass 95	28981	52.2		Pass
95	Base peak, 100% relative abundance	55514	100.0		Pass
96	5.0 - 9.0% of mass 95	3831	6.90		Pass
173	Less than 2.0% of mass 174	205	0.37	(0.40) [a]	Pass
174	50.0 - 120.0% of mass 95	51706	93.1		Pass
175	5.0 - 9.0% of mass 174	3961	7.14	(7.66) [a]	Pass
176	95.0 - 101.0% of mass 174	49349	88.9	(95.4) [a]	Pass
177	5.0 - 9.0% of mass 176	3178	5.72	(6.44) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9306-IC9306	T226633.D	09/20/17	18:08	00:54	Initial cal 0.5
VT9306-IC9306	T226634.D	09/20/17	18:38	01:24	Initial cal 0.2
VT9306-IC9306	T226635.D	09/20/17	19:08	01:54	Initial cal 1
VT9306-IC9306	T226636.D	09/20/17	19:38	02:24	Initial cal 2
VT9306-IC9306	T226637.D	09/20/17	20:08	02:54	Initial cal 5
VT9306-ICC9306	T226638.D	09/20/17	20:38	03:24	Initial cal 20
VT9306-IC9306	T226639.D	09/20/17	21:09	03:55	Initial cal 50
VT9306-IC9306	T226640.D	09/20/17	21:39	04:25	Initial cal 100
VT9306-IC9306	T226641.D	09/20/17	22:09	04:55	Initial cal 200
VT9306-ICV9306	T226644.D	09/20/17	23:39	06:25	Initial cal verification 20
VT9306-ICV9306	T226645.D	09/21/17	00:09	06:55	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VT9307-BFB	**Injection Date:**	09/21/17
Lab File ID:	T226650.D	**Injection Time:**	13:55
Instrument ID:	GCMST		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	9967	22.2		Pass
75	30.0 - 60.0% of mass 95	22802	50.8		Pass
95	Base peak, 100% relative abundance	44851	100.0		Pass
96	5.0 - 9.0% of mass 95	2893	6.45		Pass
173	Less than 2.0% of mass 174	148	0.33	(0.35) [a]	Pass
174	50.0 - 150.0% of mass 95	42052	93.8		Pass
175	5.0 - 9.0% of mass 174	3092	6.89	(7.35) [a]	Pass
176	95.0 - 101.0% of mass 174	40684	90.7	(96.7) [a]	Pass
177	5.0 - 9.0% of mass 176	2623	5.85	(6.45) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9307-ICV9306	T226651.D	09/21/17	14:25	00:30	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9324-BFB2
Lab File ID: T227050.D
Instrument ID: GCMST
Injection Date: 10/06/17
Injection Time: 11:58

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12726	18.0		Pass
75	30.0 - 60.0% of mass 95	32376	45.9		Pass
95	Base peak, 100% relative abundance	70555	100.0		Pass
96	5.0 - 9.0% of mass 95	4731	6.71		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	59091	83.8		Pass
175	5.0 - 9.0% of mass 174	4694	6.65	(7.94) [a]	Pass
176	95.0 - 101.0% of mass 174	57816	81.9	(97.8) [a]	Pass
177	5.0 - 9.0% of mass 176	3945	5.59	(6.82) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9324-CC9306	T227051.D	10/06/17	12:28	00:30	Continuing cal 20
VT9324-MB2	T227052.D	10/06/17	12:58	01:00	Method Blank
ZZZZZZ	T227053.D	10/06/17	13:28	01:30	(unrelated sample)
VT9324-BS2	T227054.D	10/06/17	13:58	02:00	Blank Spike
JC52477-1	T227059.D	10/06/17	18:16	06:18	I-1
JC52477-2	T227060.D	10/06/17	18:46	06:48	I-2
JC52477-3	T227061.D	10/06/17	19:17	07:19	I-3
JC52477-4	T227062.D	10/06/17	19:47	07:49	I-4
JC52477-5	T227063.D	10/06/17	20:17	08:19	INFLUENT
JC52477-6	T227064.D	10/06/17	20:47	08:49	EFFLUENT
JC52477-7	T227065.D	10/06/17	21:18	09:20	RIVOUT
JC52477-2MS	T227066.D	10/06/17	21:48	09:50	Matrix Spike
JC52477-1DUP	T227068.D	10/06/17	22:48	10:50	Duplicate
ZZZZZZ	T227070.D	10/06/17	23:18	11:20	(unrelated sample)
ZZZZZZ	T227071.D	10/06/17	23:48	11:50	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9325-BFB
Lab File ID: T227074.D
Instrument ID: GCMST
Injection Date: 10/07/17
Injection Time: 01:18

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	13612	19.0		Pass
75	30.0 - 60.0% of mass 95	33425	46.6		Pass
95	Base peak, 100% relative abundance	71691	100.0		Pass
96	5.0 - 9.0% of mass 95	4844	6.76		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	63477	88.5		Pass
175	5.0 - 9.0% of mass 174	4751	6.63	(7.48) [a]	Pass
176	95.0 - 101.0% of mass 174	62488	87.2	(98.4) [a]	Pass
177	5.0 - 9.0% of mass 176	3950	5.51	(6.32) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9325-CC9306	T227075.D	10/07/17	01:48	00:30	Continuing cal 20
VT9325-MB	T227077.D	10/07/17	02:47	01:29	Method Blank
VT9325-BS	T227078.D	10/07/17	03:18	02:00	Blank Spike
ZZZZZZ	T227080.D	10/07/17	04:18	03:00	(unrelated sample)
JC52488-2	T227081.D	10/07/17	04:48	03:30	(used for QC only; not part of job JC52477)
JC52488-3	T227082.D	10/07/17	05:18	04:00	(used for QC only; not part of job JC52477)
ZZZZZZ	T227083.D	10/07/17	05:48	04:30	(unrelated sample)
ZZZZZZ	T227084.D	10/07/17	06:18	05:00	(unrelated sample)
ZZZZZZ	T227085.D	10/07/17	06:48	05:30	(unrelated sample)
ZZZZZZ	T227086.D	10/07/17	07:18	06:00	(unrelated sample)
ZZZZZZ	T227087.D	10/07/17	07:48	06:30	(unrelated sample)
ZZZZZZ	T227088.D	10/07/17	08:18	07:00	(unrelated sample)
ZZZZZZ	T227089.D	10/07/17	08:48	07:30	(unrelated sample)
ZZZZZZ	T227090.D	10/07/17	09:18	08:00	(unrelated sample)
ZZZZZZ	T227090A.D	10/07/17	09:48	08:30	(unrelated sample)
ZZZZZZ	T227091.D	10/07/17	10:18	09:00	(unrelated sample)
ZZZZZZ	T227092.D	10/07/17	10:48	09:30	(unrelated sample)
JC52488-2MS	T227093.D	10/07/17	11:18	10:00	Matrix Spike
JC52488-3DUP	T227095.D	10/07/17	12:48	11:30	Duplicate
JC52477-10	T227096.D	10/07/17	13:18	12:00	TRIP BLANK
JC52477-8	T227097.D	10/07/17	13:48	12:30	W-6 OUT
JC52477-9	T227098.D	10/07/17	14:18	13:00	W-12 OUT

Internal Standard Area Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std:	VT9324-CC9306	**Injection Date:**	10/06/17
Lab File ID:	T227051.D	**Injection Time:**	12:28
Instrument ID:	GCMST	**Method:**	EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	130413	7.44	187658	9.47	275104	10.33	168208	16.08	263806	13.53
Upper Limit [a]	260826	7.94	375316	9.97	550208	10.83	336416	16.58	527612	14.03
Lower Limit [b]	65207	6.94	93829	8.97	137552	9.83	84104	15.58	131903	13.03

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VT9324-MB2	122755	7.44	189911	9.47	277431	10.33	178515	16.08	271697	13.53
ZZZZZZ	114293	7.44	179196	9.47	269274	10.33	168452	16.08	256831	13.53
VT9324-BS2	123002	7.45	182463	9.47	269145	10.33	167583	16.07	265845	13.53
JC52477-1	135032	7.44	249926	9.47	346130	10.33	221281	16.07	328823	13.53
JC52477-2	124903	7.43	228797	9.46	321445	10.33	211228	16.07	317103	13.53
JC52477-3	125592	7.43	225486	9.47	319285	10.32	211344	16.08	316778	13.53
JC52477-4	126825	7.44	211755	9.47	311227	10.33	207734	16.07	313529	13.53
JC52477-5	123188	7.42	205225	9.47	300710	10.33	192447	16.07	297665	13.53
JC52477-6	123802	7.44	202037	9.47	290111	10.33	187978	16.07	283721	13.53
JC52477-7	120258	7.44	194611	9.47	291418	10.33	196905	16.07	294881	13.53
JC52477-2MS	126176	7.44	188856	9.46	281181	10.33	176655	16.07	284356	13.53
JC52477-1DUP	127159	7.43	184729	9.47	279108	10.33	187465	16.07	289013	13.53
ZZZZZZ	123462	7.44	183629	9.47	277526	10.33	180895	16.07	278432	13.53
ZZZZZZ	117504	7.44	180651	9.47	273468	10.33	183118	16.07	278815	13.53

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std:	VT9325-CC9306	**Injection Date:**	10/07/17
Lab File ID:	T227075.D	**Injection Time:**	01:48
Instrument ID:	GCMST	**Method:**	EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	119322	7.44	187649	9.47	278044	10.32	169981	16.07	271113	13.53
Upper Limit [a]	238644	7.94	375298	9.97	556088	10.82	339962	16.57	542226	14.03
Lower Limit [b]	59661	6.94	93825	8.97	139022	9.82	84991	15.57	135557	13.03

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VT9325-MB	115762	7.43	176900	9.47	268433	10.33	169705	16.07	262524	13.53
VT9325-BS	120288	7.43	183352	9.47	275298	10.33	168749	16.07	267776	13.53
ZZZZZZ	115780	7.45	189303	9.47	283739	10.33	176231	16.07	275807	13.53
JC52488-2	112163	7.43	189557	9.46	283702	10.33	174998	16.07	274801	13.53
JC52488-3	114171	7.44	186392	9.47	281687	10.33	173609	16.07	277892	13.53
ZZZZZZ	104675	7.43	191199	9.47	292891	10.32	181278	16.07	287621	13.53
ZZZZZZ	119505	7.43	197022	9.47	296180	10.33	184896	16.07	288239	13.53
ZZZZZZ	115457	7.44	185607	9.46	277437	10.33	169305	16.07	265773	13.53
ZZZZZZ	122295	7.43	179964	9.47	266759	10.33	170367	16.07	263771	13.53
ZZZZZZ	125479	7.45	190806	9.47	286481	10.33	177611	16.07	283545	13.53
ZZZZZZ	121800	7.44	194312	9.47	295561	10.33	186721	16.07	292316	13.53
ZZZZZZ	114705	7.44	175649	9.47	265594	10.33	177584	16.07	272482	13.53
ZZZZZZ	117979	7.44	189311	9.47	290699	10.33	180433	16.07	285532	13.53
ZZZZZZ	93744	7.44	173305	9.47	259186	10.33	165444	16.07	256214	13.53
ZZZZZZ	97671	7.44	186542	9.47	279989	10.33	174234	16.07	273645	13.53
ZZZZZZ	113813	7.44	195152	9.47	301427	10.33	228036	16.07	307291	13.53
JC52488-2MS	124273	7.44	251753	9.47	366106	10.33	220505	16.08	357063	13.53
JC52488-3DUP	130314	7.44	224156	9.47	327985	10.33	201139	16.07	315006	13.53
JC52477-10	122323	7.43	199679	9.46	298313	10.33	191925	16.07	296577	13.53
JC52477-8	117744	7.43	182973	9.46	283084	10.33	180801	16.07	281428	13.53
JC52477-9	121153	7.44	183486	9.47	281420	10.33	191089	16.07	290262	13.53

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC52477-1	T227059.D	85	96	104	86
JC52477-2	T227060.D	87	94	101	88
JC52477-3	T227061.D	87	95	102	88
JC52477-4	T227062.D	88	93	100	90
JC52477-5	T227063.D	91	96	100	90
JC52477-6	T227064.D	91	97	97	89
JC52477-7	T227065.D	91	95	97	93
JC52477-8	T227097.D	94	97	99	96
JC52477-9	T227098.D	93	95	97	95
JC52477-10	T227096.D	92	96	98	92
JC52477-1DUP	T227068.D	92	95	98	92
JC52477-2MS	T227066.D	90	97	102	91
JC52488-2MS	T227093.D	90	99	103	88
JC52488-3DUP	T227095.D	91	98	101	92
VT9324-BS2	T227054.D	94	99	98	96
VT9324-MB2	T227052.D	95	100	96	95
VT9325-BS	T227078.D	92	100	99	93
VT9325-MB	T227077.D	93	98	99	95

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4 (SUR)	76-122%
S2 = Toluene-D8 (SUR)	80-120%
S3 = 4-Bromofluorobenzene (SUR)	80-120%
S4 = Dibromofluoromethane (S)	80-120%

Initial Calibration Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9306-ICC9306
Lab FileID: T226638.D

Response Factor Report GCMST

Method : C:\MSDCHEM\1\METHODS\MT9306.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

Calibration Files
5 =T226637.D 20 =T226638.D 50 =T226639.D 100 =T226640.D
200 =T226641.D 2 =T226636.D 1 =T226635.D 0.5 =T226633.D
0.2 =T226634.D =

Compound	5	20	50	100	200	2	1	0.5	0.2	Avg	%RSD
1) TERT BUTYL ALCOHOL-d9 ----------ISTD----------											
2) TERTIARY BUTYL ALCOHOL	1.242	1.115	1.134	1.179	1.180	1.278	1.211	1.397		1.217	7.41
3) 1,4-DIOXANE	0.086	0.072	0.078	0.088	0.095	0.063	0.076			0.080	13.53
4) PENTAFLUOROBENZENE ----------ISTD----------											
5) CHLORODIFLUOROMETHANE	1.105	1.047	1.153	1.208	1.124	0.975	1.142	1.267		1.127	8.00
6) DICHLORODIFLUOROMETHANE	0.970	0.930	1.048	1.070	0.971	0.743	0.862			0.942	11.88
7) FREON 143A	1.119	1.075	1.245	1.322	1.186	1.095	1.023			1.152	9.09
8) FREON 142B	0.864	0.862	0.943	1.077	1.007	0.859	0.837			0.921	9.90
9) CHLOROMETHANE	0.952	0.968	1.006	1.091	1.014	0.939	1.391			1.052	15.03
10) VINYL CHLORIDE	0.958	0.930	1.038	1.118	1.049	0.929	1.239	1.030		1.036	10.10
11) BROMOMETHANE	0.617	0.577	0.599	0.679	0.691	0.543	0.753			0.637	11.54
12) CHLOROETHANE	0.446	0.445	0.478	0.514	0.541	0.511	0.597			0.504	10.80
13) VINYL BROMIDE	0.436	0.405	0.443	0.471	0.453	0.414	0.500	0.459		0.448	6.80
14) TRICHLOROFLUOROMETHANE	0.883	0.846	0.944	1.003	0.951	0.755	0.908			0.899	9.01
15) PENTANE										0.000	-1.00
16) FREON 141B	0.824	0.754	0.817	0.902	0.864	0.761	0.832			0.822	6.42
17) ETHYL ETHER	0.255	0.227	0.232	0.243	0.233	0.215	0.235	0.310		0.244	11.97
18) 1,1-DICHLOROETHYLENE	0.752	0.705	0.754	0.786	0.734	0.663	0.897	0.709	0.751	0.750	8.74
19) FREON 113	0.420	0.428	0.486	0.496	0.449	0.341	0.408	0.361		0.424	12.87
20) ACROLEIN	0.087	0.075	0.073	0.082	0.077					0.079	6.90
21) ACETONE	0.035	0.030	0.032	0.034	0.032	0.033	0.033			0.033	5.28
22) CARBON DISULFIDE	1.741	1.616	1.684	1.749	1.593	1.556	1.893	1.784	1.911	1.725	7.29
23) IODOMETHANE											

0.883 0.824 0.860 0.894 0.842 0.841 1.057 0.885 0.771 0.873 9.01

24) ACETONITRILE
0.058 0.058 0.056 0.059 0.058 0.058 1.91

25) METHYL ACETATE
0.379 0.332 0.319 0.333 0.317 0.378 0.343 8.20

26) METHYLENE CHLORIDE
0.506 0.480 0.491 0.499 0.475 0.483 0.548 0.497 0.633 0.512 9.81

27) ACRYLONITRILE
0.168 0.155 0.146 0.164 0.152 0.132 0.153 8.54

28) METHYL TERT BUTYL ETHER
1.514 1.527 1.582 1.715 1.666 1.668 1.663 1.799 1.642 5.87

29) trans-1,2-DICHLOROETHYLENE
0.655 0.657 0.682 0.709 0.689 0.659 0.746 0.752 0.784 0.704 6.70

30) HEXANE *This compound does not meet Initial Calibration criteria
0.566 0.545 0.645 0.651 0.573 0.437 0.449 0.552 15.34

31) 1,1-DICHLOROETHANE
0.900 0.843 0.887 0.907 0.887 0.818 0.896 0.903 1.120 0.907 9.43

32) VINYL ACETATE
0.069 0.072 0.073 0.079 0.077 0.059 0.087 0.073 11.98

33) DI-ISOPROPYL ETHER
1.840 1.816 1.891 1.984 1.934 1.736 2.012 1.878 2.244 1.926 7.59

34) ETHYL TERT BUTYL ETHER
1.631 1.663 1.721 1.849 1.817 1.638 1.708 1.682 1.807 1.724 4.72

35) 2-BUTANONE
0.039 0.040 0.042 0.044 0.043 0.040 0.041 0.041 3.73

36) cis-1,2-DICHLOROETHYLENE
0.518 0.495 0.516 0.545 0.525 0.544 0.738 0.577 0.557 13.83

37) 2,2-DICHLOROPROPANE
0.918 0.848 0.903 0.961 0.937 0.849 1.137 0.936 10.47

38) ETHYL ACETATE
0.076 0.073 0.073 0.070 0.063 0.058 0.069 9.85

39) BROMOCHLOROMETHANE
0.235 0.235 0.249 0.260 0.249 0.274 0.249 0.316 0.258 10.25

40) TETRAHYDROFURAN
0.164 0.147 0.142 0.155 0.147 0.150 0.151 5.07

41) CHLOROFORM
0.887 0.816 0.837 0.879 0.861 0.843 0.889 0.904 0.795 0.857 4.30

42) t-BUTYL FORMATE *This compound does not meet Initial Calibration criteria
0.334 0.305 0.316 0.344 0.332 0.296 0.324 0.357 0.326 6.19

43) 1,1,1-TRICHLOROETHANE
0.888 0.862 0.940 0.988 0.963 0.833 1.075 0.836 0.859 0.916 8.92

44) CYCLOHEXANE
0.637 0.704 0.787 0.855 0.814 0.624 0.756 0.740 11.91

45) DIBROMOFLUOROMETHANE (SUR)
0.517 0.511 0.515 0.515 0.503 0.512 0.512 0.500 0.504 0.510 1.18

46) 1,1-DICHLOROPROPENE
0.600 0.591 0.633 0.667 0.646 0.581 0.659 0.655 0.693 0.636 5.99

47) CARBON TETRACHLORIDE
0.825 0.779 0.851 0.907 0.869 0.718 0.994 0.786 0.922 0.850 9.88

48) ISOPROPYL ACETATE
0.080 0.079 0.085 0.092 0.089 0.091 0.086 6.63

49) 1,4-DIFLUOROBENZENE ----------ISTD----------

50) 1,2-DICHLOROETHANE-d4
0.370 0.365 0.364 0.370 0.355 0.364 0.376 0.364 0.363 0.366 1.55

51) BENZENE
1.223 1.187 1.229 1.310 1.241 1.201 1.282 1.333 1.517 1.280 7.90

52) 1,2-DICHLOROETHANE
0.386 0.414 0.399 0.445 0.428 0.386 0.447 0.428 0.494 0.425 8.08

53) 2,2,4-TRIMETHYLPENTANE

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          0.970 1.032 1.202 1.341 1.271 0.783                    1.100   19.06
54)  TERT-AMYL METHYL ETHER
          1.068 1.061 1.060 1.175 1.125 1.042 1.232 1.350        1.139    9.49
55)  HEPTANE
          0.220 0.206 0.233 0.253 0.221 0.152 0.194 0.212        0.211   14.19
56)  TRICHLOROETHYLENE
          0.299 0.285 0.295 0.323 0.311 0.288 0.355 0.251 0.247  0.295   11.41
57)  1,2-DICHLOROPROPANE
          0.327 0.326 0.338 0.367 0.358 0.322 0.338 0.352 0.380  0.345    5.89
58)  DIBROMOMETHANE
          0.200 0.191 0.190 0.204 0.196 0.187 0.215 0.224 0.157  0.196    9.73
59)  METHYL METHACRYLATE
          0.070 0.060 0.065 0.072 0.069 0.074 0.060              0.067    8.33
60)  METHYLCYCLOHEXANE
          0.576 0.599 0.677 0.730 0.673                          0.651    9.62
61)  BROMODICHLOROMETHANE
          0.439 0.423 0.419 0.462 0.442 0.394 0.457 0.377 0.491  0.434    8.07
62)  2-CHLOROETHYL VINYL ETHER
          0.154 0.155 0.158 0.179 0.173 0.143 0.158 0.131 0.171  0.158    9.56
63)  EPICHLOROHYDRIN
          0.023 0.024 0.024 0.027 0.026 0.024 0.030              0.025   10.44
64)  cis-1,3-DICHLOROPROPENE
          0.488 0.466 0.486 0.534 0.521 0.459 0.516 0.468 0.660  0.511   12.06
65)  4-METHYL-2-PENTANONE
          0.104 0.107 0.107 0.123 0.116 0.100 0.101              0.108    7.76

66) I   CHLOROBENZENE-D5      ----------------ISTD---------------------
67)  TOLUENE-d8
          1.281 1.303 1.332 1.282 1.211 1.295 1.256 1.272 1.280  1.279    2.58
68)  TOLUENE
          0.777 0.737 0.784 0.830 0.767 0.714 0.824 0.823 0.890  0.794    6.77
69)  ETHYL METHACRYLATE
          0.357 0.373 0.381 0.415 0.395 0.310 0.353 0.367 0.372  0.369    7.87
70)  trans-1,3-DICHLOROPROPENE
          0.463 0.464 0.466 0.498 0.474 0.458 0.437 0.565 0.492  0.480    7.68
71)  1,1,2-TRICHLOROETHANE
          0.230 0.225 0.231 0.238 0.222 0.229 0.222 0.279        0.235    7.90
72)  TETRACHLOROETHYLENE
          0.272 0.264 0.274 0.293 0.274 0.251 0.279 0.295 0.361  0.285   11.05
73)  2-HEXANONE
          0.102 0.098 0.102 0.113 0.105 0.099 0.095 0.105 0.118  0.104    7.19
74)  1,3-DICHLOROPROPANE
          0.442 0.439 0.446 0.479 0.452 0.432 0.473 0.509 0.594  0.474   10.85
75)  BUTYL ACETATE
          0.182 0.186 0.185 0.197 0.185 0.190 0.200 0.225 0.250  0.200   11.40
76)  3,3-DIMETHYL-1-BUTANOL
          0.034 0.037 0.039 0.044 0.041 0.034 0.035 0.037 0.045  0.039   10.36
77)  DIBROMOCHLOROMETHANE
          0.352 0.333 0.342 0.367 0.346 0.316 0.368 0.312 0.455  0.355   11.92
78)  ETHYLENE DIBROMIDE
          0.264 0.262 0.272 0.286 0.274 0.264 0.294 0.253 0.265  0.270    4.69
79)  CHLOROBENZENE
          0.923 0.851 0.887 0.935 0.896 0.809 0.970 0.886 1.126  0.920    9.80
80)  1,1,1,2-TETRACHLOROETHANE
          0.431 0.396 0.425 0.442 0.427 0.386 0.444 0.432 0.527  0.434    9.15
81)  ETHYLBENZENE
          1.535 1.477 1.550 1.632 1.535 1.394 1.602 1.576 1.713  1.557    5.84
82)  m,p-XYLENE
          0.548 0.547 0.583 0.620 0.602 0.522 0.557 0.645        0.578    7.22
83)  o-XYLENE
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          1.353 1.290 1.371 1.458 1.396 1.206 1.321 1.448 1.631   1.386    8.71
 84)  STYRENE
          0.980 0.963 0.986 1.071 1.059 0.907 0.990 1.019 1.014   0.999    4.97
 85)  n-AMYL ACETATE
                                                                  0.000   -1.00
 86)  BROMOFORM
          0.228 0.226 0.229 0.245 0.238 0.242 0.212 0.161         0.223   12.18
 87)  CUMENE
          1.675 1.635 1.789 1.881 1.707 1.484 1.660 1.737 1.752   1.702    6.49
 88)  cis-1,4-DICHLORO-2-BUTENE
          0.116 0.125 0.116 0.134 0.130 0.098 0.137               0.122   11.10

 89)     1,4-DICHLOROBENZENE-D ----------------ISTD---------------------
 90)  4-BROMOFLUOROBENZENE
          0.693 0.690 0.736 0.756 0.730 0.701 0.724 0.719 0.706   0.717    3.03
 91)  1,1,2,2-TETRACHLOROETHANE
          0.708 0.644 0.666 0.716 0.657 0.646 0.640 0.849 0.802   0.703   10.71
 92)  trans-1,4-DICHLORO-2-BUTENE
          0.153 0.150 0.157 0.171 0.163 0.163                     0.160    4.77
 93)  1,2,3-TRICHLOROPROPANE
          0.162 0.165 0.171 0.179 0.166 0.148 0.226               0.174   14.29
 94)  N-PROPYLBENZENE
          3.313 3.057 3.399 3.585 3.248 2.886 3.552 3.318 4.012   3.374    9.63
 95)  BROMOBENZENE
          0.701 0.670 0.721 0.775 0.748 0.625 0.789 0.671 0.896   0.733   11.05
 96)  2-CHLOROTOLUENE
          0.664 0.653 0.724 0.767 0.768 0.645 0.684 0.666 0.913   0.720   11.93
 97)  4-CHLOROTOLUENE
          1.940 1.801 1.927 2.075 1.969 1.805 2.111 2.031 2.437   2.011    9.58
 98)  1,3,5-TRIMETHYLBENZENE
          2.444 2.389 2.710 2.885 2.751 2.207 2.518 2.535 2.587   2.558    7.99
 99)  TERT-BUTYLBENZENE
          2.082 2.048 2.433 2.583 2.388 1.801 2.186 1.952 2.465   2.215   11.96
100)  1,2,4-TRIMETHYLBENZENE
          2.545 2.445 2.695 2.876 2.675 2.286 2.530 2.187 2.492   2.526    8.33
101)  SEC-BUTYLBENZENE
          3.343 3.268 3.797 4.002 3.574 2.964 3.467 2.911 3.225   3.394   10.60
102)  P-ISOPROPYLTOLUENE
          2.833 2.674 2.991 3.205 2.967 2.528 3.075 2.870 3.220   2.929    7.88
103)  1,3-DICHLOROBENZENE
          1.469 1.352 1.418 1.533 1.463 1.379 1.551 1.462 1.918   1.505   11.14
104)  1,4-DICHLOROBENZENE
          1.510 1.396 1.452 1.546 1.451 1.427 1.625 1.638 1.689   1.526    6.85
105)  N-BUTYLBENZENE
          0.686 0.672 0.726 0.782 0.753 0.652 0.823 0.760         0.732    8.01
106)  1,2-DICHLOROBENZENE
          1.570 1.447 1.509 1.600 1.517 1.434 1.592 1.532 1.687   1.543    5.14
107)  HEXACHLOROETHANE
          0.329 0.309 0.362 0.403 0.383 0.306 0.390 0.339 0.366   0.354    9.97
108)  1,2-DIBROMO-3-CHLOROPROPANE
          0.173 0.167 0.157 0.175 0.170 0.161 0.152               0.165    5.27
109)  HEXACHLOROBUTADIENE
          0.671 0.657 0.741 0.794 0.783 0.643 0.866 0.832 0.816   0.756   10.85
110)  1,3,5-TRICHLOROBENZENE
          1.490 1.418 1.464 1.601 1.533 1.512 1.699 1.482 1.731   1.548    6.94
111)  NITROBENZENE *This compound does not meet Initial Calibration criteria
          0.087 0.047 0.048 0.053 0.055                           0.058   28.54
112)  1,2,4-TRICHLOROBENZENE
          1.452 1.378 1.406 1.541 1.472 1.220 1.344 1.346 1.513   1.408    7.05
113)  1,2,3-TRICHLOROBENZENE
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           1.275 1.303 1.352 1.480 1.404 1.171 1.186 1.460 1.498   1.348    9.10
114)  NAPHTHALENE
           2.559 2.680 2.805 3.039 2.783 2.422 2.425 2.743 2.527   2.665    7.59
115)  INDANE
                                                                   0.000   -1.00
116)  ETHYLENIMINE
                                                                   0.000   -1.00
117)  BIS(CHLOROMETHYL)ETHER
                                                                   0.000   -1.00
 ------------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MT9306.M          Mon Oct 02 15:26:58 2017   MSDT
```

Initial Calibration Verification

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9306-ICV9306
Lab FileID: T226644.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T226644.D Vial: 13
Acq On : 20 Sep 2017 11:39 pm Operator: payalr
Sample : icv9306-20 Inst : GCMST
Misc : MS20077,VT9306,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9306.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Sep 22 10:22:23 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	108	0.00	7.44
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	102	0.00	9.47
24		ACETONITRILE	0.058	0.059	-1.7	104	0.00	7.29
45	S	DIBROMOFLUOROMETHANE (SUR	0.510	0.492	3.5	98	0.00	9.52
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	99	0.00	10.33
50	S	1,2-DICHLOROETHANE-d4	0.366	0.370	-1.1	100	0.00	9.92
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	102	0.00	13.54
67	S	TOLUENE-d8	1.279	1.231	3.8	97	0.00	11.95
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	107	0.00	16.08
90	S	4-BROMOFLUOROBENZENE	0.717	0.708	1.3	110	0.00	14.79

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T226638.D MT9306.M Fri Sep 22 10:30:24 2017 MSDT

Initial Calibration Verification

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9306-ICV9306
Lab FileID: T226645.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T226645.D Vial: 14
Acq On : 21 Sep 2017 12:09 am Operator: payalr
Sample : icv9306-20 Inst : GCMST
Misc : MS20077,VT9306,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9306.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Mon Oct 02 15:23:59 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	109	0.00	7.44
2	M	TERTIARY BUTYL ALCOHOL	1.217	1.185	2.6	115	0.00	7.54
3	M	1,4-DIOXANE	0.080	0.083	-3.8	125	0.00	11.02
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	103	0.00	9.48
5		CHLORODIFLUOROMETHANE	1.127	0.993	11.9	98	-0.02	4.36
6	M	DICHLORODIFLUOROMETHANE	0.942	1.016	-7.9	113	-0.02	4.36
7	M	FREON 143A	1.152	0.657	43.0#	63	-0.01	4.02
8	M	FREON 142B	0.921	0.838	9.0	100	0.00	4.62
9	M	CHLOROMETHANE	1.052	1.039	1.2	110	0.00	4.69
10	M	VINYL CHLORIDE	1.036	0.974	6.0	108	0.00	4.95
11	M	BROMOMETHANE	0.637	0.582	8.6	104	0.00	5.57
12	M	CHLOROETHANE	0.504	0.457	9.3	106	0.00	5.74
13		VINYL BROMIDE	0.448	0.483	-7.8	123	0.00	6.05
14	M	TRICHLOROFLUOROMETHANE	0.899	0.798	11.2	97	-0.01	6.14
15	M	PENTANE		----------NA----------				
16	M	FREON 141B	0.822	0.689	16.2	94	0.00	6.54
17		ETHYL ETHER	0.244	0.237	2.9	107	0.00	6.52
18	M	1,1-DICHLOROETHYLENE	0.750	0.661	11.9	97	0.00	6.91
19	M	FREON 113	0.424	0.506	-19.3	122	0.00	6.88
20		ACROLEIN	0.079	0.070	11.4	96	0.00	6.73
21	M	ACETONE	0.033	0.029	12.1	102	0.00	6.91
22	M	CARBON DISULFIDE	1.725	1.532	11.2	98	0.00	7.28
23	M	IODOMETHANE	0.873	0.806	7.7	101	0.00	7.16
24		ACETONITRILE	0.058	0.054	6.9	96	0.00	7.28
25		METHYL ACETATE	0.343	0.305	11.1	95	0.00	7.33
26	M	METHYLENE CHLORIDE	0.512	0.468	8.6	100	0.00	7.51
27	M	ACRYLONITRILE	0.153	0.173	-13.1	115	0.00	7.79
28	M	METHYL TERT BUTYL ETHER	1.642	1.594	2.9	107	0.00	7.82
29	M	trans-1,2-DICHLOROETHYLEN	0.704	0.640	9.1	100	0.00	7.85
30	M	HEXANE	0.552	0.352	36.2#	67	0.00	8.15
31	M	1,1-DICHLOROETHANE	0.907	0.842	7.2	103	0.00	8.36
32	M	VINYL ACETATE	0.073	0.078	-6.8	112	0.00	8.33
33	M	DI-ISOPROPYL ETHER	1.926	1.806	6.2	102	0.00	8.35
34	M	ETHYL TERT BUTYL ETHER	1.724	1.636	5.1	101	0.00	8.76
35	M	2-BUTANONE	0.041	0.040	2.4	102	0.00	8.97
36	M	cis-1,2-DICHLOROETHYLENE	0.557	0.515	7.5	107	0.00	9.02
37	M	2,2-DICHLOROPROPANE	0.936	0.806	13.9	98	0.00	9.04
38	M	ETHYL ACETATE	0.069	0.060	13.0	85	0.00	8.98
39		BROMOCHLOROMETHANE	0.258	0.244	5.4	107	0.00	9.30
40	M	TETRAHYDROFURAN	0.151	0.150	0.7	105	0.00	9.34
41	M	CHLOROFORM	0.857	0.808	5.7	102	0.00	9.33

Initial Calibration Verification

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9306-ICV9306
Lab FileID: T226645.D

42		t-BUTYL FORMATE	0.326	0.203	37.7#	68	0.00	9.39
43	M	1,1,1-TRICHLOROETHANE	0.916	0.867	5.3	104	0.00	9.61
44		CYCLOHEXANE	0.740	0.696	5.9	102	0.00	9.70
45	S	DIBROMOFLUOROMETHANE (SUR	0.510	0.502	1.6	101	0.00	9.52
46		1,1-DICHLOROPROPENE	0.636	0.585	8.0	102	0.00	9.77
47		CARBON TETRACHLORIDE	0.850	0.765	10.0	101	0.00	9.80
48		ISOPROPYL ACETATE	0.086	0.084	2.3	110	0.00	9.91
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	106	0.00	10.33
50	S	1,2-DICHLOROETHANE-d4	0.366	0.353	3.6	102	0.00	9.91
51	M	BENZENE	1.280	1.166	8.9	104	0.00	10.01
52	M	1,2-DICHLOROETHANE	0.425	0.403	5.2	103	0.00	10.00
53		2,2,4-TRIMETHYLPENTANE	1.100	0.981	10.8	100	0.00	10.03
54	M	TERT-AMYL METHYL ETHER	1.139	1.041	8.6	104	0.00	10.03
55	M	HEPTANE	0.211	0.217	-2.8	111	0.00	10.17
56	M	TRICHLOROETHYLENE	0.295	0.300	-1.7	111	0.00	10.67
57	M	1,2-DICHLOROPROPANE	0.345	0.337	2.3	110	0.00	10.92
58	M	DIBROMOMETHANE	0.196	0.192	2.0	107	0.00	11.06
59		METHYL METHACRYLATE	0.067	0.068	-1.5	118	0.00	10.90
60		METHYLCYCLOHEXANE	0.651	0.498	23.5	88	0.00	10.91
61	M	BROMODICHLOROMETHANE	0.434	0.432	0.5	108	0.00	11.18
62	M	2-CHLOROETHYL VINYL ETHER	0.158	0.159	-0.6	109	0.00	11.40
63	M	EPICHLOROHYDRIN	0.025	0.027	-8.0	120	0.00	11.53
64	M	cis-1,3-DICHLOROPROPENE	0.511	0.500	2.2	114	0.00	11.64
65	M	4-METHYL-2-PENTANONE	0.108	0.112	-3.7	110	0.00	11.74
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	115	0.00	13.54
67	S	TOLUENE-d8	1.279	1.246	2.6	110	0.00	11.95
68		TOLUENE	0.794	0.740	6.8	115	0.00	12.03
69		ETHYL METHACRYLATE	0.369	0.366	0.8	113	0.00	12.19
70		trans-1,3-DICHLOROPROPENE	0.480	0.471	1.9	117	0.00	12.19
71		1,1,2-TRICHLOROETHANE	0.235	0.238	-1.3	121	0.00	12.42
72	M	TETRACHLOROETHYLENE	0.285	0.269	5.6	117	0.00	12.63
73	M	2-HEXANONE	0.104	0.099	4.8	116	0.00	12.61
74		1,3-DICHLOROPROPANE	0.474	0.447	5.7	117	0.00	12.62
75	M	BUTYL ACETATE	0.200	0.185	7.5	114	0.00	12.68
76		3,3-DIMETHYL-1-BUTANOL	0.039	0.036	7.7	109	0.00	12.77
77	M	DIBROMOCHLOROMETHANE	0.355	0.350	1.4	120	0.00	12.89
78	M	ETHYLENE DIBROMIDE	0.270	0.279	-3.3	122	0.00	13.07
79	M	CHLOROBENZENE	0.920	0.896	2.6	121	0.00	13.57
80	M	1,1,1,2-TETRACHLOROETHANE	0.434	0.396	8.8	115	0.00	13.63
81	M	ETHYLBENZENE	1.557	1.510	3.0	117	0.00	13.63
82	M	m,p-XYLENE	0.578	0.561	2.9	117	0.00	13.75
83	M	o-XYLENE	1.386	1.298	6.3	115	0.00	14.21
84	M	STYRENE	0.999	0.966	3.3	115	0.00	14.21
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.223	0.229	-2.7	116	0.00	14.48
87	M	CUMENE	1.702	1.647	3.2	115	0.00	14.58
88		cis-1,4-DICHLORO-2-BUTENE	0.122	0.112	8.2	102	0.00	14.62
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	107	0.00	16.08
90	S	4-BROMOFLUOROBENZENE	0.717	0.749	-4.5	116	0.00	14.79
91		1,1,2,2-TETRACHLOROETHANE	0.703	0.708	-0.7	118	0.00	14.88
92		trans-1,4-DICHLORO-2-BUTE	0.160	0.170	-6.3	121	0.00	14.93
93		1,2,3-TRICHLOROPROPANE	0.174	0.178	-2.3	116	0.00	14.97
94		N-PROPYLBENZENE	3.374	3.313	1.8	116	0.00	15.03
95		BROMOBENZENE	0.733	0.720	1.8	115	0.00	15.01
96		2-CHLOROTOLUENE	0.720	0.723	-0.4	119	0.00	15.19
97		4-CHLOROTOLUENE	2.011	1.979	1.6	118	0.00	15.29
98	M	1,3,5-TRIMETHYLBENZENE	2.558	2.566	-0.3	115	0.00	15.19

Initial Calibration Verification

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9306-ICV9306
Lab FileID: T226645.D

99		TERT-BUTYLBENZENE	2.215	2.215	0.0	116	0.00	15.59
100	M	1,2,4-TRIMETHYLBENZENE	2.526	2.709	-7.2	119	0.00	15.63
101		SEC-BUTYLBENZENE	3.394	3.440	-1.4	113	0.00	15.82
102		P-ISOPROPYLTOLUENE	2.929	2.946	-0.6	118	0.00	15.95
103	M	1,3-DICHLOROBENZENE	1.505	1.468	2.5	116	0.00	16.02
104	M	1,4-DICHLOROBENZENE	1.526	1.487	2.6	114	0.00	16.11
105		N-BUTYLBENZENE	0.732	0.712	2.7	114	0.00	16.41
106	M	1,2-DICHLOROBENZENE	1.543	1.561	-1.2	116	0.00	16.54
107		HEXACHLOROETHANE	0.354	0.325	8.2	113	0.00	16.84
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.165	0.170	-3.0	109	0.00	17.37
109		HEXACHLOROBUTADIENE	0.756	0.699	7.5	114	0.00	18.42
110		1,3,5-TRICHLOROBENZENE	1.548	1.527	1.4	115	0.00	17.58
111		NITROBENZENE	0.058	0.043	25.9	97	0.00	17.59
112	M	1,2,4-TRICHLOROBENZENE	1.408	1.377	2.2	107	0.00	18.27
113		1,2,3-TRICHLOROBENZENE	1.348	1.326	1.6	109	0.00	18.86
114	M	NAPHTHALENE	2.665	2.694	-1.1	108	0.00	18.59
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T226638.D MT9306.M Mon Oct 02 15:24:55 2017 MSDT

6.8.3

6

Initial Calibration Verification

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9307-ICV9306
Lab FileID: T226651.D

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T226651.D Vial: 6
Acq On : 21 Sep 2017 2:25 pm Operator: payalr
Sample : icv9306-20 Inst : GCMST
Misc : MS20077,VT9307,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDChem\1\METHODS\MT9306.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Sep 22 10:22:23 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	105	0.00	7.44
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	104	0.00	9.47
7	M	FREON 143A	1.152	0.914	20.7	88	0.00	4.04
45	S	DIBROMOFLUOROMETHANE (SUR	0.510	0.502	1.6	102	0.00	9.52
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	103	0.00	10.33
50	S	1,2-DICHLOROETHANE-d4	0.366	0.375	-2.5	105	0.00	9.92
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	104	0.00	13.53
67	S	TOLUENE-d8	1.279	1.293	-1.1	104	0.00	11.96
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	107	0.00	16.08
90	S	4-BROMOFLUOROBENZENE	0.717	0.718	-0.1	112	0.00	14.79

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T226638.D MT9306.M Fri Sep 22 10:32:21 2017 MSDT

Continuing Calibration Summary

Job Number: JC52477 **Sample:** VT9324-CC9306
Account: UTC United Technologies Corporation **Lab FileID:** T227051.D
Project: SECORINI: Zanesville OH, Monthly

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\T\vt9324-2part\t227051.d Vial: 2
Acq On : 6 Oct 2017 12:28 pm Operator: payalr
Sample : cc9306-20 Inst : GCMST
Misc : MS20872,VT9324,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9306.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Wed Sep 27 11:30:04 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	158	0.00	7.44
2	M	TERTIARY BUTYL ALCOHOL	1.217	1.050	13.7	148	0.00	7.53
3	M	1,4-DIOXANE	0.080	0.084	-5.0	184	0.00	11.01
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	120	0.00	9.47
5		CHLORODIFLUOROMETHANE	1.127	1.204	-6.8	138	0.00	4.38
6	M	DICHLORODIFLUOROMETHANE	0.942	0.704	25.3	90	0.00	4.39
7	M	FREON 143A	1.152	1.052	8.7	117	0.00	4.04
8	M	FREON 142B	0.921	0.688	25.3	95	0.00	4.63
9	M	CHLOROMETHANE	1.052	0.981	6.7	121	0.00	4.70
10	M	VINYL CHLORIDE	1.036	0.920	11.2	118	0.00	4.95
11	M	BROMOMETHANE	0.637	0.570	10.5	118	0.00	5.57
12	M	CHLOROETHANE	0.504	0.506	-0.4	136	0.00	5.74
13		VINYL BROMIDE	0.448	0.467	-4.2	138	0.00	6.05
14	M	TRICHLOROFLUOROMETHANE	0.899	0.701	22.0	99	0.00	6.16
15	M	PENTANE		----------NA----------				
16	M	FREON 141B	0.822	0.698	15.1	111	0.00	6.54
17		ETHYL ETHER	0.244	0.251	-2.9	132	0.00	6.51
18	M	1,1-DICHLOROETHYLENE	0.750	0.815	-8.7	138	0.00	6.91
19	M	FREON 113	0.424	0.450	-6.1	126	0.00	6.89
20		ACROLEIN	0.079	0.085	-7.6	135	0.00	6.73
21	M	ACETONE	0.033	0.039	-18.2	159	0.00	6.92
22	M	CARBON DISULFIDE	1.725	1.925	-11.6	142	0.00	7.29
23	M	IODOMETHANE	0.873	0.883	-1.1	128	0.00	7.16
24		ACETONITRILE	0.058	0.075	-29.3	157	0.00	7.30
25		METHYL ACETATE	0.343	0.359	-4.7	129	0.00	7.33
26	M	METHYLENE CHLORIDE	0.512	0.543	-6.1	135	0.00	7.51
27	M	ACRYLONITRILE	0.153	0.181	-18.3	140	0.00	7.79
28	M	METHYL TERT BUTYL ETHER	1.642	1.647	-0.3	129	0.00	7.83
29	M	trans-1,2-DICHLOROETHYLEN	0.704	0.768	-9.1	140	0.00	7.86
30	M	HEXANE	0.552	0.677	-22.6	149	0.00	8.15
31	M	1,1-DICHLOROETHANE	0.907	0.933	-2.9	132	0.00	8.36
32	M	VINYL ACETATE	0.073	0.067	8.2	112	0.00	8.33
33	M	DI-ISOPROPYL ETHER	1.926	2.087	-8.4	137	0.00	8.35
34	M	ETHYL TERT BUTYL ETHER	1.724	1.853	-7.5	133	0.00	8.76
35	M	2-BUTANONE	0.041	0.042	-2.4	125	0.00	8.97
36	M	cis-1,2-DICHLOROETHYLENE	0.557	0.529	5.0	128	0.00	9.01
37	M	2,2-DICHLOROPROPANE	0.936	0.905	3.3	128	0.00	9.04
38	M	ETHYL ACETATE	0.069	0.066	4.3	109	-0.02	8.98
39		BROMOCHLOROMETHANE	0.258	0.238	7.8	121	0.00	9.29
40	M	TETRAHYDROFURAN	0.151	0.163	-7.9	132	0.00	9.34
41	M	CHLOROFORM	0.857	0.818	4.6	120	0.00	9.34

Continuing Calibration Summary

Job Number: JC52477 **Sample:** VT9324-CC9306
Account: UTC United Technologies Corporation **Lab FileID:** T227051.D
Project: SECORINI: Zanesville OH, Monthly

42		t-BUTYL FORMATE	0.326	0.287	12.0	112	0.00	9.39
43	M	1,1,1-TRICHLOROETHANE	0.916	0.890	2.8	123	0.00	9.61
44		CYCLOHEXANE	0.740	0.783	-5.8	133	0.00	9.70
45	S	DIBROMOFLUOROMETHANE (SUR	0.510	0.487	4.5	114	0.00	9.51
46		1,1-DICHLOROPROPENE	0.636	0.605	4.9	122	-0.01	9.76
47		CARBON TETRACHLORIDE	0.850	0.781	8.1	120	0.00	9.80
48		ISOPROPYL ACETATE	0.086	0.088	-2.3	133	0.00	9.90
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	116	0.00	10.33
50	S	1,2-DICHLOROETHANE-d4	0.366	0.343	6.3	109	0.00	9.91
51	M	BENZENE	1.280	1.294	-1.1	127	0.00	10.01
52	M	1,2-DICHLOROETHANE	0.425	0.378	11.1	106	0.00	10.00
53		2,2,4-TRIMETHYLPENTANE	1.100	1.351	-22.8	152	0.00	10.03
54	M	TERT-AMYL METHYL ETHER	1.139	1.168	-2.5	128	0.00	10.03
55	M	HEPTANE	0.211	0.254	-20.4	143	0.00	10.17
56	M	TRICHLOROETHYLENE	0.295	0.296	-0.3	120	0.00	10.66
57	M	1,2-DICHLOROPROPANE	0.345	0.367	-6.4	131	0.00	10.92
58	M	DIBROMOMETHANE	0.196	0.174	11.2	106	0.00	11.06
59		METHYL METHACRYLATE	0.067	0.064	4.5	123	0.00	10.89
60		METHYLCYCLOHEXANE	0.651	0.729	-12.0	141	0.00	10.91
61	M	BROMODICHLOROMETHANE	0.434	0.395	9.0	108	0.00	11.17
62	M	2-CHLOROETHYL VINYL ETHER	0.158	0.187	-18.4	140	0.00	11.40
63	M	EPICHLOROHYDRIN	0.025	0.027	-8.0	132	0.00	11.52
64	M	cis-1,3-DICHLOROPROPENE	0.511	0.498	2.5	124	0.00	11.63
65	M	4-METHYL-2-PENTANONE	0.108	0.122	-13.0	131	0.00	11.73
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	122	0.00	13.53
67	S	TOLUENE-d8	1.279	1.289	-0.8	121	0.00	11.95
68		TOLUENE	0.794	0.774	2.5	128	0.00	12.02
69		ETHYL METHACRYLATE	0.369	0.403	-9.2	132	0.00	12.19
70		trans-1,3-DICHLOROPROPENE	0.480	0.449	6.5	118	0.00	12.19
71		1,1,2-TRICHLOROETHANE	0.235	0.229	2.6	124	0.00	12.42
72	M	TETRACHLOROETHYLENE	0.285	0.254	10.9	117	0.00	12.63
73	M	2-HEXANONE	0.104	0.110	-5.8	137	0.00	12.60
74		1,3-DICHLOROPROPANE	0.474	0.455	4.0	127	0.00	12.61
75	M	BUTYL ACETATE	0.200	0.216	-8.0	141	0.00	12.68
76		3,3-DIMETHYL-1-BUTANOL	0.039	0.041	-5.1	134	0.00	12.77
77	M	DIBROMOCHLOROMETHANE	0.355	0.310	12.7	113	0.00	12.89
78	M	ETHYLENE DIBROMIDE	0.270	0.268	0.7	125	0.00	13.06
79	M	CHLOROBENZENE	0.920	0.883	4.0	127	0.00	13.57
80	M	1,1,1,2-TETRACHLOROETHANE	0.434	0.393	9.4	121	0.00	13.62
81	M	ETHYLBENZENE	1.557	1.586	-1.9	131	0.00	13.63
82	M	m,p-XYLENE	0.578	0.591	-2.2	132	0.00	13.74
83	M	o-XYLENE	1.386	1.385	0.1	131	0.00	14.20
84	M	STYRENE	0.999	1.000	-0.1	127	0.00	14.20
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.223	0.224	-0.4	121	0.00	14.48
87	M	CUMENE	1.702	1.786	-4.9	133	0.00	14.57
88		cis-1,4-DICHLORO-2-BUTENE	0.122	0.115	5.7	112	0.00	14.63
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	128	0.00	16.08
90	S	4-BROMOFLUOROBENZENE	0.717	0.719	-0.3	133	0.00	14.78
91		1,1,2,2-TETRACHLOROETHANE	0.703	0.678	3.6	134	0.00	14.87
92		trans-1,4-DICHLORO-2-BUTE	0.160	0.148	7.5	125	0.00	14.93
93		1,2,3-TRICHLOROPROPANE	0.174	0.158	9.2	122	0.00	14.97
94		N-PROPYLBENZENE	3.374	3.321	1.6	139	0.00	15.02
95		BROMOBENZENE	0.733	0.663	9.5	126	0.00	15.01
96		2-CHLOROTOLUENE	0.720	0.675	6.2	132	0.00	15.18
97		4-CHLOROTOLUENE	2.011	1.875	6.8	133	0.00	15.29
98	M	1,3,5-TRIMETHYLBENZENE	2.558	2.495	2.5	133	0.00	15.19

Continuing Calibration Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9324-CC9306
Lab FileID: T227051.D

99		TERT-BUTYLBENZENE	2.215	2.074	6.4	129	0.00	15.58
100	M	1,2,4-TRIMETHYLBENZENE	2.526	2.559	-1.3	134	0.00	15.63
101		SEC-BUTYLBENZENE	3.394	3.399	-0.1	133	0.00	15.82
102		P-ISOPROPYLTOLUENE	2.929	2.863	2.3	137	0.00	15.95
103	M	1,3-DICHLOROBENZENE	1.505	1.431	4.9	135	0.00	16.01
104	M	1,4-DICHLOROBENZENE	1.526	1.445	5.3	132	0.00	16.10
105		N-BUTYLBENZENE	0.732	0.747	-2.0	142	0.00	16.40
106	M	1,2-DICHLOROBENZENE	1.543	1.501	2.7	133	0.00	16.54
107		HEXACHLOROETHANE	0.354	0.316	10.7	131	0.00	16.83
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.165	0.181	-9.7	139	0.00	17.37
109		HEXACHLOROBUTADIENE	0.756	0.730	3.4	142	0.00	18.41
110		1,3,5-TRICHLOROBENZENE	1.548	1.630	-5.3	147	0.00	17.58
111		NITROBENZENE	0.056	0.061	-8.9	165	0.00	17.59
112	M	1,2,4-TRICHLOROBENZENE	1.408	1.577	-12.0	146	0.00	18.27
113		1,2,3-TRICHLOROBENZENE	1.348	1.467	-8.8	144	0.00	18.86
114	M	NAPHTHALENE	2.665	3.052	-14.5	145	0.00	18.59
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T226638.D MT9306.M Mon Oct 09 11:57:09 2017 11

6.8.5

6

SGS ACCUTEST
JC52477

Continuing Calibration Summary

Job Number: JC52477 **Sample:** VT9325-CC9306
Account: UTC United Technologies Corporation **Lab FileID:** T227075.D
Project: SECORINI: Zanesville OH, Monthly

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\T\vt9325part\T227075.D Vial: 26
Acq On : 7 Oct 2017 1:48 am Operator: payalr
Sample : cc9306-20 Inst : GCMST
Misc : MS20936,VT9325,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9306.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Wed Sep 27 11:30:04 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	144	0.00	7.44
2	M	TERTIARY BUTYL ALCOHOL	1.217	1.206	0.9	156	0.00	7.55
3	M	1,4-DIOXANE	0.080	0.096	-20.0	194	0.00	11.01
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	120	0.00	9.47
5		CHLORODIFLUOROMETHANE	1.127	1.129	-0.2	129	-0.01	4.37
6	M	DICHLORODIFLUOROMETHANE	0.942	0.986	-4.7	127	0.00	4.37
7	M	FREON 143A	1.152	1.063	7.7	118	0.00	4.02
8	M	FREON 142B	0.921	0.680	26.2	94	-0.01	4.62
9	M	CHLOROMETHANE	1.052	0.894	15.0	110	0.00	4.70
10	M	VINYL CHLORIDE	1.036	0.904	12.7	116	0.00	4.94
11	M	BROMOMETHANE	0.637	0.539	15.4	112	0.00	5.57
12	M	CHLOROETHANE	0.504	0.479	5.0	129	0.00	5.73
13		VINYL BROMIDE	0.448	0.435	2.9	128	0.00	6.05
14	M	TRICHLOROFLUOROMETHANE	0.899	0.830	7.7	117	-0.01	6.15
15	M	PENTANE		----------NA----------				
16	M	FREON 141B	0.822	0.696	15.3	110	0.00	6.53
17		ETHYL ETHER	0.244	0.244	0.0	128	0.00	6.51
18	M	1,1-DICHLOROETHYLENE	0.750	0.761	-1.5	129	0.00	6.90
19	M	FREON 113	0.424	0.449	-5.9	125	0.00	6.89
20		ACROLEIN	0.079	0.081	-2.5	129	-0.01	6.72
21	M	ACETONE	0.033	0.039	-18.2	158	0.00	6.91
22	M	CARBON DISULFIDE	1.725	1.768	-2.5	131	0.00	7.28
23	M	IODOMETHANE	0.873	0.830	4.9	120	0.00	7.16
24		ACETONITRILE	0.058	0.074	-27.6	153	0.00	7.30
25		METHYL ACETATE	0.343	0.340	0.9	123	-0.01	7.32
26	M	METHYLENE CHLORIDE	0.512	0.513	-0.2	128	0.00	7.51
27	M	ACRYLONITRILE	0.153	0.172	-12.4	133	0.00	7.78
28	M	METHYL TERT BUTYL ETHER	1.642	1.615	1.6	126	0.00	7.82
29	M	trans-1,2-DICHLOROETHYLEN	0.704	0.734	-4.3	133	0.00	7.86
30	M	HEXANE	0.552	0.669	-21.2	147	0.00	8.15
31	M	1,1-DICHLOROETHANE	0.907	0.887	2.2	126	0.00	8.36
32	M	VINYL ACETATE	0.073	0.070	4.1	117	0.00	8.33
33	M	DI-ISOPROPYL ETHER	1.926	2.029	-5.3	134	0.00	8.35
34	M	ETHYL TERT BUTYL ETHER	1.724	1.818	-5.5	131	0.00	8.76
35	M	2-BUTANONE	0.041	0.045	-9.8	133	0.00	8.96
36	M	cis-1,2-DICHLOROETHYLENE	0.557	0.509	8.6	123	0.00	9.02
37	M	2,2-DICHLOROPROPANE	0.936	0.836	10.7	118	0.00	9.04
38	M	ETHYL ACETATE	0.069	0.076	-10.1	125	-0.01	8.98
39		BROMOCHLOROMETHANE	0.258	0.233	9.7	118	0.00	9.29
40	M	TETRAHYDROFURAN	0.151	0.156	-3.3	127	-0.01	9.34
41	M	CHLOROFORM	0.857	0.782	8.8	115	0.00	9.33

Continuing Calibration Summary

Job Number: JC52477 **Sample:** VT9325-CC9306
Account: UTC United Technologies Corporation **Lab FileID:** T227075.D
Project: SECORINI: Zanesville OH, Monthly

42		t-BUTYL FORMATE	0.326	0.274	16.0	108	0.00	9.40
43	M	1,1,1-TRICHLOROETHANE	0.916	0.837	8.6	116	0.00	9.61
44		CYCLOHEXANE	0.740	0.725	2.0	123	0.00	9.70
45	S	DIBROMOFLUOROMETHANE (SUR	0.510	0.479	6.1	112	0.00	9.51
46		1,1-DICHLOROPROPENE	0.636	0.580	8.8	117	-0.01	9.76
47		CARBON TETRACHLORIDE	0.850	0.747	12.1	115	0.00	9.80
48		ISOPROPYL ACETATE	0.086	0.087	-1.2	131	0.00	9.90
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	117	0.00	10.32
50	S	1,2-DICHLOROETHANE-d4	0.366	0.327	10.7	105	0.00	9.91
51	M	BENZENE	1.280	1.241	3.0	123	0.00	10.01
52	M	1,2-DICHLOROETHANE	0.425	0.373	12.2	106	0.00	9.99
53		2,2,4-TRIMETHYLPENTANE	1.100	1.324	-20.4	151	0.00	10.03
54	M	TERT-AMYL METHYL ETHER	1.139	1.148	-0.8	127	0.00	10.03
55	M	HEPTANE	0.211	0.259	-22.7	148	0.00	10.17
56	M	TRICHLOROETHYLENE	0.295	0.284	3.7	117	0.00	10.66
57	M	1,2-DICHLOROPROPANE	0.345	0.364	-5.5	131	0.00	10.91
58	M	DIBROMOMETHANE	0.196	0.185	5.6	114	0.00	11.06
59		METHYL METHACRYLATE	0.067	0.071	-6.0	137	0.00	10.89
60		METHYLCYCLOHEXANE	0.651	0.720	-10.6	141	0.00	10.91
61	M	BROMODICHLOROMETHANE	0.434	0.398	8.3	111	0.00	11.17
62	M	2-CHLOROETHYL VINYL ETHER	0.158	0.197	-24.7	149	0.00	11.40
63	M	EPICHLOROHYDRIN	0.025	0.027	-8.0	134	0.00	11.52
64	M	cis-1,3-DICHLOROPROPENE	0.511	0.502	1.8	127	0.00	11.63
65	M	4-METHYL-2-PENTANONE	0.108	0.126	-16.7	137	0.00	11.73
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	125	0.00	13.53
67	S	TOLUENE-d8	1.279	1.285	-0.5	124	0.00	11.95
68		TOLUENE	0.794	0.764	3.8	130	0.00	12.02
69		ETHYL METHACRYLATE	0.369	0.404	-9.5	136	0.00	12.19
70		trans-1,3-DICHLOROPROPENE	0.480	0.454	5.4	123	0.00	12.19
71		1,1,2-TRICHLOROETHANE	0.235	0.236	-0.4	131	0.00	12.41
72	M	TETRACHLOROETHYLENE	0.285	0.261	8.4	124	0.00	12.63
73	M	2-HEXANONE	0.104	0.116	-11.5	148	0.00	12.60
74		1,3-DICHLOROPROPANE	0.474	0.471	0.6	134	0.00	12.61
75	M	BUTYL ACETATE	0.200	0.218	-9.0	147	0.00	12.68
76		3,3-DIMETHYL-1-BUTANOL	0.039	0.044	-12.8	147	0.00	12.76
77	M	DIBROMOCHLOROMETHANE	0.355	0.314	11.5	118	0.00	12.89
78	M	ETHYLENE DIBROMIDE	0.270	0.265	1.9	127	0.00	13.07
79	M	CHLOROBENZENE	0.920	0.899	2.3	132	0.00	13.57
80	M	1,1,1,2-TETRACHLOROETHANE	0.434	0.392	9.7	124	0.00	13.62
81	M	ETHYLBENZENE	1.557	1.544	0.8	131	0.00	13.63
82	M	m,p-XYLENE	0.578	0.585	-1.2	134	0.00	13.74
83	M	o-XYLENE	1.386	1.353	2.4	131	0.00	14.20
84	M	STYRENE	0.999	1.008	-0.9	131	0.00	14.20
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.223	0.225	-0.9	124	0.00	14.47
87	M	CUMENE	1.702	1.738	-2.1	133	0.00	14.58
88		cis-1,4-DICHLORO-2-BUTENE	0.122	0.102	16.4	102	0.00	14.62
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	129	0.00	16.07
90	S	4-BROMOFLUOROBENZENE	0.717	0.722	-0.7	135	0.00	14.79
91		1,1,2,2-TETRACHLOROETHANE	0.703	0.688	2.1	138	0.00	14.87
92		trans-1,4-DICHLORO-2-BUTE	0.160	0.137	14.4	117	0.00	14.92
93		1,2,3-TRICHLOROPROPANE	0.174	0.163	6.3	127	0.00	14.97
94		N-PROPYLBENZENE	3.374	3.288	2.5	139	0.00	15.02
95		BROMOBENZENE	0.733	0.686	6.4	132	0.00	15.01
96		2-CHLOROTOLUENE	0.720	0.681	5.4	135	0.00	15.18
97		4-CHLOROTOLUENE	2.011	1.922	4.4	138	0.00	15.29
98	M	1,3,5-TRIMETHYLBENZENE	2.558	2.420	5.4	131	0.00	15.19

Continuing Calibration Summary

Job Number: JC52477
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VT9325-CC9306
Lab FileID: T227075.D

99		TERT-BUTYLBENZENE	2.215	2.068	6.6	130	0.00	15.58
100	M	1,2,4-TRIMETHYLBENZENE	2.526	2.541	-0.6	134	0.00	15.62
101		SEC-BUTYLBENZENE	3.394	3.339	1.6	132	0.00	15.82
102		P-ISOPROPYLTOLUENE	2.929	2.794	4.6	135	0.00	15.95
103	M	1,3-DICHLOROBENZENE	1.505	1.435	4.7	137	0.00	16.01
104	M	1,4-DICHLOROBENZENE	1.526	1.470	3.7	136	0.00	16.10
105		N-BUTYLBENZENE	0.732	0.722	1.4	139	0.00	16.40
106	M	1,2-DICHLOROBENZENE	1.543	1.556	-0.8	139	0.00	16.53
107		HEXACHLOROETHANE	0.354	0.315	11.0	132	0.00	16.84
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.165	0.187	-13.3	145	0.00	17.37
109		HEXACHLOROBUTADIENE	0.756	0.727	3.8	143	0.00	18.41
110		1,3,5-TRICHLOROBENZENE	1.548	1.587	-2.5	144	0.00	17.58
111		NITROBENZENE	0.056	0.042	25.0	115	0.00	17.60
112	M	1,2,4-TRICHLOROBENZENE	1.408	1.545	-9.7	145	0.00	18.27
113		1,2,3-TRICHLOROBENZENE	1.348	1.488	-10.4	147	0.00	18.86
114	M	NAPHTHALENE	2.665	3.106	-16.5	150	0.00	18.59
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T226638.D MT9306.M Mon Oct 09 14:22:41 2017 11

6.8.6

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227059.D
Acq On : 6 Oct 2017 6:16 pm
Operator : payalr
Sample : jc52477-1
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 09 12:03:28 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

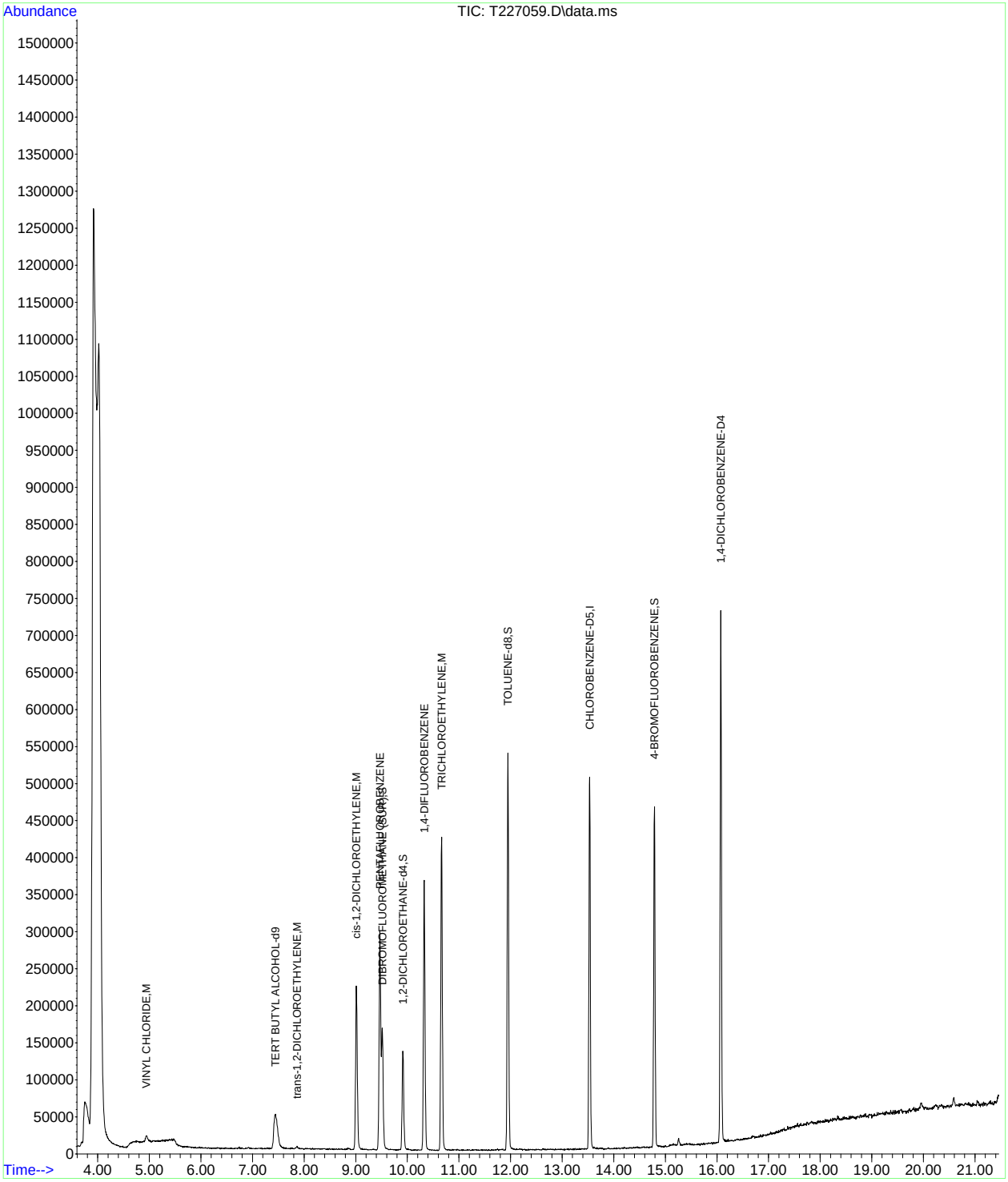
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.443	65	135032	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.471	168	249926	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.329	114	346130	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.533	117	328823	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.074	152	221281	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.518	113	109202	25.70	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 85.67%			
50) 1,2-DICHLOROETHANE-d4	9.916	65	108171	25.64	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 85.47%			
67) TOLUENE-d8	11.949	98	404332	28.84	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 96.13%			
90) 4-BROMOFLUOROBENZENE	14.788	174	164393	31.07	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 103.57%			
Target Compounds						Qvalue
10) VINYL CHLORIDE	4.939	62	15500	1.80	PPb	94
29) trans-1,2-DICHLOROETHY...	7.861	61	1856	0.32	PPb	89
36) cis-1,2-DICHLOROETHYLENE	9.011	96	122271	26.33	PPb	91
56) TRICHLOROETHYLENE	10.663	95	155181	45.59	PPb	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

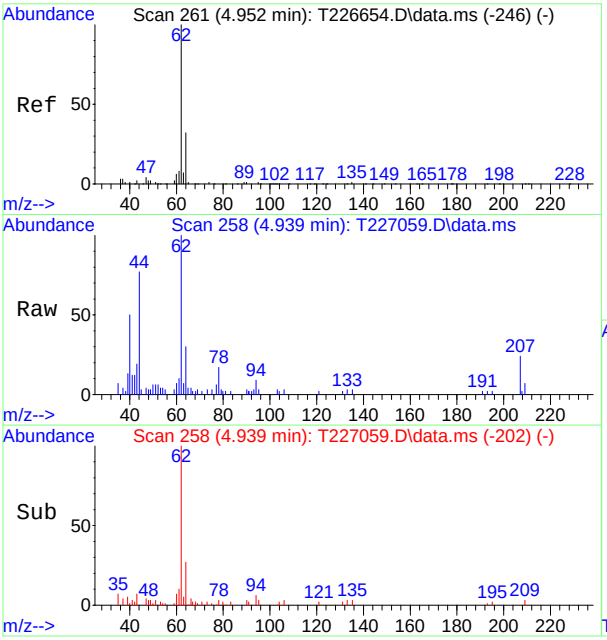
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227059.D
Acq On : 6 Oct 2017 6:16 pm
Operator : payalr
Sample : jc52477-1
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 09 12:03:28 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration



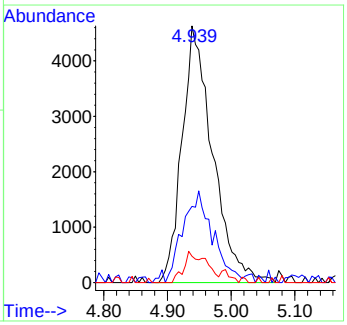
SGS ACCUTEST JC52477

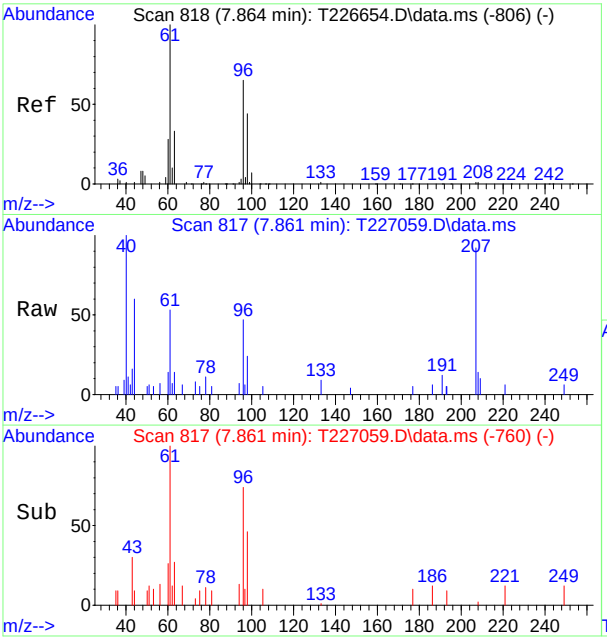


#10
VINYL CHLORIDE
Concen: 1.80 PPb
RT: 4.939 min Scan# 258
Delta R.T. -0.008 min
Lab File: T227059.D
Acq: 6 Oct 2017 6:16 pm

Tgt Ion: 62 Resp: 15500

Ion	Ratio	Lower	Upper
62	100		
64	28.0	1.6	61.6
61	10.3	0.0	38.5

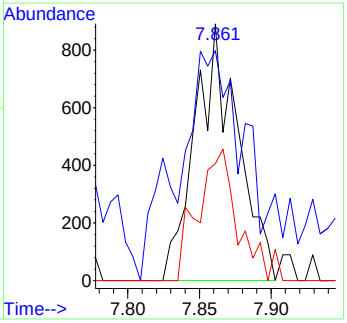


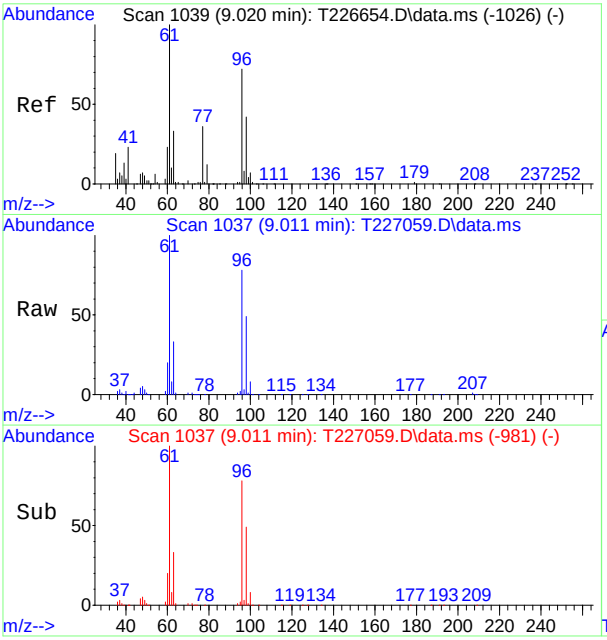


#29
trans-1,2-DICHLOROETHYLENE
Concen: 0.32 PPb
RT: 7.861 min Scan# 817
Delta R.T. -0.003 min
Lab File: T227059.D
Acq: 6 Oct 2017 6:16 pm

Tgt Ion: 61 Resp: 1856

Ion	Ratio	Lower	Upper
61	100		
96	55.8	34.2	94.2
98	45.6	9.0	69.0

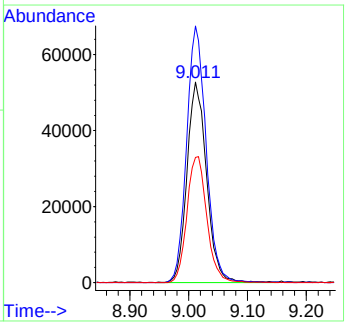


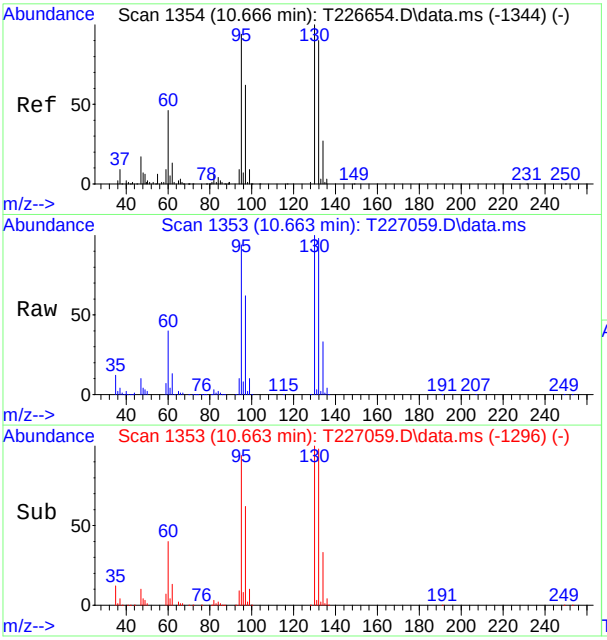


#36
cis-1,2-DICHLOROETHYLENE
Concen: 26.33 PPb
RT: 9.011 min Scan# 1037
Delta R.T. -0.008 min
Lab File: T227059.D
Acq: 6 Oct 2017 6:16 pm

Tgt Ion: 96 Resp: 122271

Ion	Ratio	Lower	Upper
96	100		
61	128.1	106.5	166.5
98	62.5	42.7	102.7

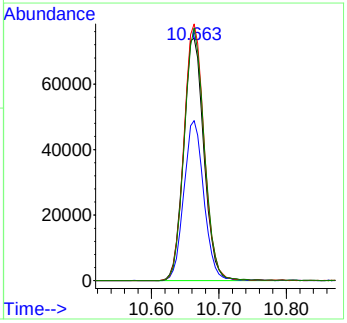




#56
TRICHLOROETHYLENE
Concen: 45.59 PPb
RT: 10.663 min Scan# 1353
Delta R.T. -0.003 min
Lab File: T227059.D
Acq: 6 Oct 2017 6:16 pm

Tgt Ion: 95 Resp: 155181

Ion	Ratio	Lower	Upper
95	100		
97	66.0	31.4	91.4
130	105.9	63.1	123.1
132	104.1	54.5	114.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227060.D
Acq On : 6 Oct 2017 6:46 pm
Operator : payalr
Sample : jc52477-2
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Oct 09 12:04:05 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

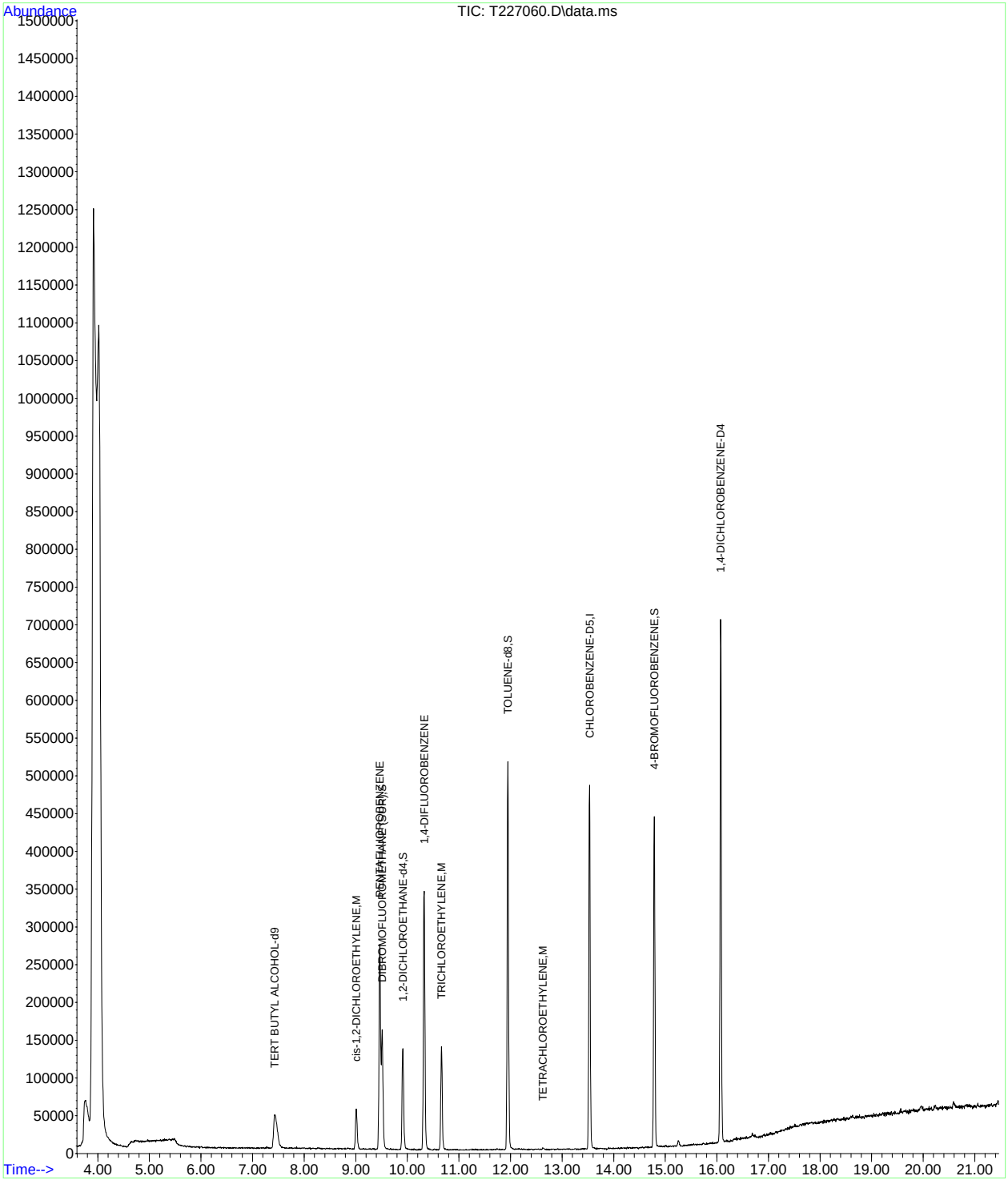
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.426	65	124903	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.465	168	228797	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.327	114	321445	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.532	117	317103	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.073	152	211228	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.512	113	102212	26.28	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 87.60%			
50) 1,2-DICHLOROETHANE-d4	9.914	65	102421	26.14	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 87.13%			
67) TOLUENE-d8	11.948	98	382368	28.28	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 94.27%			
90) 4-BROMOFLUOROBENZENE	14.787	174	153668	30.43	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 101.43%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.010	96	30071	7.07	PPb	89
56) TRICHLOROETHYLENE	10.662	95	50568	16.00	PPb	88
72) TETRACHLOROETHYLENE	12.627	164	668	0.22	PPb	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

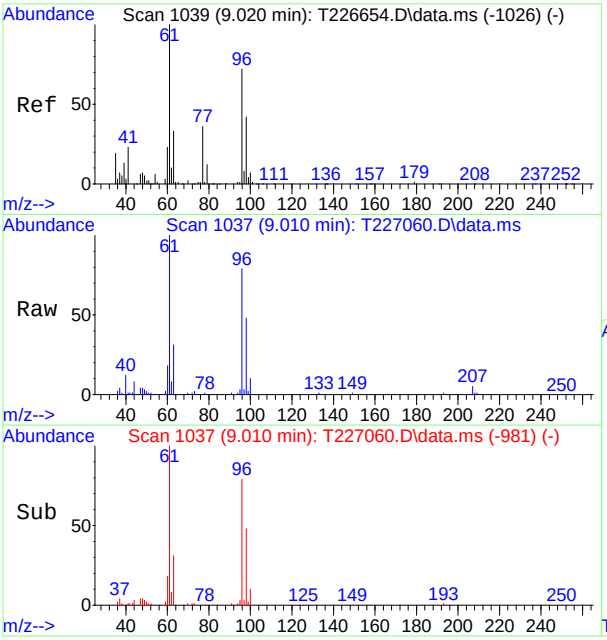
Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227060.D
Acq On : 6 Oct 2017 6:46 pm
Operator : payalr
Sample : jc52477-2
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Oct 09 12:04:05 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration



MT9306.M Mon Oct 09 12:12:45 2017 11 Page: 2

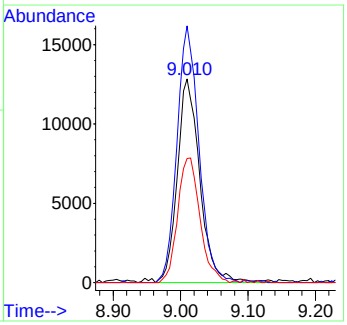
SGS ACCUTEST JC52477

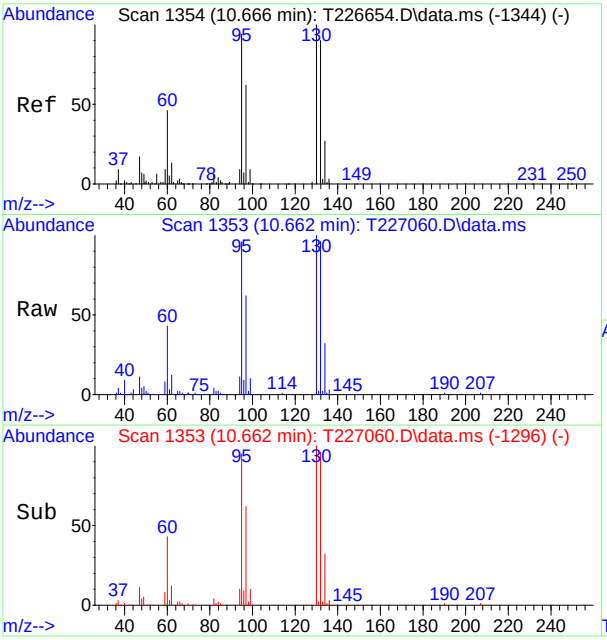


#36
cis-1,2-DICHLOROETHYLENE
Concen: 7.07 PPb
RT: 9.010 min Scan# 1037
Delta R.T. -0.010 min
Lab File: T227060.D
Acq: 6 Oct 2017 6:46 pm

Tgt Ion: 96 Resp: 30071

Ion	Ratio	Lower	Upper
96	100		
61	126.1	106.5	166.5
98	61.0	42.7	102.7

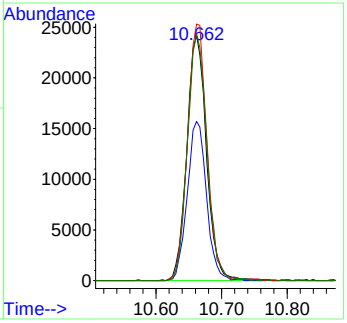


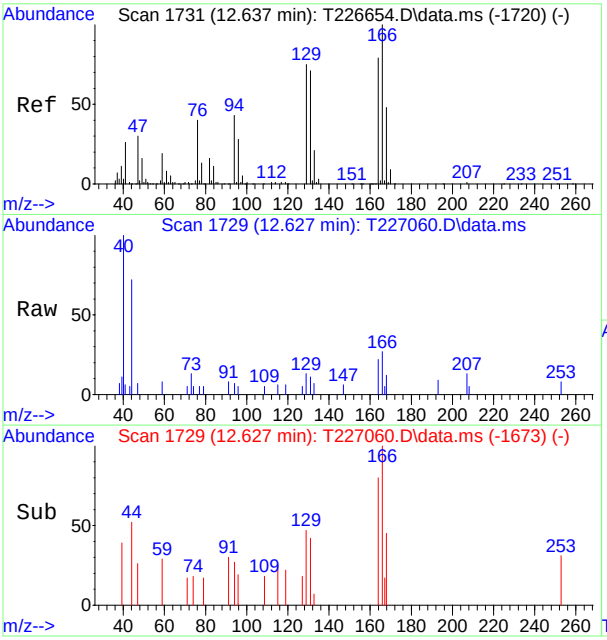


#56
TRICHLOROETHYLENE
Concen: 16.00 PPb
RT: 10.662 min Scan# 1353
Delta R.T. -0.005 min
Lab File: T227060.D
Acq: 6 Oct 2017 6:46 pm

Tgt Ion: 95 Resp: 50568

Ion	Ratio	Lower	Upper
95	100		
97	64.9	31.4	91.4
130	104.6	63.1	123.1
132	100.4	54.5	114.5

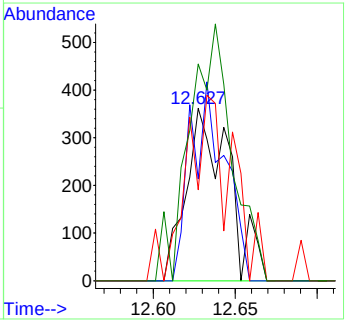




#72
TETRACHLOROETHYLENE
Concen: 0.22 PPb
RT: 12.627 min Scan# 1729
Delta R.T. -0.010 min
Lab File: T227060.D
Acq: 6 Oct 2017 6:46 pm

Tgt Ion:164 Resp: 668

Ion	Ratio	Lower	Upper
164	100		
129	59.1	56.6	116.6
131	52.8	48.6	108.6
166	125.7	101.5	161.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227061.D
Acq On : 6 Oct 2017 7:17 pm
Operator : payalr
Sample : jc52477-3
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 09 12:04:44 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

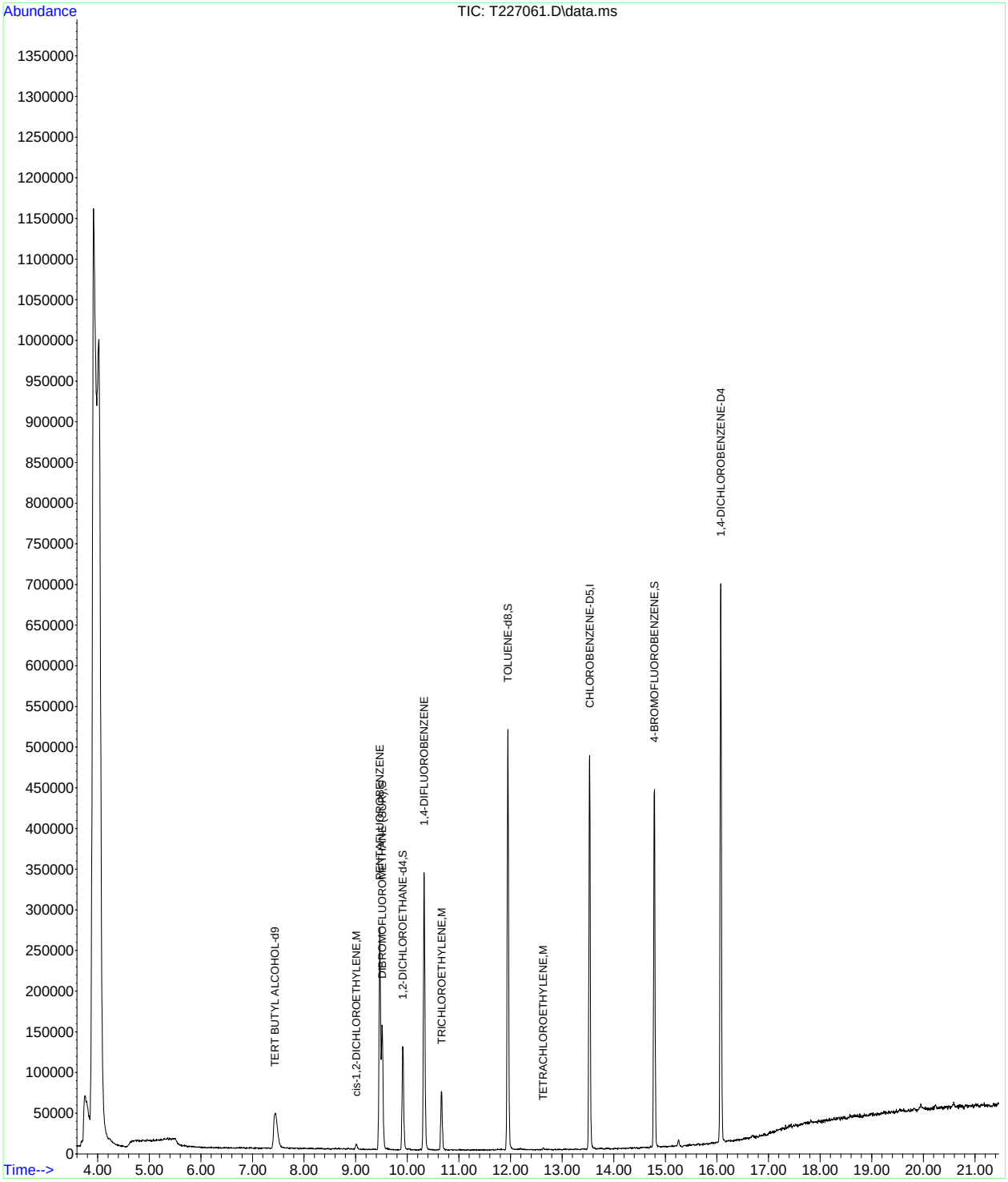
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.434	65	125592	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.467	168	225486	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.325	114	319285	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.535	117	316778	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.075	152	211344	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.514	113	100818	26.30	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 87.67%			
50) 1,2-DICHLOROETHANE-d4	9.912	65	101274	26.02	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 86.73%			
67) TOLUENE-d8	11.951	98	384172	28.45	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 94.83%			
90) 4-BROMOFLUOROBENZENE	14.789	174	154043	30.49	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 101.63%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.012	96	4147	0.99	PPb	# 81
56) TRICHLOROETHYLENE	10.664	95	26314	8.38	PPb	95
72) TETRACHLOROETHYLENE	12.630	164	617	0.21	PPb	# 48

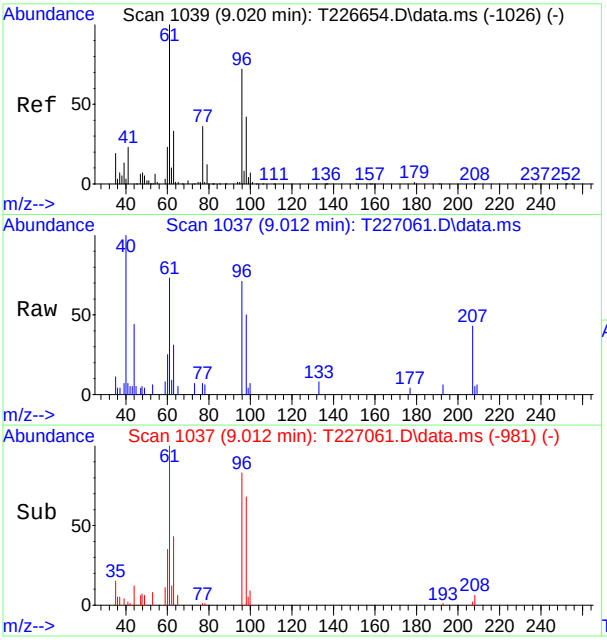
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227061.D
Acq On : 6 Oct 2017 7:17 pm
Operator : payalr
Sample : jc52477-3
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 09 12:04:44 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

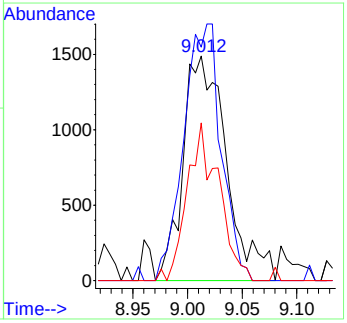


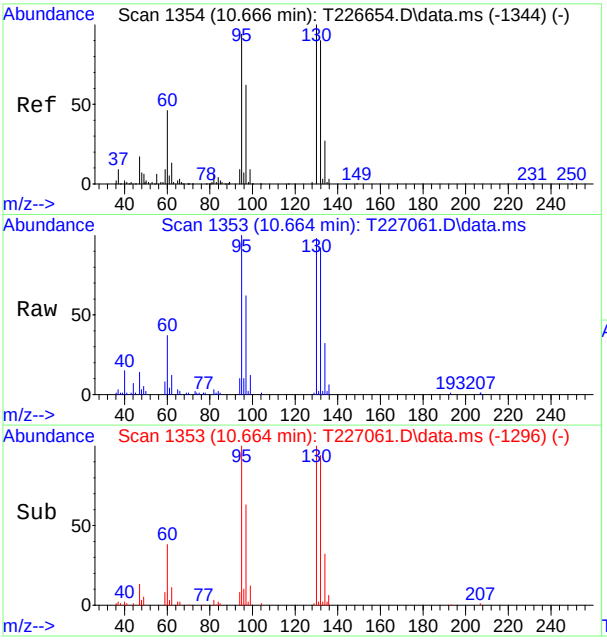


#36
cis-1,2-DICHLOROETHYLENE
Concen: 0.99 PPb
RT: 9.012 min Scan# 1037
Delta R.T. -0.007 min
Lab File: T227061.D
Acq: 6 Oct 2017 7:17 pm

Tgt Ion: 96 Resp: 4147

Ion	Ratio	Lower	Upper
96	100		
61	104.0	106.5	166.5#
98	70.2	42.7	102.7

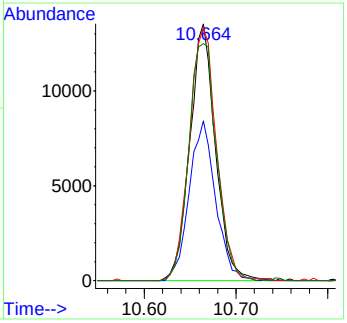


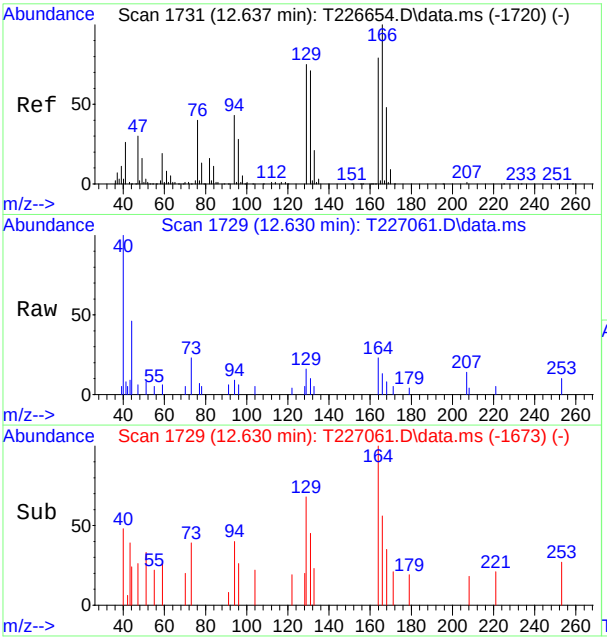


#56
TRICHLOROETHYLENE
Concen: 8.38 PPb
RT: 10.664 min Scan# 1353
Delta R.T. -0.002 min
Lab File: T227061.D
Acq: 6 Oct 2017 7:17 pm

Tgt Ion: 95 Resp: 26314

Ion	Ratio	Lower	Upper
95	100		
97	62.2	31.4	91.4
130	98.3	63.1	123.1
132	92.3	54.5	114.5

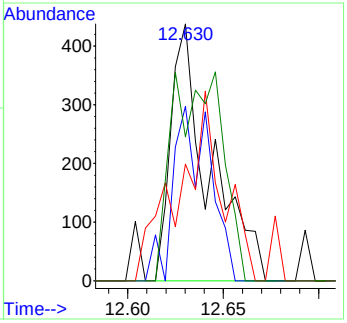




#72
TETRACHLOROETHYLENE
Concen: 0.21 PPb
RT: 12.630 min Scan# 1729
Delta R.T. -0.007 min
Lab File: T227061.D
Acq: 6 Oct 2017 7:17 pm

Tgt Ion:164 Resp: 617

Ion	Ratio	Lower	Upper
164	100		
129	67.8	56.6	116.6
131	20.3	48.6	108.6#
166	55.9	101.5	161.5#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227062.D
Acq On : 6 Oct 2017 7:47 pm
Operator : payalr
Sample : jc52477-4
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 09 12:05:33 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

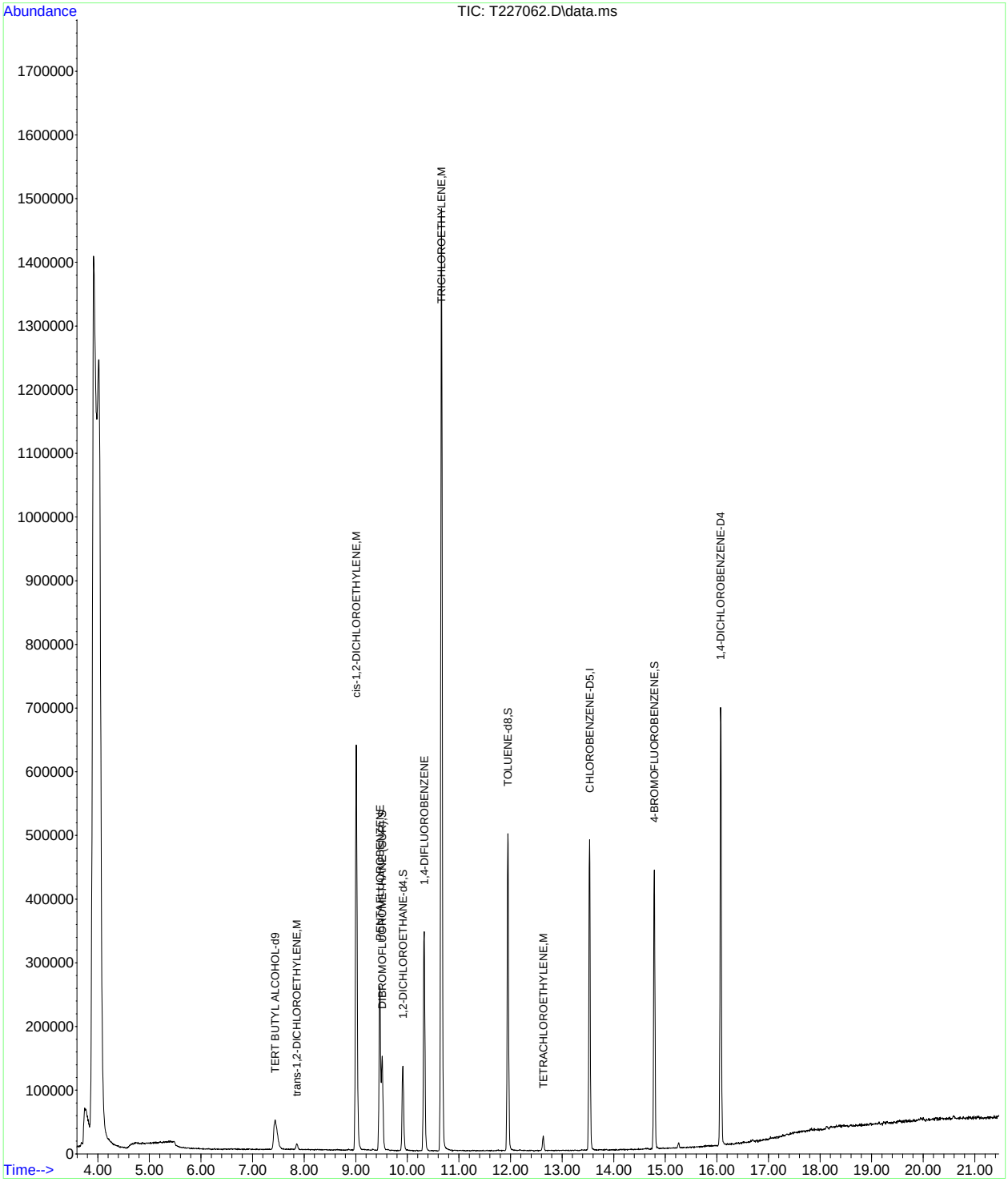
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.436	65	126825	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.470	168	211755	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.327	114	311227	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.532	117	313529	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.073	152	207734	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.512	113	96891	26.92	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 89.73%			
50) 1,2-DICHLOROETHANE-d4	9.914	65	100005	26.36	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 87.87%			
67) TOLUENE-d8	11.948	98	372605	27.88	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 92.93%			
90) 4-BROMOFLUOROBENZENE	14.787	174	149017	30.00	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 100.00%			
Target Compounds						Qvalue
29) trans-1,2-DICHLOROETHY...	7.854	61	6924	1.39	PPb	97
36) cis-1,2-DICHLOROETHYLENE	9.010	96	336995	85.67	PPb	92
56) TRICHLOROETHYLENE	10.662	95	540571	176.61	PPb	87
72) TETRACHLOROETHYLENE	12.633	164	6469	2.17	PPb	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

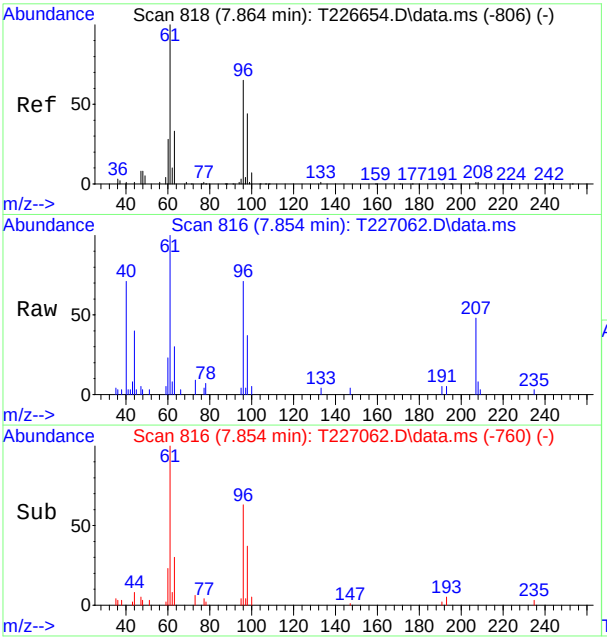
Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227062.D
Acq On : 6 Oct 2017 7:47 pm
Operator : payalr
Sample : jc52477-4
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 09 12:05:33 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration



MT9306.M Mon Oct 09 12:12:49 2017 11 Page: 2

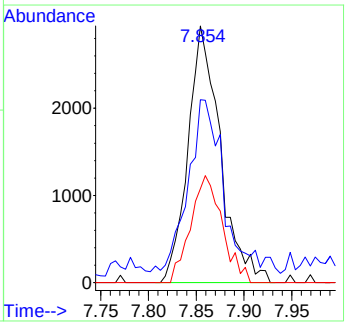
SGS ACCUTEST JC52477

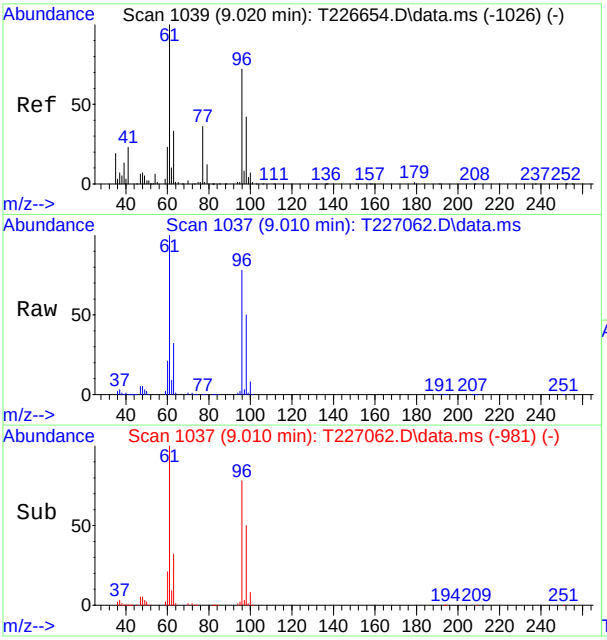


#29
trans-1,2-DICHLOROETHYLENE
Concen: 1.39 PPb
RT: 7.854 min Scan# 816
Delta R.T. -0.010 min
Lab File: T227062.D
Acq: 6 Oct 2017 7:47 pm

Tgt Ion: 61 Resp: 6924

Ion	Ratio	Lower	Upper
61	100		
96	65.5	34.2	94.2
98	36.5	9.0	69.0

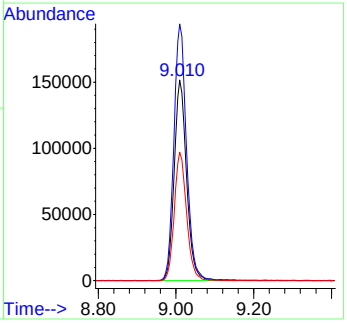


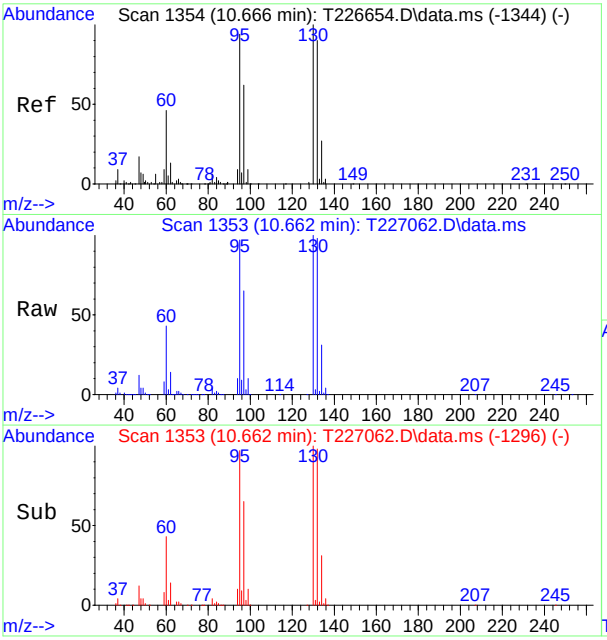


#36
cis-1,2-DICHLOROETHYLENE
Concen: 85.67 PPb
RT: 9.010 min Scan# 1037
Delta R.T. -0.010 min
Lab File: T227062.D
Acq: 6 Oct 2017 7:47 pm

Tgt Ion: 96 Resp: 336995

Ion	Ratio	Lower	Upper
96	100		
61	128.0	106.5	166.5
98	64.1	42.7	102.7

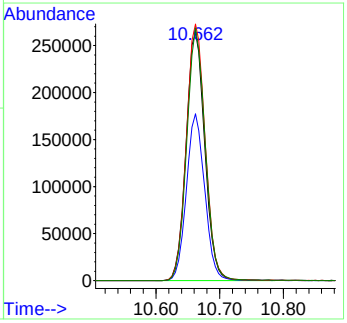


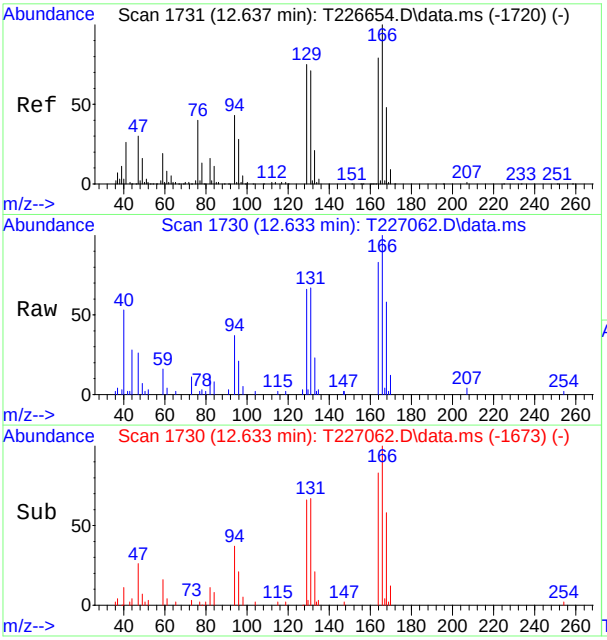


#56
TRICHLOROETHYLENE
Concen: 176.61 PPb
RT: 10.662 min Scan# 1353
Delta R.T. -0.004 min
Lab File: T227062.D
Acq: 6 Oct 2017 7:47 pm

Tgt Ion: 95 Resp: 540571

Ion	Ratio	Lower	Upper
95	100		
97	67.1	31.4	91.4
130	103.4	63.1	123.1
132	101.8	54.5	114.5

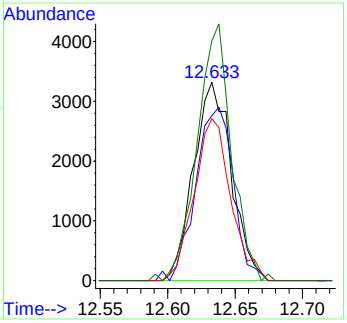




#72
TETRACHLOROETHYLENE
Concen: 2.17 PPb
RT: 12.633 min Scan# 1730
Delta R.T. -0.005 min
Lab File: T227062.D
Acq: 6 Oct 2017 7:47 pm

Tgt Ion:164 Resp: 6469

Ion	Ratio	Lower	Upper
164	100		
129	83.1	56.6	116.6
131	81.6	48.6	108.6
166	120.8	101.5	161.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227063.D
Acq On : 6 Oct 2017 8:17 pm
Operator : payalr
Sample : jc52477-5
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 09 12:06:23 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

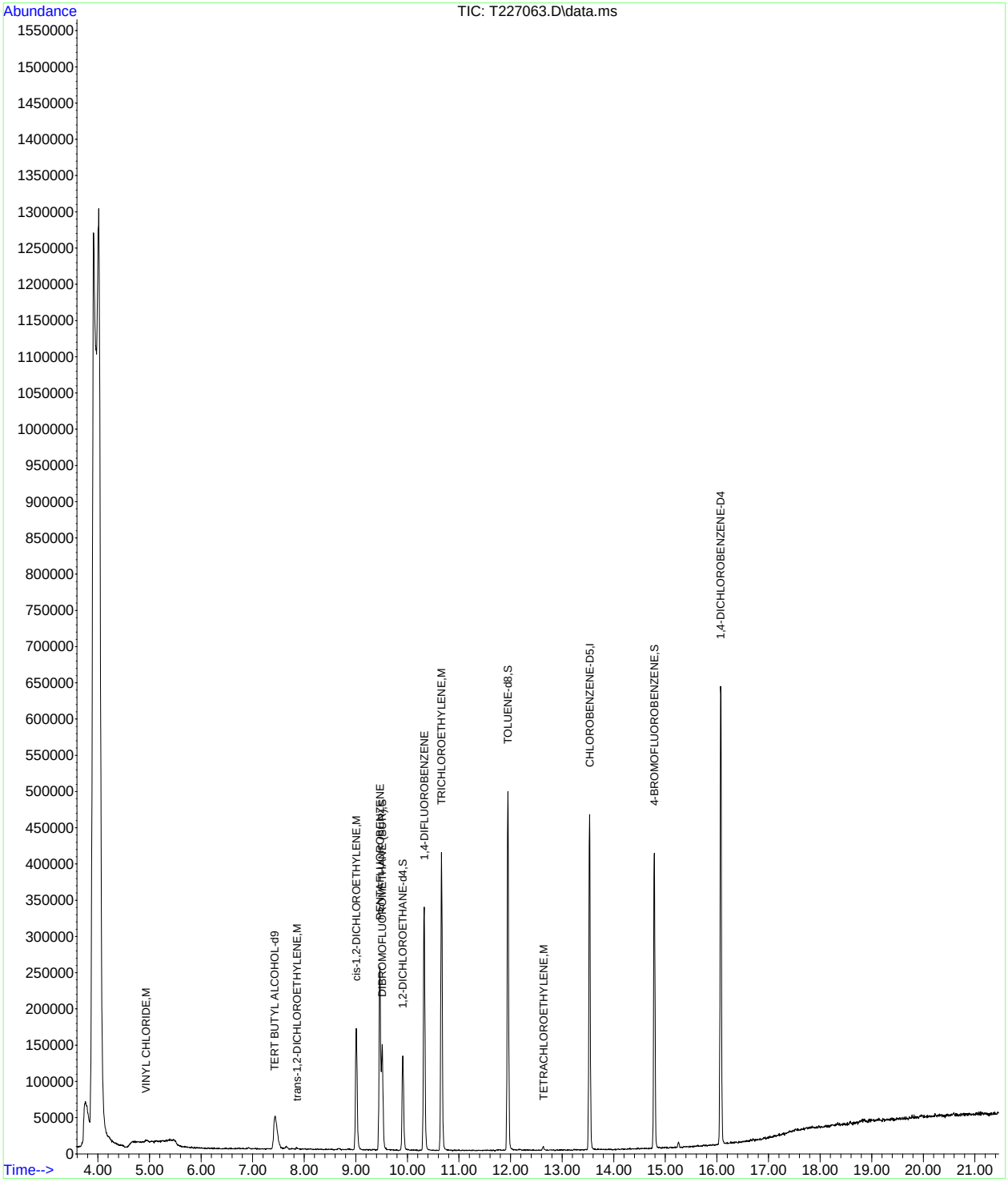
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) TERT BUTYL ALCOHOL-d9	7.425	65	123188	300.00	PPb		-0.02
4) PENTAFLUOROBENZENE	9.469	168	205225	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.326	114	300710	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.531	117	297665	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.072	152	192447	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.511	113	94106	26.97	PPb		-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 89.90%				
50) 1,2-DICHLOROETHANE-d4	9.908	65	99648	27.19	PPB		-0.01
Spiked Amount 30.000	Range 72 - 125		Recovery = 90.63%				
67) TOLUENE-d8	11.947	98	367272	28.94	PPB		0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 96.47%				
90) 4-BROMOFLUOROBENZENE	14.786	174	138568	30.12	PPB		0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 100.40%				
Target Compounds							Qvalue
10) VINYL CHLORIDE	4.936	62	5276	0.74	PPb		95
29) trans-1,2-DICHLOROETHY...	7.859	61	1248	0.26	PPb		78
36) cis-1,2-DICHLOROETHYLENE	9.009	96	88845	23.30	PPb		95
56) TRICHLOROETHYLENE	10.661	95	149987	50.72	PPb		90
72) TETRACHLOROETHYLENE	12.642	164	1520	0.54	PPb	#	60

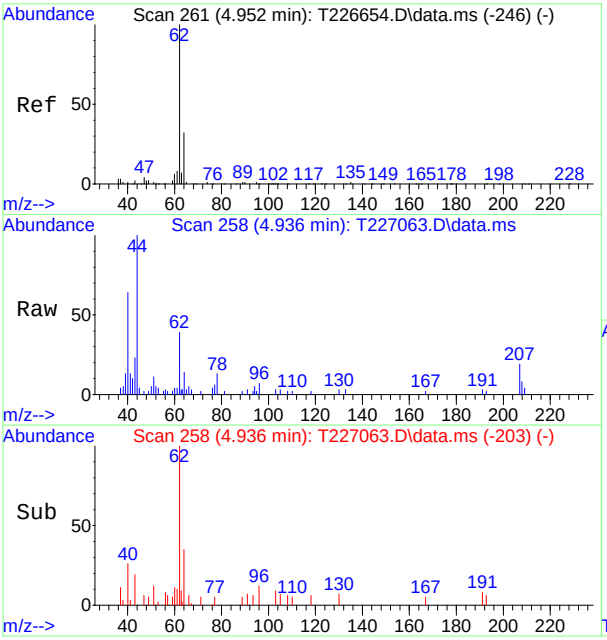
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227063.D
Acq On : 6 Oct 2017 8:17 pm
Operator : payalr
Sample : jc52477-5
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 09 12:06:23 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

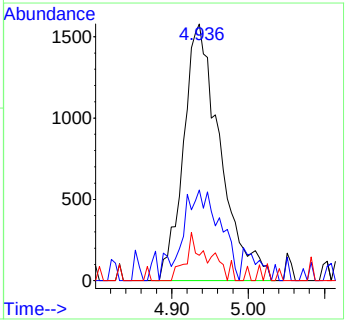


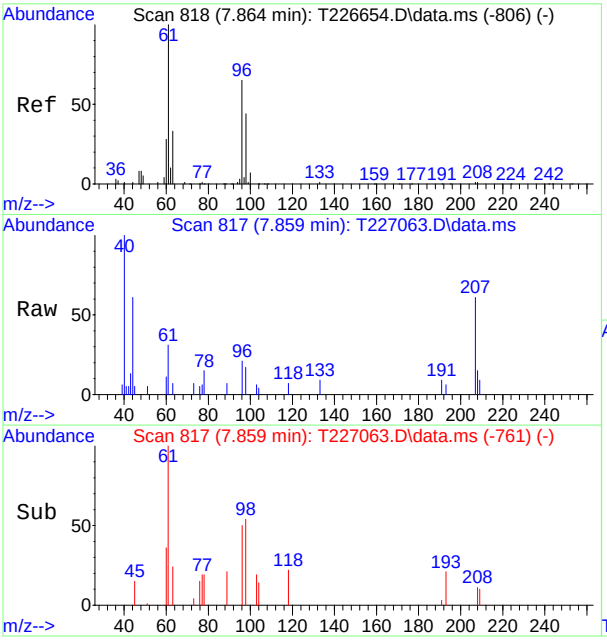


#10
VINYL CHLORIDE
Concen: 0.74 PPb
RT: 4.936 min Scan# 258
Delta R.T. -0.011 min
Lab File: T227063.D
Acq: 6 Oct 2017 8:17 pm

Tgt Ion: 62 Resp: 5276

Ion	Ratio	Lower	Upper
62	100		
64	29.0	1.6	61.6
61	9.9	0.0	38.5

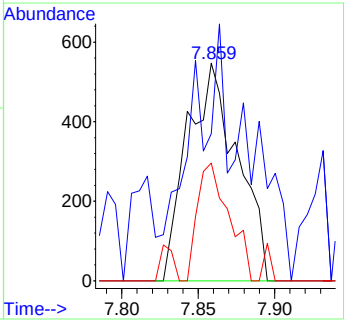


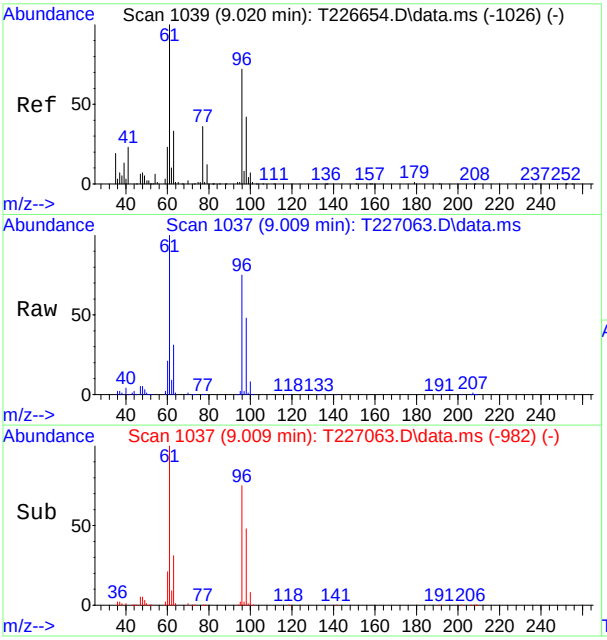


#29
trans-1,2-DICHLOROETHYLENE
Concen: 0.26 PPb
RT: 7.859 min Scan# 817
Delta R.T. -0.005 min
Lab File: T227063.D
Acq: 6 Oct 2017 8:17 pm

Tgt Ion: 61 Resp: 1248

Ion	Ratio	Lower	Upper
61	100		
96	47.7	34.2	94.2
98	54.1	9.0	69.0

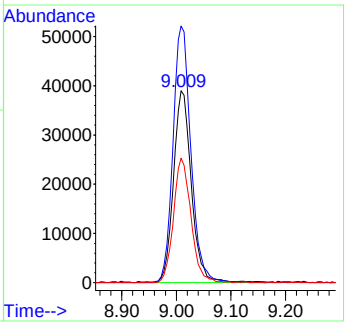


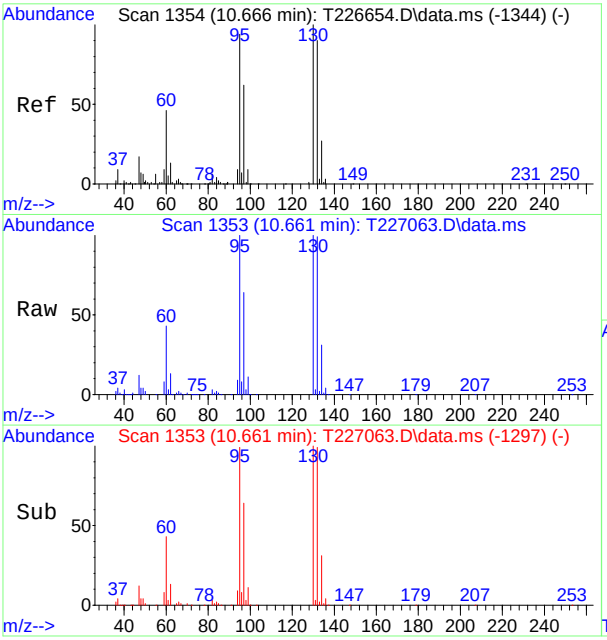


#36
cis-1,2-DICHLOROETHYLENE
Concen: 23.30 PPb
RT: 9.009 min Scan# 1037
Delta R.T. -0.011 min
Lab File: T227063.D
Acq: 6 Oct 2017 8:17 pm

Tgt Ion: 96 Resp: 88845

Ion	Ratio	Lower	Upper
96	100		
61	133.7	106.5	166.5
98	64.8	42.7	102.7

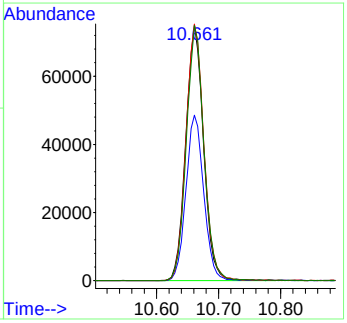


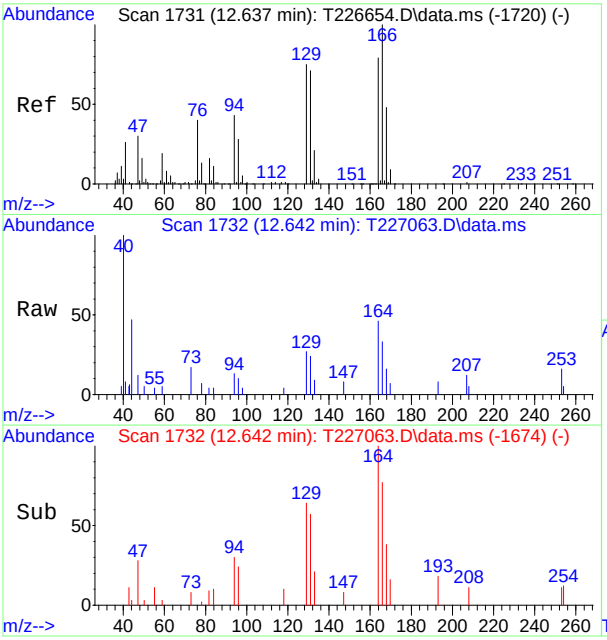


#56
TRICHLOROETHYLENE
Concen: 50.72 PPb
RT: 10.661 min Scan# 1353
Delta R.T. -0.005 min
Lab File: T227063.D
Acq: 6 Oct 2017 8:17 pm

Tgt Ion: 95 Resp: 149987

Ion	Ratio	Lower	Upper
95	100		
97	64.6	31.4	91.4
130	100.3	63.1	123.1
132	99.7	54.5	114.5

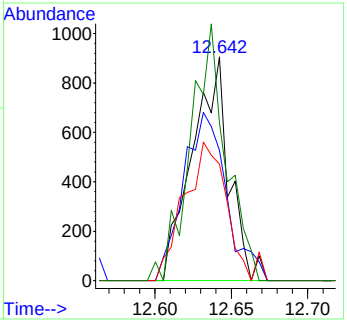




#72
TETRACHLOROETHYLENE
Concen: 0.54 PPb
RT: 12.642 min Scan# 1732
Delta R.T. 0.005 min
Lab File: T227063.D
Acq: 6 Oct 2017 8:17 pm

Tgt Ion:164 Resp: 1520

Ion	Ratio	Lower	Upper
164	100		
129	58.3	56.6	116.6
131	52.2	48.6	108.6
166	70.7	101.5	161.5#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227064.D
Acq On : 6 Oct 2017 8:47 pm
Operator : payalr
Sample : jc52477-6
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Oct 09 12:07:00 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

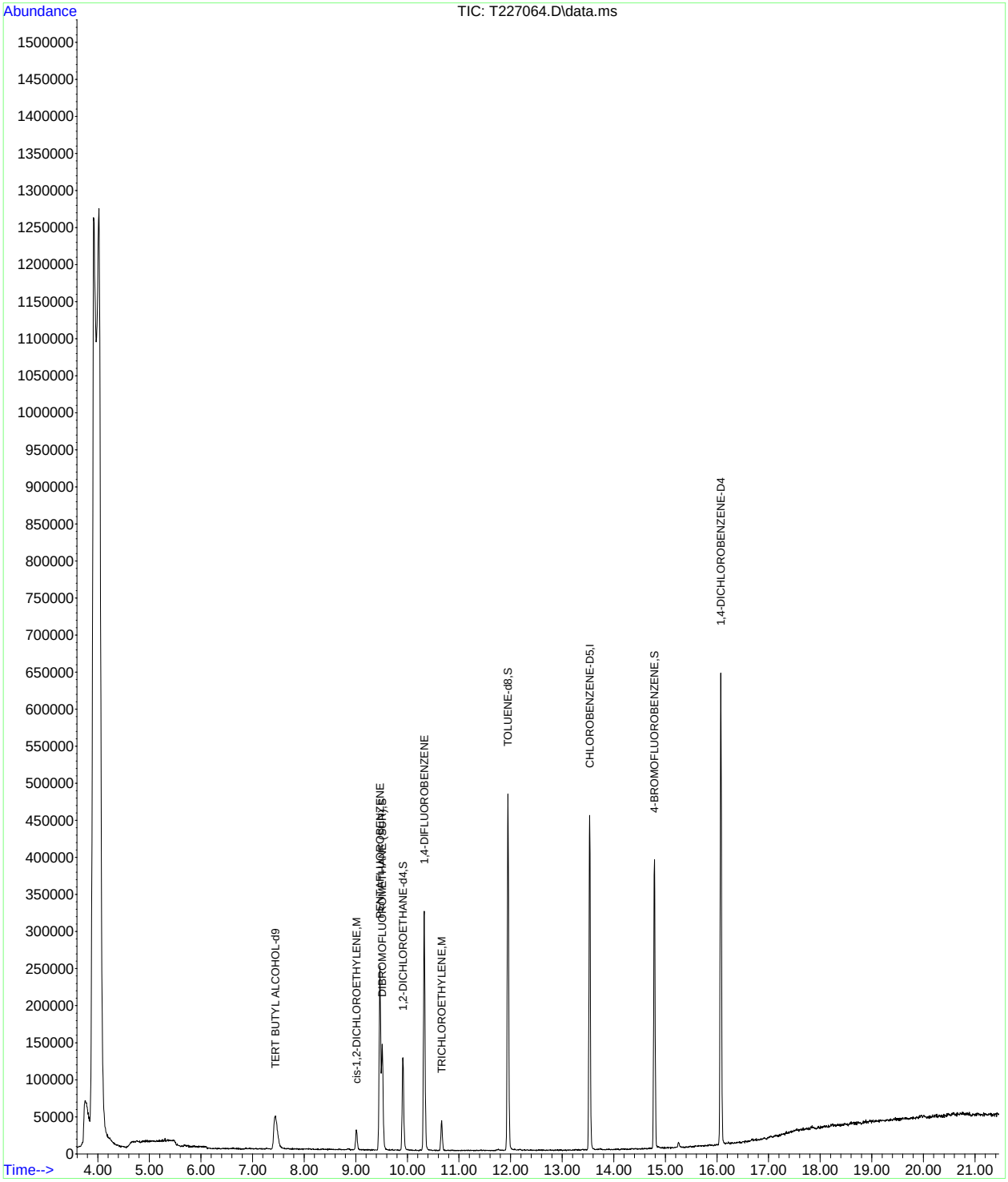
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.442	65	123802	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.470	168	202037	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.328	114	290111	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.533	117	283721	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.073	152	187978	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.512	113	91965	26.78	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 89.27%			
50) 1,2-DICHLOROETHANE-d4	9.915	65	96713	27.35	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 91.17%			
67) TOLUENE-d8	11.949	98	353266	29.20	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 97.33%			
90) 4-BROMOFLUOROBENZENE	14.787	174	131331	29.22	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.40%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.016	96	15545	4.14	PPb	80
56) TRICHLOROETHYLENE	10.662	95	13710	4.81	PPb	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

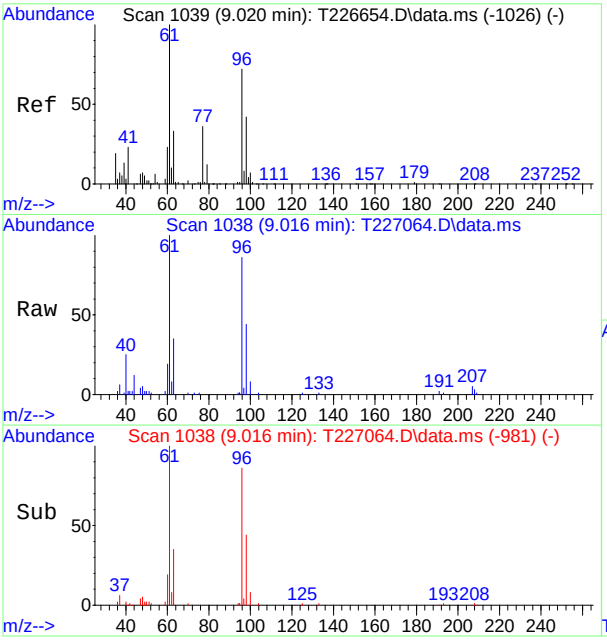
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227064.D
Acq On : 6 Oct 2017 8:47 pm
Operator : payalr
Sample : jc52477-6
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Oct 09 12:07:00 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration



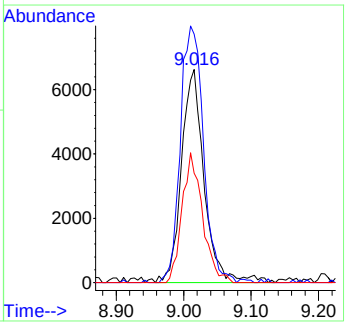
SGS ACCUTEST JC52477

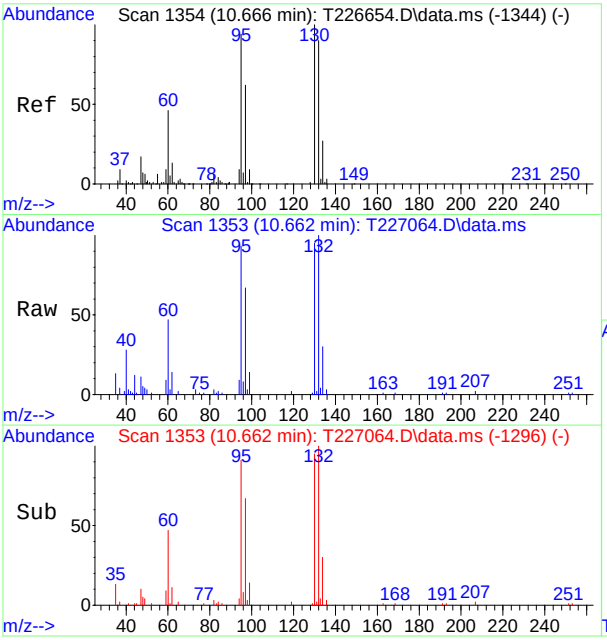


#36
cis-1,2-DICHLOROETHYLENE
Concen: 4.14 PPb
RT: 9.016 min Scan# 1038
Delta R.T. -0.004 min
Lab File: T227064.D
Acq: 6 Oct 2017 8:47 pm

Tgt Ion: 96 Resp: 15545

Ion	Ratio	Lower	Upper
96	100		
61	116.6	106.5	166.5
98	51.3	42.7	102.7

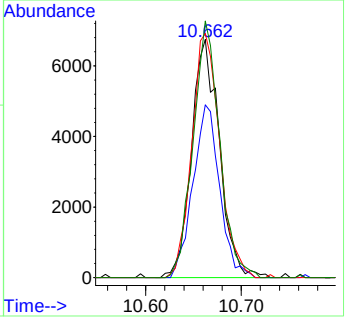




#56
TRICHLOROETHYLENE
Concen: 4.81 PPb
RT: 10.662 min Scan# 1353
Delta R.T. -0.004 min
Lab File: T227064.D
Acq: 6 Oct 2017 8:47 pm

Tgt Ion: 95 Resp: 13710

Ion	Ratio	Lower	Upper
95	100		
97	72.5	31.4	91.4
130	102.5	63.1	123.1
132	107.8	54.5	114.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227065.D
Acq On : 6 Oct 2017 9:18 pm
Operator : payalr
Sample : jc52477-7
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 09 12:07:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

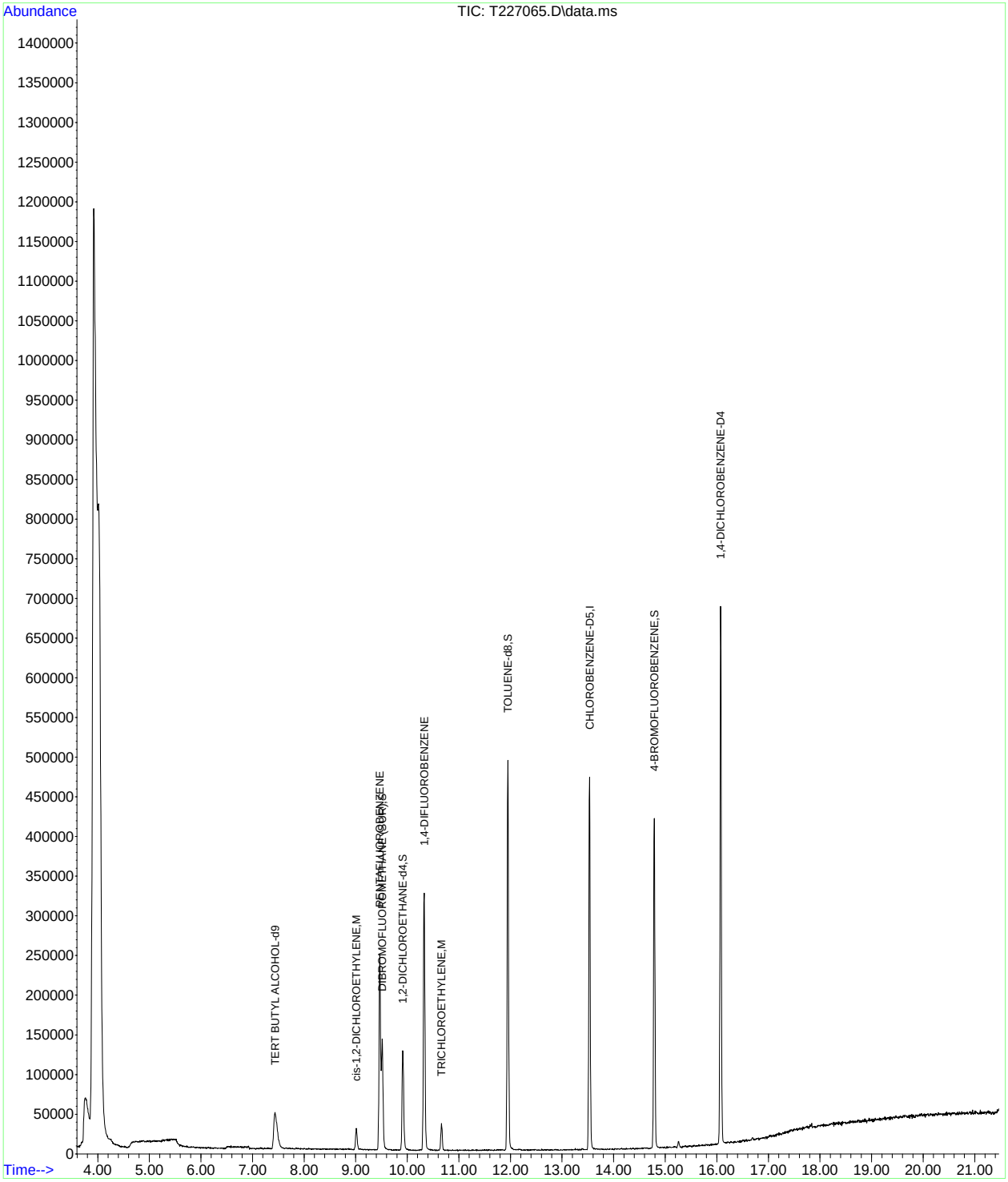
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.437	65	120258	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.465	168	194611	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.328	114	291418	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.533	117	294881	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.074	152	196905	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.512	113	91837	27.76	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 92.53%			
50) 1,2-DICHLOROETHANE-d4	9.910	65	96695	27.22	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 90.73%			
67) TOLUENE-d8	11.949	98	356900	28.39	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 94.63%			
90) 4-BROMOFLUOROBENZENE	14.787	174	137230	29.15	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.17%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.011	96	13720	3.79	PPb	93
56) TRICHLOROETHYLENE	10.663	95	12132	4.23	PPb	88

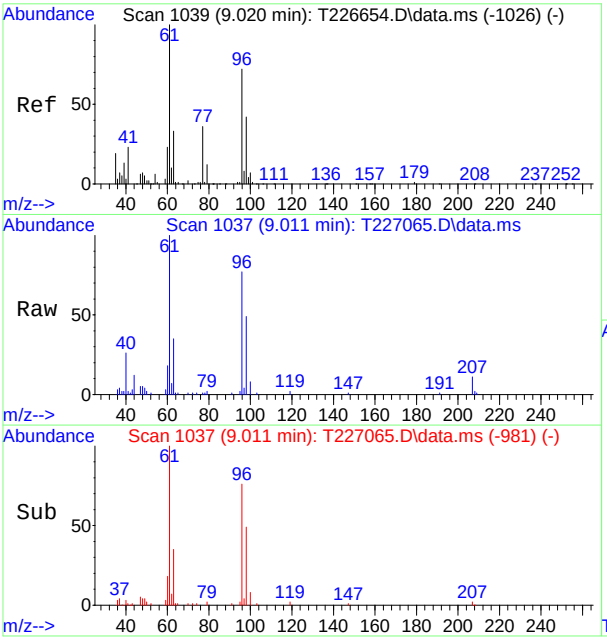
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : T227065.D
Acq On : 6 Oct 2017 9:18 pm
Operator : payalr
Sample : jc52477-7
Misc : MS20875,VT9324,W,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 09 12:07:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

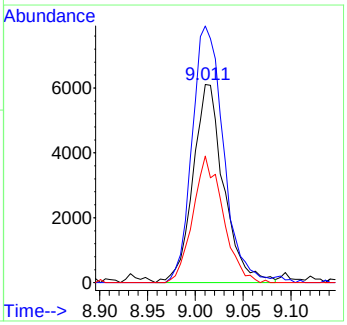


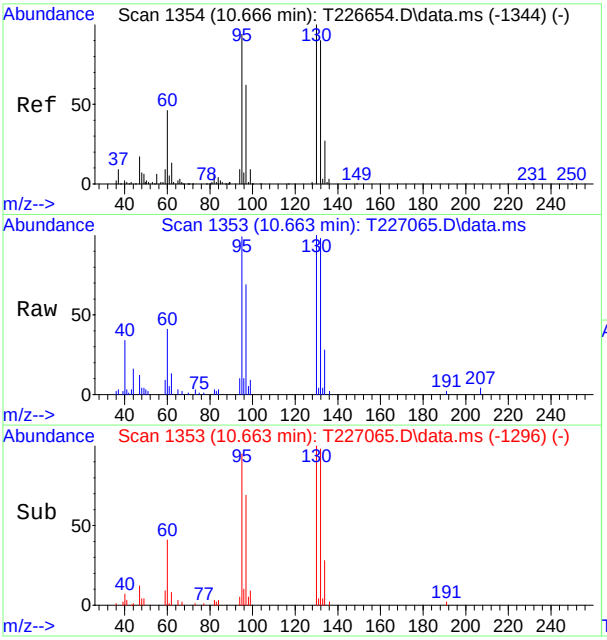


#36
cis-1,2-DICHLOROETHYLENE
Concen: 3.79 PPb
RT: 9.011 min Scan# 1037
Delta R.T. -0.009 min
Lab File: T227065.D
Acq: 6 Oct 2017 9:18 pm

Tgt Ion: 96 Resp: 13720

Ion	Ratio	Lower	Upper
96	100		
61	129.6	106.5	166.5
98	63.9	42.7	102.7

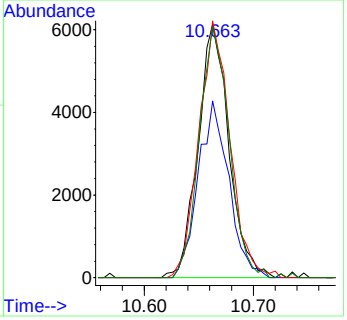




#56
TRICHLOROETHYLENE
Concen: 4.23 PPb
RT: 10.663 min Scan# 1353
Delta R.T. -0.004 min
Lab File: T227065.D
Acq: 6 Oct 2017 9:18 pm

Tgt Ion: 95 Resp: 12132

Ion	Ratio	Lower	Upper
95	100		
97	69.8	31.4	91.4
130	101.4	63.1	123.1
132	99.2	54.5	114.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9325part\
Data File : T227097.D
Acq On : 7 Oct 2017 1:48 pm
Operator : payalr
Sample : jc52477-8
Misc : MS20875,VT9325,W,,,,1
ALS Vial : 48 Sample Multiplier: 1

Quant Time: Oct 09 16:52:38 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

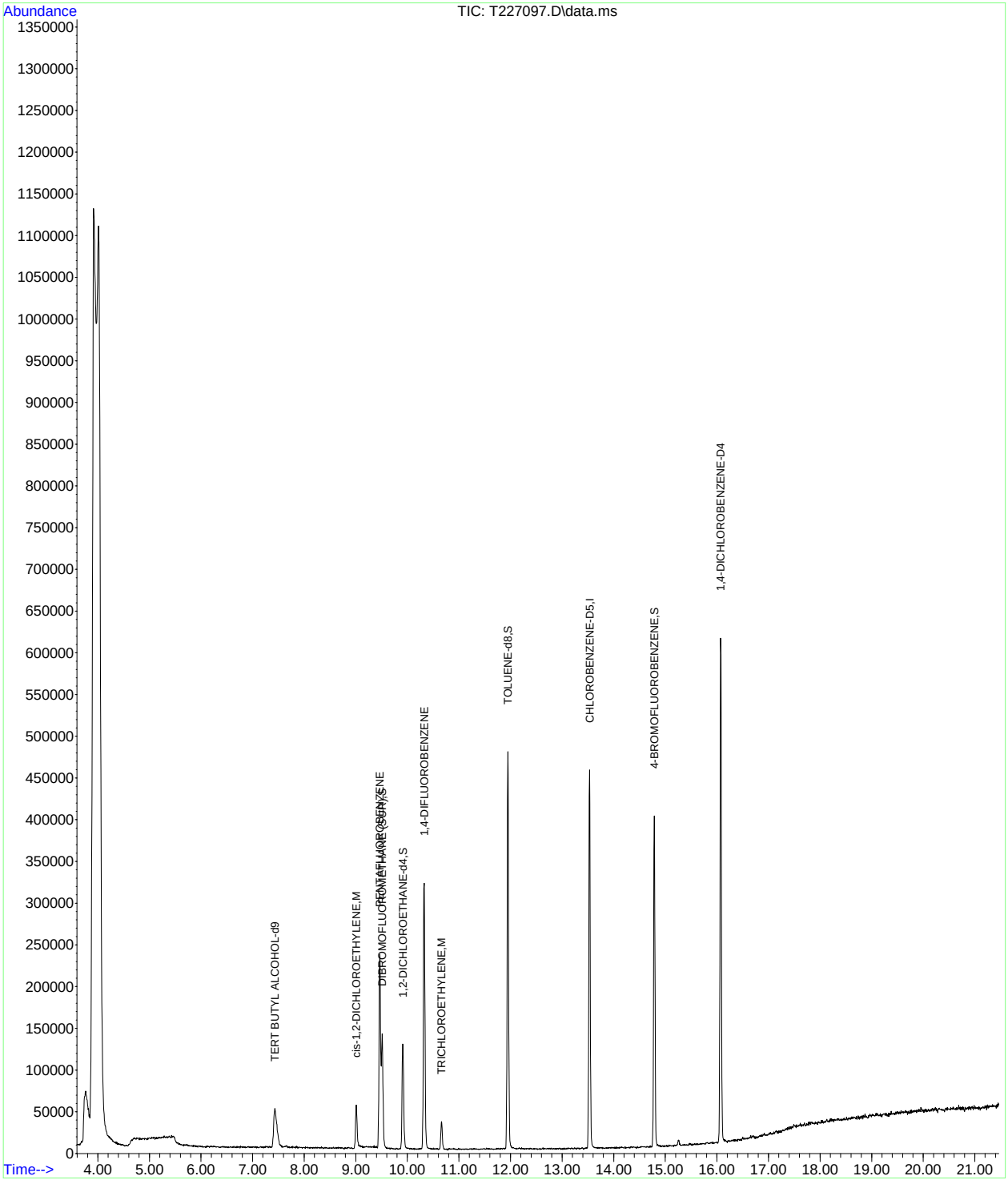
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.430	65	117744	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.464	168	182973	30.00	PPB	-0.01
49) 1,4-DIFLUOROBENZENE	10.326	114	283084	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.531	117	281428	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.072	152	180801	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.511	113	89521	28.78	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 95.93%			
50) 1,2-DICHLOROETHANE-d4	9.913	65	97453	28.24	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 94.13%			
67) TOLUENE-d8	11.947	98	348123	29.01	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 96.70%			
90) 4-BROMOFLUOROBENZENE	14.786	174	128157	29.65	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.83%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.009	96	24799	7.30	PPb	92
56) TRICHLOROETHYLENE	10.661	95	12340	4.43	PPb	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

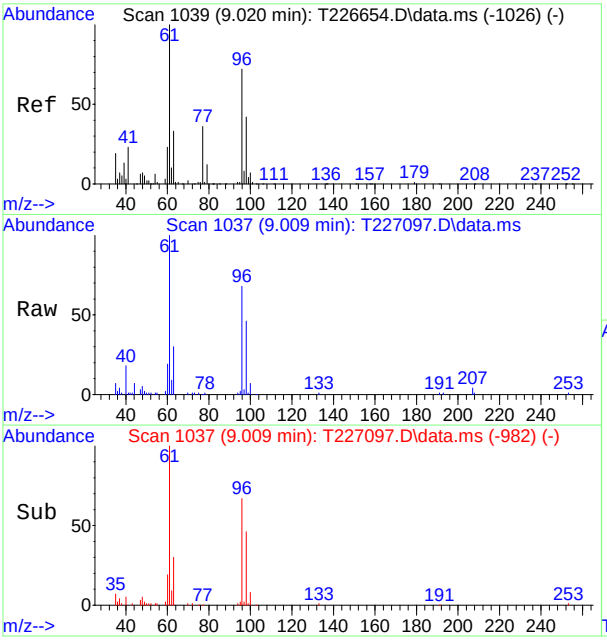
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9325part\
Data File : T227097.D
Acq On : 7 Oct 2017 1:48 pm
Operator : payalr
Sample : jc52477-8
Misc : MS20875,VT9325,W,,,,1
ALS Vial : 48 Sample Multiplier: 1

Quant Time: Oct 09 16:52:38 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration



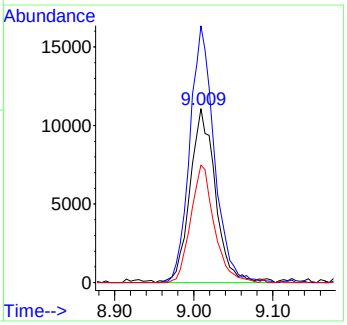
SGS ACCUTEST JC52477

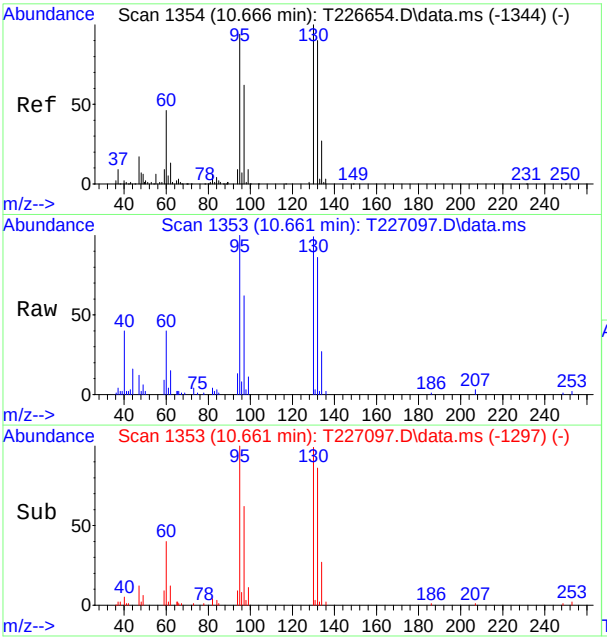


#36
cis-1,2-DICHLOROETHYLENE
Concen: 7.30 PPb
RT: 9.009 min Scan# 1037
Delta R.T. -0.010 min
Lab File: T227097.D
Acq: 7 Oct 2017 1:48 pm

Tgt Ion: 96 Resp: 24799

Ion	Ratio	Lower	Upper
96	100		
61	147.6	106.5	166.5
98	67.6	42.7	102.7

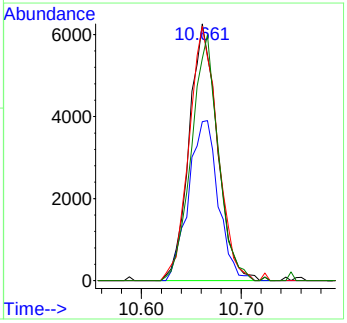




#56
TRICHLOROETHYLENE
Concen: 4.43 PPb
RT: 10.661 min Scan# 1353
Delta R.T. -0.005 min
Lab File: T227097.D
Acq: 7 Oct 2017 1:48 pm

Tgt Ion: 95 Resp: 12340

Ion	Ratio	Lower	Upper
95	100		
97	61.9	31.4	91.4
130	98.9	63.1	123.1
132	86.5	54.5	114.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9325part\
Data File : T227098.D
Acq On : 7 Oct 2017 2:18 pm
Operator : payalr
Sample : jc52477-9
Misc : MS20875,VT9325,W,,,,1
ALS Vial : 49 Sample Multiplier: 1

Quant Time: Oct 09 14:25:17 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

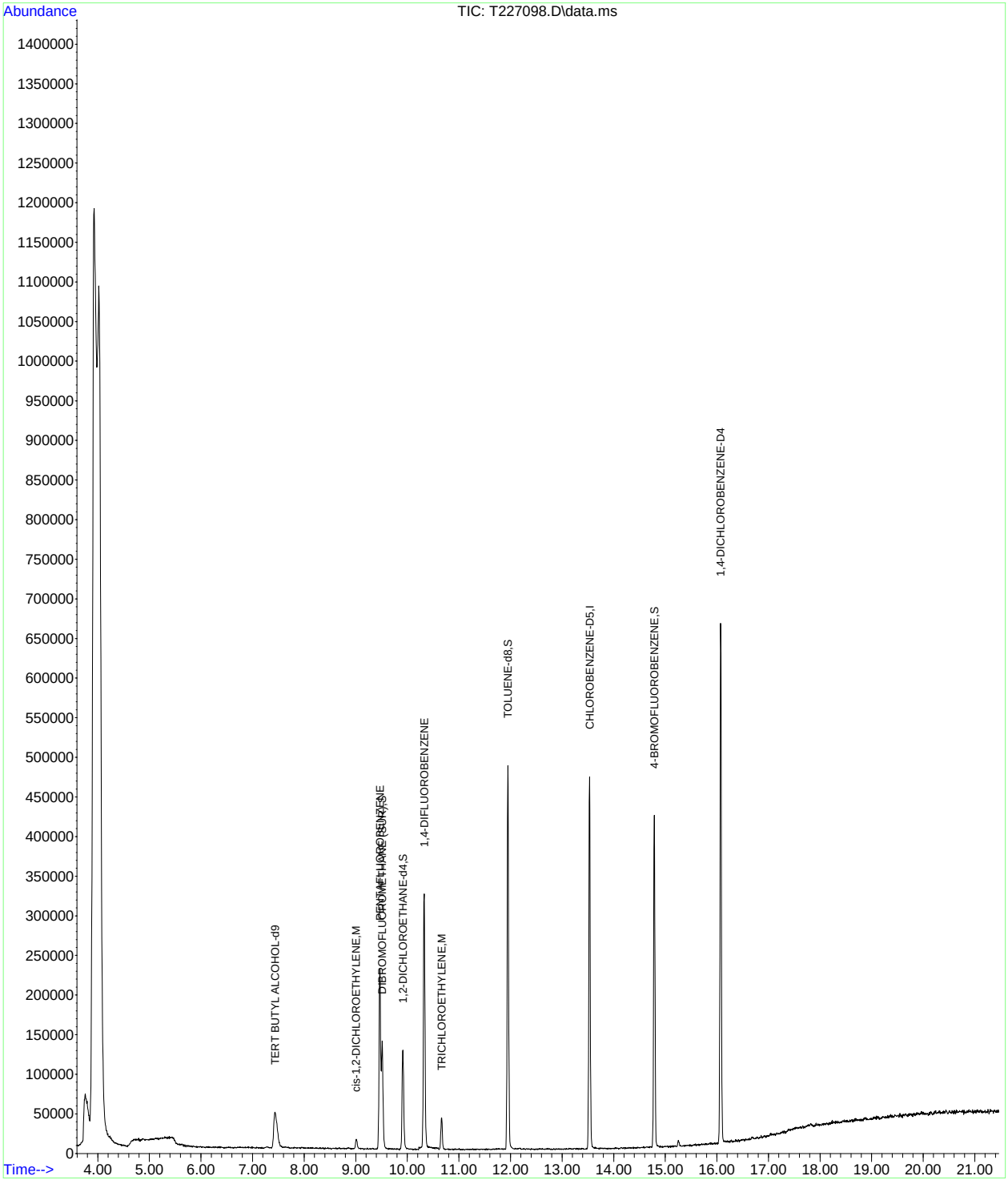
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.436	65	121153	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.469	168	183486	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.327	114	281420	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.532	117	290262	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.072	152	191089	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.511	113	88823	28.48	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 94.93%			
50) 1,2-DICHLOROETHANE-d4	9.914	65	96135	28.03	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 93.43%			
67) TOLUENE-d8	11.948	98	352185	28.46	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 94.87%			
90) 4-BROMOFLUOROBENZENE	14.786	174	133103	29.13	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 97.10%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.004	96	7737	2.27	PPb	85
56) TRICHLOROETHYLENE	10.667	95	15268	5.52	PPb	95

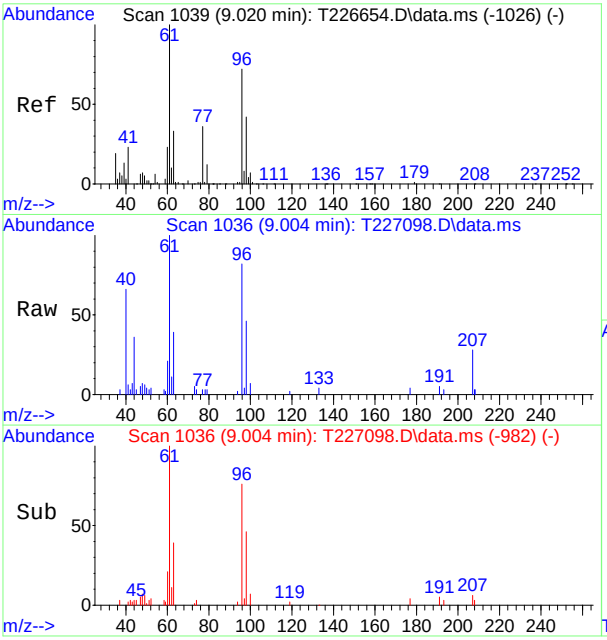
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9325part\
Data File : T227098.D
Acq On : 7 Oct 2017 2:18 pm
Operator : payalr
Sample : jc52477-9
Misc : MS20875,VT9325,W,,,,1
ALS Vial : 49 Sample Multiplier: 1

Quant Time: Oct 09 14:25:17 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

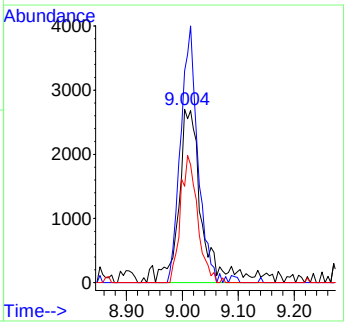


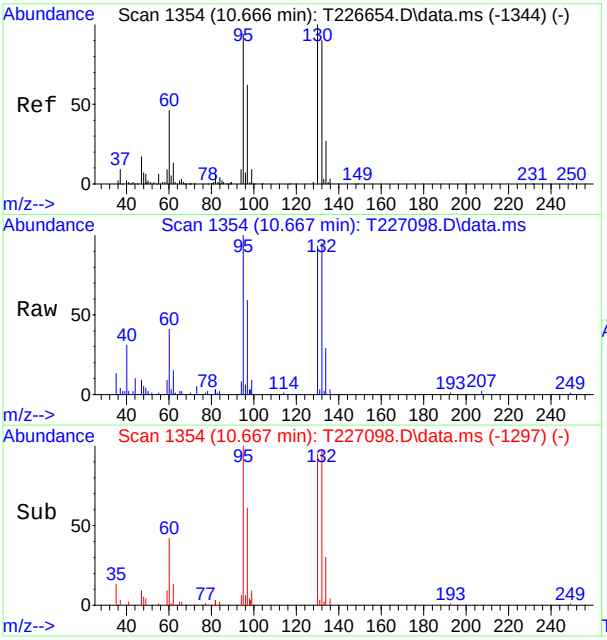


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.27 PPb
RT: 9.004 min Scan# 1036
Delta R.T. -0.015 min
Lab File: T227098.D
Acq: 7 Oct 2017 2:18 pm

Tgt Ion: 96 Resp: 7737

Ion	Ratio	Lower	Upper
96	100		
61	122.1	106.5	166.5
98	55.6	42.7	102.7

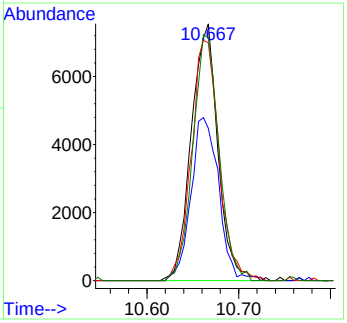




#56
TRICHLOROETHYLENE
Concen: 5.52 PPb
RT: 10.667 min Scan# 1354
Delta R.T. 0.000 min
Lab File: T227098.D
Acq: 7 Oct 2017 2:18 pm

Tgt Ion: 95 Resp: 15268

Ion	Ratio	Lower	Upper
95	100		
97	59.4	31.4	91.4
130	92.7	63.1	123.1
132	94.6	54.5	114.5



SGS ACCUTEST JC52477

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9325part\
Data File : T227096.D
Acq On : 7 Oct 2017 1:18 pm
Operator : payalr
Sample : jc52477-10
Misc : MS20875,VT9325,W,,,,1
ALS Vial : 47 Sample Multiplier: 1

Quant Time: Oct 09 14:24:03 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

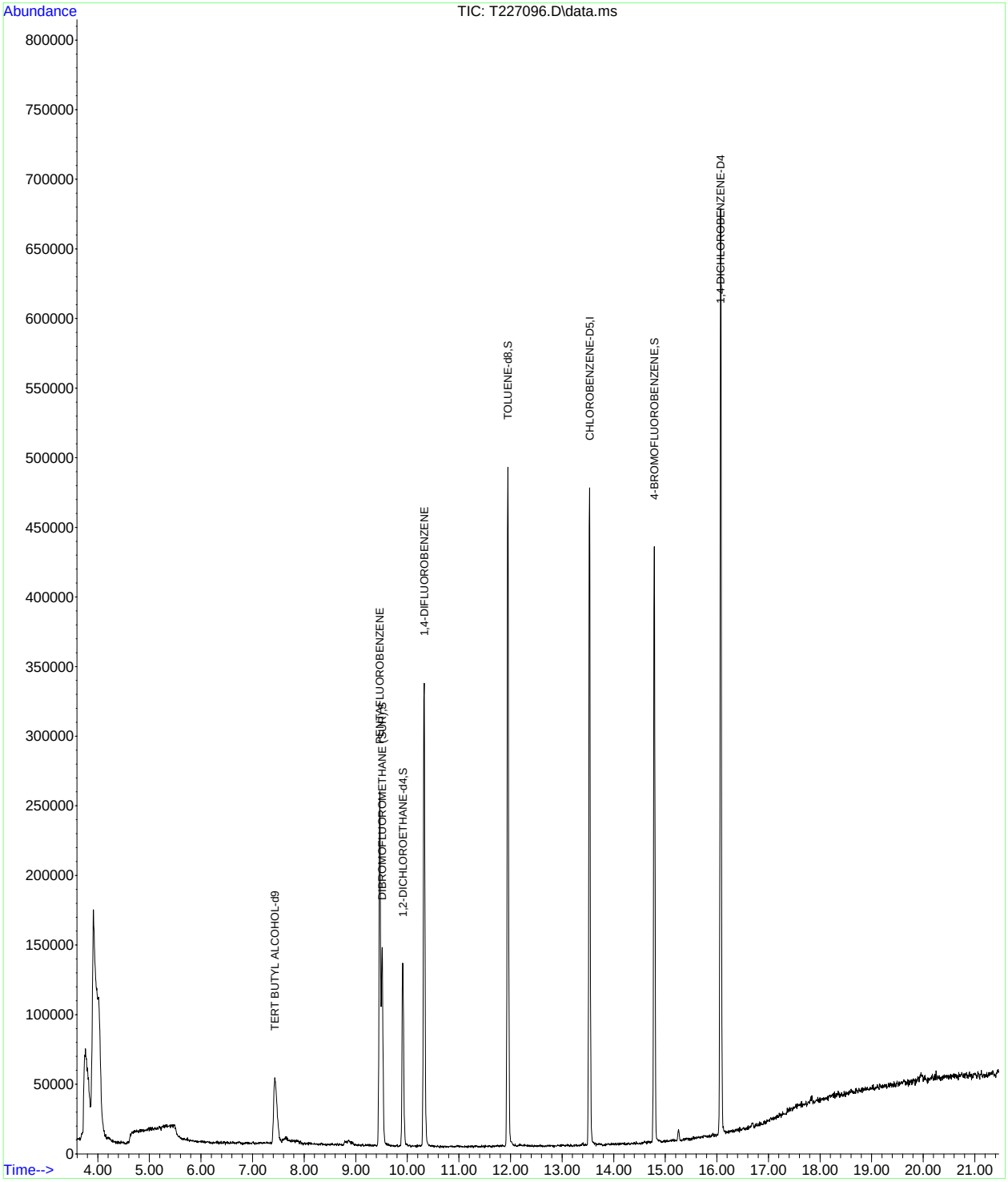
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.431	65	122323	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.464	168	199679	30.00	PPB	-0.01
49) 1,4-DIFLUOROBENZENE	10.327	114	298313	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.532	117	296577	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.072	152	191925	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.511	113	93844	27.65	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 92.17%			
50) 1,2-DICHLOROETHANE-d4	9.914	65	99934	27.48	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 91.60%			
67) TOLUENE-d8	11.948	98	362366	28.66	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 95.53%			
90) 4-BROMOFLUOROBENZENE	14.786	174	135504	29.53	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.43%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9325part\
Data File : T227096.D
Acq On : 7 Oct 2017 1:18 pm
Operator : payalr
Sample : jc52477-10
Misc : MS20875,VT9325,W,,,,1
ALS Vial : 47 Sample Multiplier: 1

Quant Time: Oct 09 14:24:03 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration



MT9306.M Mon Oct 09 14:26:04 2017 11 Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : t227052.d
Acq On : 6 Oct 2017 12:58 pm
Operator : payalr
Sample : mb2
Misc : MS20872,VT9324,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 06 16:20:50 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

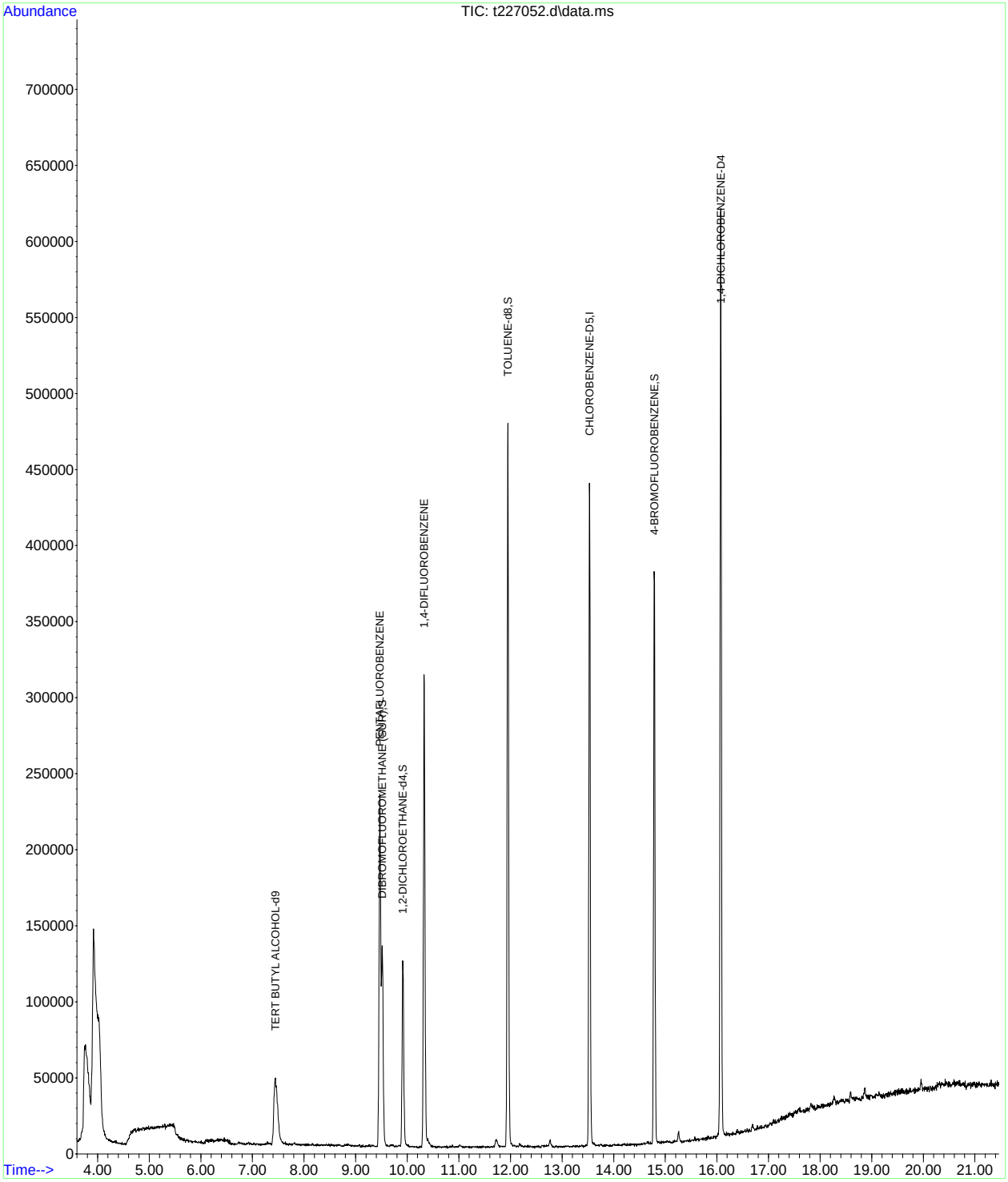
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.445	65	122755	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.468	168	189911	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.325	114	277431	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.530	117	271697	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.076	152	178515	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.515	113	91826	28.44	PPb	0.00
Spiked Amount 30.000	Range 79 - 120		Recovery = 94.80%			
50) 1,2-DICHLOROETHANE-d4	9.912	65	96296	28.48	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 94.93%			
67) TOLUENE-d8	11.951	98	348051	30.05	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 100.17%			
90) 4-BROMOFLUOROBENZENE	14.790	174	123019	28.82	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 96.07%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9324-2part\
Data File : t227052.d
Acq On : 6 Oct 2017 12:58 pm
Operator : payalr
Sample : mb2
Misc : MS20872,VT9324,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 06 16:20:50 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration



SGS ACCUTEST JC52477

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9325part\
Data File : T227077.D
Acq On : 7 Oct 2017 2:47 am
Operator : payalr
Sample : mb
Misc : MS20936,VT9325,W,,,,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Oct 09 14:23:13 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.431	65	115762	300.00	PPb	-0.02
4) PENTAFLUOROBENZENE	9.469	168	176900	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.327	114	268433	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.532	117	262524	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.072	152	169705	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.511	113	85953	28.58	PPb	-0.01
Spiked Amount 30.000	Range 79 - 120		Recovery = 95.27%			
50) 1,2-DICHLOROETHANE-d4	9.914	65	91234	27.88	PPB	0.00
Spiked Amount 30.000	Range 72 - 125		Recovery = 92.93%			
67) TOLUENE-d8	11.948	98	328930	29.39	PPB	0.00
Spiked Amount 30.000	Range 78 - 119		Recovery = 97.97%			
90) 4-BROMOFLUOROBENZENE	14.786	174	120170	29.62	PPB	0.00
Spiked Amount 30.000	Range 74 - 115		Recovery = 98.73%			
Target Compounds						Qvalue

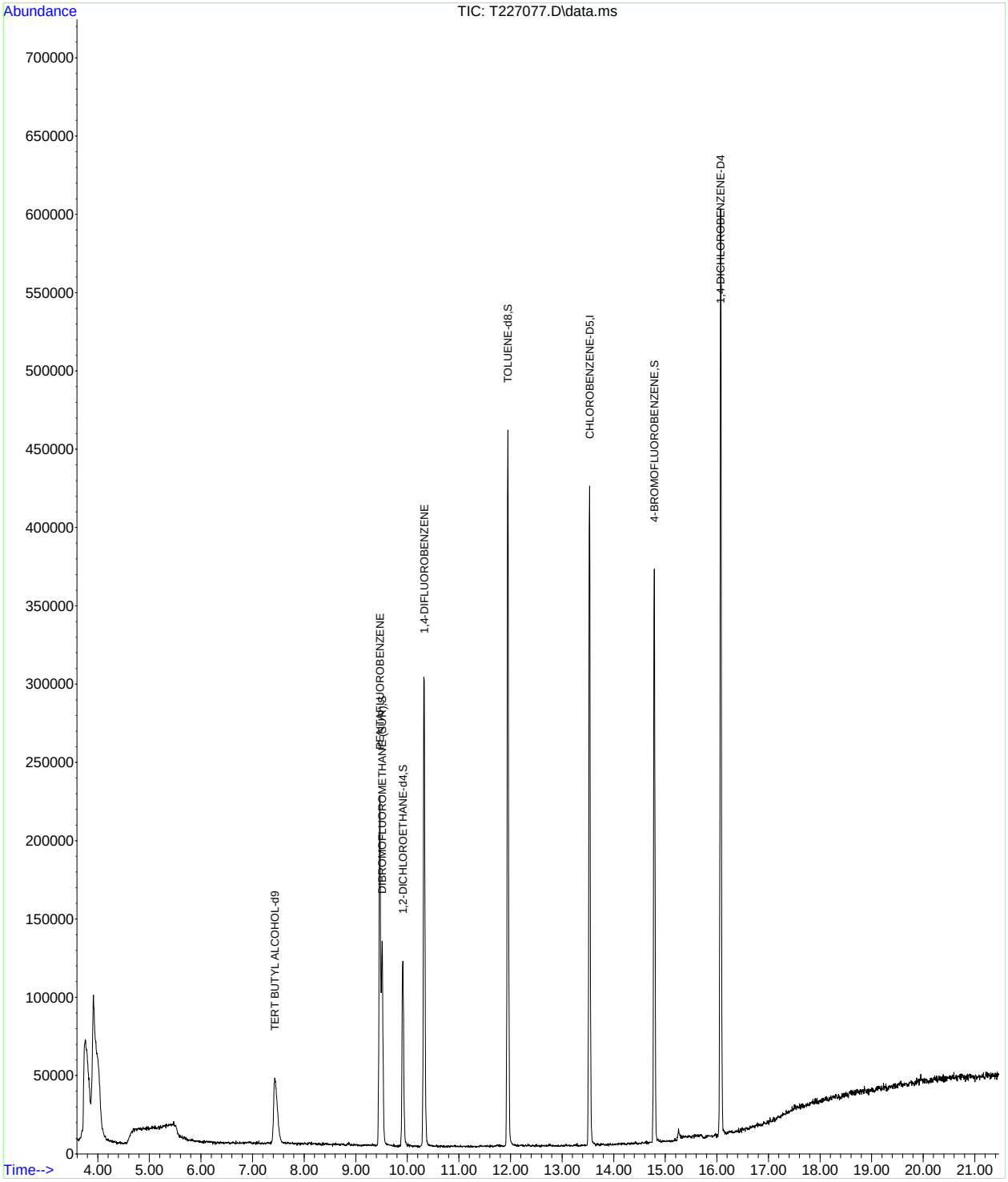
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC52477

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\T\vt9325part\
Data File : T227077.D
Acq On : 7 Oct 2017 2:47 am
Operator : payalr
Sample : mb
Misc : MS20936,VT9325,W,,,,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Oct 09 14:23:13 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9306.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Mon Oct 02 15:23:59 2017
Response via : Initial Calibration



SGS ACCUTEST JC52477

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:57	MA42964-STD1	1		STDA
10:02	MA42964-STD2	1		STDB
10:06	ZZZZZZ	1		
10:10	ZZZZZZ	1		
10:17	MA42964-ICV1	1		
10:31	MA42964-ICB1	1		
10:36	MA42964-ICCV1	1		
10:49	MA42964-CCB1	1		
10:53	MA42964-CRI1	1		
10:58	MA42964-CRID1	1		
11:02	MA42964-ICSA1	1		
11:06	MA42964-ICSAB1	1		
11:10	MA42964-HSTD1	1		
11:15	MA42964-HSTD2	1		
11:19	ZZZZZZ	1		
11:23	ZZZZZZ	1		
11:28	ZZZZZZ	1		
11:32	MA42964-CCV1	1		
11:36	MA42964-CCB2	1		
11:40	MP3360-MB1	1		
11:45	MP3360-B1	1		
11:49	MP3360-S1	1		
11:53	MP3360-S2	1		
11:57	JC52640-5	1		(sample used for QC only; not part of login JC52477)
12:01	MP3360-SD1	5		
12:06	ZZZZZZ	1		
12:10	ZZZZZZ	1		
12:14	ZZZZZZ	1		
12:18	MA42964-CCV2	1		
12:22	MA42964-CCB3	1		
12:27	ZZZZZZ	1		
12:31	MP3360-LC1	1		
12:35	MP3354-MB1	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:39	MP3354-B1	5		
12:44	MP3354-S1	5		
12:48	MP3354-S2	5		
12:52	JC52215-1A	5		(sample used for QC only; not part of login JC52477)
12:57	MP3354-SD1	25		
13:01	ZZZZZZ	5		
13:05	MA42964-CCV3	1		
13:09	MA42964-CCB4	1		
13:14	ZZZZZZ	5		
13:18	ZZZZZZ	5		
13:22	ZZZZZZ	5		
13:27	ZZZZZZ	5		
13:31	ZZZZZZ	5		
13:35	ZZZZZZ	5		
13:40	ZZZZZZ	5		
13:44	ZZZZZZ	5		
13:48	ZZZZZZ	5		
13:53	MA42964-CCV4	1		
13:57	MA42964-CCB5	1		
14:01	ZZZZZZ	5		
14:06	ZZZZZZ	5		
14:10	ZZZZZZ	5		
14:14	ZZZZZZ	5		
14:19	ZZZZZZ	5		
14:23	ZZZZZZ	5		
14:28	ZZZZZZ	5		
14:32	ZZZZZZ	5		
14:36	MA42964-CCV5	1		
14:40	MA42964-CCB6	1		
14:45	MP3360-S1	2		
14:49	MP3360-S2	2		
14:53	JC52640-5	2		(sample used for QC only; not part of login JC52477)
14:57	MP3360-SD1	10		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

	Time	Sample Description	Dilution Factor	PS Recov	Comments
	15:01	ZZZZZZ	2		
	15:06	ZZZZZZ	2		
	15:10	ZZZZZZ	2		
	15:14	ZZZZZZ	2		
	15:19	MA42964-CCV6	1		
	15:23	MA42964-CCB7	1		
	15:27	MP3344-MB1	1		
	15:31	MP3344-B1	1		
	15:35	MP3344-S1	1		
	15:39	MP3344-S2	1		
	15:43	JC52477-7A	1		
	15:48	MP3344-SD1	5		
	15:52	ZZZZZZ	1		
	15:56	ZZZZZZ	1		
	16:00	ZZZZZZ	1		
	16:05	MA42964-CCV7	1		
	16:09	MA42964-CCB8	1		
	16:13	ZZZZZZ	1		
	16:17	JC52477-8A	1		
	16:22	JC52477-9A	1		
---------->		Last reportable sample/prep for job JC52477			
	16:26	ZZZZZZ	1		
	16:30	ZZZZZZ	1		
	16:34	ZZZZZZ	1		
	16:39	MA42964-CCV8	1		
	16:43	MA42964-CCB9	1		
	16:47	MA42964-CRI2	1		
	16:51	MA42964-CRID2	1		
	16:56	MA42964-ICSA2	1		
	17:00	MA42964-ICSAB2	1		
	17:04	MA42964-CCV9	1		
	17:09	MA42964-CCB10	1		
---------->		Last reportable CCB for job JC52477			
	17:13	ZZZZZZ	25		
	17:17	MP3318-S1	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:22	MP3318-S2	5		
17:26	JC52355-2	5		(sample used for QC only; not part of login JC52477)
17:30	MP3318-SD1	25		
17:35	ZZZZZZ	1		
17:39	ZZZZZZ	1		
17:47	MA42964-CCV10	1		
17:51	MA42964-CCB11	1		
17:55	ZZZZZZ	1		
17:59	ZZZZZZ	1		
18:04	ZZZZZZ	1		
18:08	ZZZZZZ	1		
18:12	ZZZZZZ	1		
18:17	ZZZZZZ	1		
18:21	ZZZZZZ	1		
18:26	MA42964-CCV11	1		
18:30	MA42964-CCB12	1		
18:34	MP3318-S1	25		CCV out
18:38	MP3318-S2	25		CCV out
18:42	JC52355-2	25		(sample used for QC only; not part of login JC52477)
18:47	MP3318-SD1	125		CCV out
18:51	ZZZZZZ	5		
18:56	ZZZZZZ	5		
19:00	ZZZZZZ	1		
19:04	ZZZZZZ	5		
19:08	ZZZZZZ	1		
19:13	ZZZZZZ	1		
19:17	MA42964-CCV12	1		
19:21	MA42964-CCB13	1		
19:25	ZZZZZZ	2		
19:30	ZZZZZZ	1		
19:34	MP3349-MB1	1		
19:38	MP3349-B1	1		
19:42	MP3349-S1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:46	MP3349-S2	1		
19:50	JC52478-3	1		(sample used for QC only; not part of login JC52477)
19:55	MP3349-SD1	5		
19:59	ZZZZZZ	1		
20:03	ZZZZZZ	1		
20:08	MA42964-CCV13	1		
20:12	MA42964-CCB14	1		
20:16	ZZZZZZ	1		
20:20	ZZZZZZ	1		
20:25	ZZZZZZ	1		
20:29	MP3346-MB1	1		
20:33	MP3346-B1	1		
20:37	MP3346-S1	1		
20:41	MP3346-S2	1		
20:45	JC52503-1	1		(sample used for QC only; not part of login JC52477)
20:50	MP3346-SD1	5		
20:54	MA42964-CCV14	1		
20:58	MA42964-CCB15	1		
21:03	ZZZZZZ	1		
21:07	ZZZZZZ	1		
21:11	ZZZZZZ	1		
21:16	ZZZZZZ	1		
21:20	ZZZZZZ	1		
21:24	ZZZZZZ	1		
21:29	MP3345-MB1	1		
21:33	MP3345-B1	1		
21:37	MP3345-S1	1		
21:41	MP3345-S2	1		
21:45	MA42964-CCV15	1		
21:49	MA42964-CCB16	1		
21:54	JC52224-1	1		(sample used for QC only; not part of login JC52477)
21:58	MP3345-SD1	5		
22:02	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
22:06	ZZZZZZ	1		
22:11	ZZZZZZ	1		
22:15	ZZZZZZ	1		
22:20	ZZZZZZ	1		
22:24	ZZZZZZ	1		
22:28	ZZZZZZ	1		
22:32	ZZZZZZ	1		
22:37	MA42964-CCV16	1		
22:41	MA42964-CCB17	1		
22:45	ZZZZZZ	1		
22:49	MP3347-MB1	1		
22:54	MP3347-B1	1		
22:58	MP3347-S1	1		
23:02	MP3347-S2	1		
23:06	JC52310-1	1		(sample used for QC only; not part of login JC52477)
23:10	MP3347-SD1	5		
23:15	ZZZZZZ	1		
23:19	ZZZZZZ	1		
23:23	ZZZZZZ	1		
23:28	MA42964-CCV17	1		
23:32	MA42964-CCB18	1		
23:36	ZZZZZZ	1		
23:41	ZZZZZZ	1		
23:45	ZZZZZZ	1		
23:49	ZZZZZZ	1		
23:54	ZZZZZZ	1		
23:58	ZZZZZZ	1		
00:02	MP3348-MB1	1		
00:07	MP3348-B1	1		
00:11	MP3348-S1	1		
00:15	MP3348-S2	1		
00:19	MA42964-CCV18	1		
00:23	MA42964-CCB19	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:27	JC52417-1	1		(sample used for QC only; not part of login JC52477)
00:32	MP3348-SD1	5		
00:36	ZZZZZZ	1		
00:40	ZZZZZZ	1		
00:45	ZZZZZZ	1		
00:49	ZZZZZZ	1		
00:53	ZZZZZZ	1		
00:58	ZZZZZZ	1		
01:02	ZZZZZZ	1		
01:06	MA42964-CCV19	1		
01:10	MA42964-CCB20	1		
01:15	ZZZZZZ	1		
01:19	ZZZZZZ	1		
01:23	MA42964-CCV20	1		
01:27	MA42964-CCB21	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:57	MA42964-STD1	3350 R	95372 R	14019 R	7608 R
10:02	MA42964-STD2	3139	88019	13845	6575
10:06	ZZZZZZ	3223	89862	13838	6790
10:10	ZZZZZZ	3347	94647	13871	7579
10:17	MA42964-ICV1	3214	89921	13750	6798
10:31	MA42964-ICB1	3328	94624	13804	7549
10:36	MA42964-ICCV1	3200	89412	13625	6771
10:49	MA42964-CCB1	3305	93976	13323	7515
10:53	MA42964-CRI1	3282	93023	13721	7339
10:58	MA42964-CRID1	3306	93925	13814	7479
11:02	MA42964-ICSA1	2930	81622	13130	5991
11:06	MA42964-ICSAB1	2919	81379	13143	5971
11:10	MA42964-HSTD1	3269	92708	13851	7311
11:15	MA42964-HSTD2	2985	82843	13106	6047
11:19	ZZZZZZ	3245	91741	13614	7409
11:23	ZZZZZZ	3234	93496	13615	7488
11:28	ZZZZZZ	3319	94292	13710	7528
11:32	MA42964-CCV1	3175	88788	13513	6712
11:36	MA42964-CCB2	3298	93508	13606	7491
11:40	MP3360-MB1	3297	94551	13765	7489
11:45	MP3360-B1	3197	89979	13536	6877
11:49	MP3360-S1	2897	81375	13096	5905
11:53	MP3360-S2	2914	82297	13397	5977
11:57	JC52640-5	2914	82459	13278	5968
12:01	MP3360-SD1	3142	88799	13560	6665
12:06	ZZZZZZ	2928	82975	13300	6016
12:10	ZZZZZZ	2933	82928	13206	5896
12:14	ZZZZZZ	2999	85144	13348	6094
12:18	MA42964-CCV2	3171	89359	13549	6730
12:22	MA42964-CCB3	3301	93880	13566	7498
12:27	ZZZZZZ	2954	83922	13440	6023
12:31	MP3360-LC1	3267	91982	13712	6920
12:35	MP3354-MB1	3078	88134	12760	6485

INTERNAL STANDARD SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:39	MP3354-B1	3099	86891	13429	6458
12:44	MP3354-S1	3094	86639	13368	6457
12:48	MP3354-S2	3094	86621	13378	6449
12:52	JC52215-1A	3073	85922	13003	6462
12:57	MP3354-SD1	3199	90242	13366	6993
13:01	ZZZZZZ	3060	85023	13220	6433
13:05	MA42964-CCV3	3148	88652	13360	6674
13:09	MA42964-CCB4	3265	92893	13172	7427
13:14	ZZZZZZ	3083	86403	13361	6477
13:18	ZZZZZZ	3074	85391	13244	6394
13:22	ZZZZZZ	3061	85830	13301	6467
13:27	ZZZZZZ	3071	85865	13282	6419
13:31	ZZZZZZ	3031	84886	13151	6338
13:35	ZZZZZZ	3042	85370	13110	6362
13:40	ZZZZZZ	3054	85704	13218	6411
13:44	ZZZZZZ	2984	85451	13055	6238
13:48	ZZZZZZ	2965	84066	12938	6203
13:53	MA42964-CCV4	3143	88151	13116	6637
13:57	MA42964-CCB5	3254	93605	13354	7405
14:01	ZZZZZZ	3072	85998	13186	6466
14:06	ZZZZZZ	3029	85142	12935	6328
14:10	ZZZZZZ	2998	84511	12881	6254
14:14	ZZZZZZ	2987	84014	12993	6252
14:19	ZZZZZZ	2991	86186	13108	6292
14:23	ZZZZZZ	3055	86038	13092	6432
14:28	ZZZZZZ	2985	84287	12890	6256
14:32	ZZZZZZ	3008	84199	12837	6255
14:36	MA42964-CCV5	3147	88067	13021	6651
14:40	MA42964-CCB6	3266	93387	13155	7427
14:45	MP3360-S1	No results reported for the elements associated with this internal standard.			
14:49	MP3360-S2	No results reported for the elements associated with this internal standard.			
14:53	JC52640-5	No results reported for the elements associated with this internal standard.			
14:57	MP3360-SD1	No results reported for the elements associated with this internal standard.			

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INTERNAL STANDARD SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:01	ZZZZZZ	3010	85352	12926	6262
15:06	ZZZZZZ	3014	85555	12910	6187
15:10	ZZZZZZ	3045	85850	12840	6325
15:14	ZZZZZZ	3030	85307	12915	6271
15:19	MA42964-CCV6	3139	88553	12999	6646
15:23	MA42964-CCB7	3248	93414	13032	7398
15:27	MP3344-MB1	3301	94859	13445	7584
15:31	MP3344-B1	3173	90414	13280	6863
15:35	MP3344-S1	3084	87877	13363	6508
15:39	MP3344-S2	3085	87758	13291	6499
15:43	JC52477-7A	3073	88819	13238	6689
15:48	MP3344-SD1	3194	90997	13054	7133
15:52	ZZZZZZ	2991	86120	13156	6354
15:56	ZZZZZZ	2871	82644	12987	5919
16:00	ZZZZZZ	3129	88871	13193	6734
16:05	MA42964-CCV7	3151	88479	12985	6676
16:09	MA42964-CCB8	3256	93051	12925	7394
16:13	ZZZZZZ	3150	89276	13198	6800
16:17	JC52477-8A	3138	89697	13210	6874
16:22	JC52477-9A	3140	89694	13202	6871
16:26	ZZZZZZ	3113	88917	13218	6755
16:30	ZZZZZZ	3130	89584	13261	6798
16:34	ZZZZZZ	3140	87489	13091	6807
16:39	MA42964-CCV8	3145	87931	12814	6645
16:43	MA42964-CCB9	3270	92135	13008	7406
16:47	MA42964-CRI2	3235	91594	12833	7220
16:51	MA42964-CRID2	3262	92465	12904	7365
16:56	MA42964-ICSA2	2889	80497	12342	5906
17:00	MA42964-ICSAB2	2883	80291	12234	5892
17:04	MA42964-CCV9	3151	88191	12643	6660
17:09	MA42964-CCB10	3265	93158	12778	7404
17:13	ZZZZZZ	2832	78425	12581	5738
17:17	MP3318-S1	2865	80694	12229	5888

INTERNAL STANDARD SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:22	MP3318-S2	2858	81016	12261	5882
17:26	JC52355-2	2852	80742	12244	5877
17:30	MP3318-SD1	3108	87514	12498	6640
17:35	ZZZZZZ	3307	94752	13138	7582
17:39	ZZZZZZ	3220	91340	13087	6941
17:47	MA42964-CCV10	3103	88297	12591	6581
17:51	MA42964-CCB11	3265	93138	12655	7396
17:55	ZZZZZZ	3352	87946	13109	6622
17:59	ZZZZZZ	3276	93170	12656	7440
18:04	ZZZZZZ	3276	92935	12695	7413
18:08	ZZZZZZ	3263	92836	12677	7381
18:12	ZZZZZZ	3305	93982	12770	7497
18:17	ZZZZZZ	3276	92795	12715	7417
18:21	ZZZZZZ	2981	84604	12217	6358
18:26	MA42964-CCV11	3144	87737	12106	6643
18:30	MA42964-CCB12	3260	92839	12554	7399
18:34	MP3318-S1	3095	87299	12403	6625
18:38	MP3318-S2	3100	87268	12395	6634
18:42	JC52355-2	3102	87864	12405	6644
18:47	MP3318-SD1	3222	90734	12310	7130
18:51	ZZZZZZ	2913	81272	12225	5988
18:56	ZZZZZZ	3158	89557	12477	6822
19:00	ZZZZZZ	2989	84833	12626	6192
19:04	ZZZZZZ	3145	89054	12072	6790
19:08	ZZZZZZ	3292	94173	12958	7554
19:13	ZZZZZZ	3204	90986	12969	6913
19:17	MA42964-CCV12	3135	87857	12507	6629
19:21	MA42964-CCB13	3249	93314	12653	7390
19:25	ZZZZZZ	3109	87837	12588	6595
19:30	ZZZZZZ	3022	85956	12697	6305
19:34	MP3349-MB1	3305	94840	12954	7573
19:38	MP3349-B1	3192	90846	12894	6893
19:42	MP3349-S1	3166	89988	12890	6755

INTERNAL STANDARD SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:46	MP3349-S2	3163	89965	12908	6743
19:50	JC52478-3	3221	91989	12936	7108
19:55	MP3349-SD1	3244	92346	12583	7308
19:59	ZZZZZZ	3298	92796	12818	7556
20:03	ZZZZZZ	3280	93375	12935	7297
20:08	MA42964-CCV13	3145	88172	12376	6665
20:12	MA42964-CCB14	3242	92993	12411	7372
20:16	ZZZZZZ	3228	91976	12865	7117
20:20	ZZZZZZ	3262	93159	12893	7258
20:25	ZZZZZZ	2968	84574	12515	6189
20:29	MP3346-MB1	3306	94741	12852	7594
20:33	MP3346-B1	3185	90630	12563	6877
20:37	MP3346-S1	3019	85959	12599	6276
20:41	MP3346-S2	3029	86643	12626	6294
20:45	JC52503-1	3036	86629	12627	6436
20:50	MP3346-SD1	3170	90541	12489	6958
20:54	MA42964-CCV14	3133	88495	12404	6648
20:58	MA42964-CCB15	3265	93244	12370	7421
21:03	ZZZZZZ	3295	94900	12887	7561
21:07	ZZZZZZ	3063	87345	12666	6483
21:11	ZZZZZZ	3041	86504	12581	6444
21:16	ZZZZZZ	3046	86946	12540	6456
21:20	ZZZZZZ	3021	86470	12591	6411
21:24	ZZZZZZ	3039	86733	12530	6442
21:29	MP3345-MB1	3294	94978	12850	7561
21:33	MP3345-B1	3199	91700	12931	6916
21:37	MP3345-S1	3047	87614	12727	6343
21:41	MP3345-S2	3045	87246	12675	6341
21:45	MA42964-CCV15	3131	88423	12292	6652
21:49	MA42964-CCB16	3210	93341	12357	7307
21:54	JC52224-1	3037	87295	12499	6502
21:58	MP3345-SD1	3178	91076	12361	7031
22:02	ZZZZZZ	2892	82653	12316	5952

INTERNAL STANDARD SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
22:06	ZZZZZZ	2967	84682	12224	6210
22:11	ZZZZZZ	2972	85153	12461	6223
22:15	ZZZZZZ	3004	84527	12393	6225
22:20	ZZZZZZ	3032	87291	12474	6498
22:24	ZZZZZZ	2885	82346	12247	5934
22:28	ZZZZZZ	2975	84699	12255	6218
22:32	ZZZZZZ	2964	84765	12364	6207
22:37	MA42964-CCV16	3141	88515	12034	6673
22:41	MA42964-CCB17	3263	89722	12065	7416
22:45	ZZZZZZ	2986	84155	12199	6182
22:49	MP3347-MB1	3298	94555	12457	7573
22:54	MP3347-B1	3187	91190	12508	6899
22:58	MP3347-S1	3002	86063	12317	6350
23:02	MP3347-S2	3002	86342	12283	6351
23:06	JC52310-1	3056	87250	12316	6491
23:10	MP3347-SD1	3195	90819	12142	7044
23:15	ZZZZZZ	2963	83916	12276	6085
23:19	ZZZZZZ	3152	89439	12324	6752
23:23	ZZZZZZ	2999	86336	12293	6387
23:28	MA42964-CCV17	3130	88450	11871	6653
23:32	MA42964-CCB18	3262	88872	12094	7429
23:36	ZZZZZZ	2981	85594	12206	6224
23:41	ZZZZZZ	3058	87431	12238	6511
23:45	ZZZZZZ	2951	83401	12044	6069
23:49	ZZZZZZ	3134	88885	12260	6728
23:54	ZZZZZZ	2994	86073	12186	6380
23:58	ZZZZZZ	2787	80369	11989	5731
00:02	MP3348-MB1	3295	94603	12436	7556
00:07	MP3348-B1	3191	91130	12322	6908
00:11	MP3348-S1	3015	84747	12304	6386
00:15	MP3348-S2	3020	86737	12287	6391
00:19	MA42964-CCV18	3055	88613	11985	6502
00:23	MA42964-CCB19	3261	93196	11884	7410

INTERNAL STANDARD SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA42964
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
00:27	JC52417-1	3096	88215	12161	6578
00:32	MP3348-SD1	3186	91086	11900	7040
00:36	ZZZZZZ	2834	80813	11777	5845
00:40	ZZZZZZ	3104	89445	12124	6737
00:45	ZZZZZZ	3030	86068	12156	6309
00:49	ZZZZZZ	3003	86347	12038	6407
00:53	ZZZZZZ	3108	88127	12052	6582
00:58	ZZZZZZ	2828	80786	11707	5856
01:02	ZZZZZZ	3105	89208	12081	6719
01:06	MA42964-CCV19	3133	88351	11759	6655
01:10	MA42964-CCB20	3275	93449	11798	7443
01:15	ZZZZZZ	3032	85721	11918	6284
01:19	ZZZZZZ	2986	86966	11897	6367
01:23	MA42964-CCV20	3129	88286	11711	6647
01:27	MA42964-CCB21	3255	93285	11826	7407

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

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BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42964 Units: ug/l

Time:			10:31		10:49		11:36		12:22	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2	anr							
Arsenic	3.0	1.6	anr							
Barium	200	.3	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.5								
Boron	100	1.1	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	3.5	anr							
Chromium	10	.9	anr							
Cobalt	50	.4	anr							
Copper	10	.8	-0.20	<10	0.10	<10	0.20	<10	0.0	<10
Iron	100	2.8	1.2	<100	4.6	<100	0.50	<100	6.2	<100
Lead	3.0	2.2	anr							
Lithium	50	1.9								
Magnesium	5000	24	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3	anr							
Nickel	10	.5	anr							
Phosphorus	50	1.4								
Potassium	10000	44	anr							
Selenium	10	2.6	anr							
Silicon	200	1.6								
Silver	10	1	0.50	<10	0.10	<10	0.40	<10	0.0	<10
Sodium	10000	9.7	anr							
Strontium	10	.1								
Sulfur	50	3.6								
Thallium	2.0	1.5	anr							
Tin	10	.9								
Titanium	10	.7								
Tungsten	50	1.4								
Vanadium	50	.8	anr							
Zinc	20	.4	0.0	<20	0.10	<20	0.50	<20	0.60	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42964 Units: ug/l

Time:			10:31		10:49		11:36		12:22	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42964 Units: ug/l

Time:			13:09		13:57		14:40		15:23	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2	anr							
Arsenic	3.0	1.6	anr							
Barium	200	.3	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.5								
Boron	100	1.1	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	3.5	anr							
Chromium	10	.9	anr							
Cobalt	50	.4	anr							
Copper	10	.8	0.40	<10	0.40	<10	0.50	<10	0.20	<10
Iron	100	2.8	5.4	<100	8.5	<100	11.1	<100	3.5	<100
Lead	3.0	2.2	anr							
Lithium	50	1.9								
Magnesium	5000	24	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3	anr							
Nickel	10	.5	anr							
Phosphorus	50	1.4								
Potassium	10000	44	anr							
Selenium	10	2.6	anr							
Silicon	200	1.6								
Silver	10	1	-0.10	<10	-0.20	<10	-0.40	<10	0.0	<10
Sodium	10000	9.7	anr							
Strontium	10	.1								
Sulfur	50	3.6								
Thallium	2.0	1.5	anr							
Tin	10	.9								
Titanium	10	.7								
Tungsten	50	1.4								
Vanadium	50	.8	anr							
Zinc	20	.4	0.70	<20	0.60	<20	0.60	<20	0.30	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42964 Units: ug/l

Time: / Sample ID:			13:09 CCB4		13:57 CCB5		14:40 CCB6		15:23 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

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BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42964 Units: ug/l

Time: / Sample ID:			16:09 CCB8		16:43 CCB9		17:09 CCB10	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	16	anr					
Antimony	6.0	2	anr					
Arsenic	3.0	1.6	anr					
Barium	200	.3	anr					
Beryllium	1.0	.1	anr					
Bismuth	20	3.5						
Boron	100	1.1	anr					
Cadmium	3.0	.4	anr					
Calcium	5000	3.5	anr					
Chromium	10	.9	anr					
Cobalt	50	.4	anr					
Copper	10	.8	0.60	<10	0.20	<10	-0.10	<10
Iron	100	2.8	10.2	<100*(a)	10.2	<100*(a)	3.1	<100
Lead	3.0	2.2	anr					
Lithium	50	1.9						
Magnesium	5000	24	anr					
Manganese	15	.2	anr					
Molybdenum	20	.3	anr					
Nickel	10	.5	anr					
Phosphorus	50	1.4						
Potassium	10000	44	anr					
Selenium	10	2.6	anr					
Silicon	200	1.6						
Silver	10	1	0.30	<10	-0.80	<10	-0.10	<10
Sodium	10000	9.7	anr					
Strontium	10	.1						
Sulfur	50	3.6						
Thallium	2.0	1.5	anr					
Tin	10	.9						
Titanium	10	.7						
Tungsten	50	1.4						
Vanadium	50	.8	anr					
Zinc	20	.4	0.70	<20	0.70	<20	0.30	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA42964 Units: ug/l

Time:			16:09		16:43		17:09	
Sample ID:			CCB8		CCB9		CCB10	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zirconium	10	.4						

(*) Outside of QC limits
(anr) Analyte not requested
(a) All reported results <RL or >10x CCB value.

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		10:36	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	2000	1970	98.5
Iron	40000	41100	102.8
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	249	99.6
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2040	102.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		10:36	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		10:17			11:32			12:18	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1960	98.0	2000	1990	99.5	2000	2000	100.0
Iron	40000	41000	102.5	40000	41100	102.8	40000	41000	102.5
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	248	99.2	250	250	100.0	250	252	100.8
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2030	101.5	2000	2060	103.0	2000	2070	103.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		10:17			11:32			12:18	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		13:05			13:53			14:36	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2000	100.0	2000	2020	101.0	2000	2010	100.5
Iron	40000	40700	101.8	40000	40500	101.3	40000	40100	100.3
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	252	100.8	250	253	101.2	250	251	100.4
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2060	103.0	2000	2070	103.5	2000	2070	103.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		13:05			13:53			14:36	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		15:19			16:05			16:39	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2010	100.5	2000	1990	99.5	2000	2010	100.5
Iron	40000	39600	99.0	40000	38900	97.3	40000	38900	97.3
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	251	100.4	250	249	99.6	250	252	100.8
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2070	103.5	2000	2040	102.0	2000	2070	103.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		15:19			16:05			16:39	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		17:04	
Sample ID:	CCV	CCV9	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	2000	2020	101.0
Iron	40000	39400	98.5
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	251	100.4
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2090	104.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA42964 Units: ug/l

Time:		17:04	
Sample ID:	CCV	CCV9	
Metal	True	Results	% Rec

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested

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JC52477

HIGH STANDARD CHECK SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42964 Units: ug/l

Time:		11:10			11:15	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	5000	4980	99.6			
Iron				150000	148000	98.7
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	625	585	93.6			
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	5000	5130	102.6			

HIGH STANDARD CHECK SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA42964 Units: ug/l

Time:		11:10			11:15	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST
JC52477

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42964 Units: ug/l

Time:				10:53		10:58		16:47	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	9.6	96.0			10.1	101.0
Iron	100	500		109	109.0			108	108.0
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	4.5	90.0			4.3	86.0
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	21.6	108.0	10.8	108.0	22.2	111.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42964 Units: ug/l

Time:				10:53		10:58		16:47	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42964 Units: ug/l

Time:				16:51	
Sample ID:	CRI	CRIA	CRID	CRID2	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0		
Arsenic	8.0	20	3.0	anr	
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0		
Iron	100	500			
Lead	3.0	20	2.5		
Lithium	50				
Magnesium	5000	2000	100		
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0		
Silicon	200				
Silver	5.0		2.0		
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	
Zinc	20		10	11.1	111.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA42964 Units: ug/l

Time:				16:51	
Sample ID:	CRI	CRIA	CRID	CRID2	
Metal	True	True	True	Results	% Rec
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42964 Units: ug/l

Time:			11:02		11:06		16:56		17:00	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	524000	104.8	518000	103.6	530000	106.0	531000	106.2
Antimony		1000	-0.40		976	97.6	-1.2		989	98.9
Arsenic		1000	-4.8		1030	103.0	-3.8		1050	105.0
Barium		500	-1.0		515	103.0	-0.70		534	106.8
Beryllium		500	0.30		498	99.6	0.20		495	99.0
Bismuth		500	0.20		529	105.8	2.0		535	107.0
Boron		500	-2.3		503	100.6	-3.7		507	101.4
Cadmium		1000	0.20		1030	103.0	-0.30		1050	105.0
Calcium	400000	400000	397000	99.3	401000	100.3	393000	98.3	395000	98.8
Chromium		500	-1.2		489	97.8	-0.60		502	100.4
Cobalt		500	1.0		488	97.6	1.0		495	99.0
Copper		500	5.1		512	102.4	4.0		524	104.8
Iron	200000	200000	208000	104.0	204000	102.0	199000	99.5	197000	98.5
Lead		1000	2.5		966	96.6	2.6		989	98.9
Lithium		500	-2.0		530	106.0	-1.4		564	112.8
Magnesium	500000	500000	519000	103.8	524000	104.8	502000	100.4	512000	102.4
Manganese		500	-1.4		503	100.6	-2.7		515	103.0
Molybdenum		500	-1.0		511	102.2	-1.2		521	104.2
Nickel		1000	0.60		973	97.3	0.20		991	99.1
Phosphorus		500	-7.5		495	99.0	-5.0		514	102.8
Potassium			-240		-470		-490		-520	
Selenium		1000	-1.9		970	97.0	-9.0		973	97.3
Silicon		500	-11		510	102.0	-9.1		522	104.4
Silver		1000	0.10		1020	102.0	-4.8		1030	103.0
Sodium			95.2		131		-37		62.4	
Strontium		500	-0.50		540	108.0	0.0		555	111.0
Sulfur		500	-16		488	97.6	-8.5		499	99.8
Thallium		1000	1.9		1020	102.0	-0.70		1040	104.0
Tin		500	-2.3		460	92.0	-1.3		469	93.8
Titanium		500	-0.20		507	101.4	-0.10		516	103.2
Tungsten		500	-1.4		491	98.2	0.30		499	99.8
Vanadium		500	-0.10		492	98.4	0.50		503	100.6
Zinc		1000	-1.8		954	95.4	-1.8		974	97.4

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SE100817M1.ICP Date Analyzed: 10/08/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA42964 Units: ug/l

Time:			11:02		11:06		16:56		17:00	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium		500	1.2		492	98.4	0.10		502	100.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H8100917W3.CSV Date Analyzed: 10/09/17 Methods: EPA 245.1
Analyst: JPM Run ID: MA42966
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:12	MA42966-STD1	1		B= 2.6048E-004, C= 3.5566E-002, R= 0.9998272
13:13	MA42966-STD2	1		STDB
13:15	MA42966-STD3	1		STDC
13:16	MA42966-STD4	1		STDD
13:18	MA42966-STD5	1		STDE
13:19	MA42966-STD6	1		STDF
13:22	MA42966-STD7	1		STDE
13:27	MA42966-ICV1	1		
13:28	MA42966-ICB1	1		
13:30	MA42966-ICCV1	1		
13:31	MA42966-CCB1	1		
13:36	MA42966-CRI1	1		
13:37	MP3389-MB1	1		
13:39	MP3389-B1	1		
13:40	MP3389-S1	1		
13:42	MP3389-S2	1		
13:43	JC52477-7A	1		
13:45	JC52477-8A	1		
13:46	JC52477-9A	1		
---------->	Last reportable sample/prep for job JC52477			
13:48	MA42966-CCV1	1		
13:49	MA42966-CCB2	1		
13:51	ZZZZZZ	1		
13:52	ZZZZZZ	1		
13:53	ZZZZZZ	1		
13:55	ZZZZZZ	1		
13:56	ZZZZZZ	1		
13:57	ZZZZZZ	1		
13:58	MP3390-MB1	1		
14:00	MA42966-CCV2	1		
14:01	MA42966-CCB3	1		
14:03	MP3390-B1	1		
14:04	ZZZZZZ	1		
14:06	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H8100917W3.CSV Date Analyzed: 10/09/17 Methods: EPA 245.1
Analyst: JPM Run ID: MA42966
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:08	ZZZZZZ	1		
14:10	MA42966-CRI2	1		
14:11	MA42966-CCV3	1		
14:12	MA42966-CCB4	1		

----------> Last reportable CCB for job JC52477
Refer to raw data for calibration curve and standards.

8.2
8

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H8100917W3.CSV Date Analyzed: 10/09/17 Methods: EPA 245.1
QC Limits: result < RL Run ID: MA42966 Units: ug/l

Time: / Sample ID:			13:28 ICB1		13:31 CCB1		13:49 CCB2		14:01 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.039	-0.086	<0.20	-0.047	<0.20	-0.060	<0.20	-0.061	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H8100917W3.CSV Date Analyzed: 10/09/17 Methods: EPA 245.1
QC Limits: result < RL Run ID: MA42966 Units: ug/l

Time:			14:12	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Mercury	0.20	.039	-0.032	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

8.2.1
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H8100917W3.CSV Date Analyzed: 10/09/17 Methods: EPA 245.1
QC Limits: 95 to 105 % Recovery Run ID: MA42966 Units: ug/l

Time:		13:30	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Mercury	2.5	2.6	104.0

(*) Outside of QC limits
(anr) Analyte not requested

8.2.2
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H8100917W3.CSV Date Analyzed: 10/09/17 Methods: EPA 245.1
QC Limits: 90 to 110 % Recovery Run ID: MA42966 Units: ug/l

Time:		13:27			13:48			14:00	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	3	3.2	106.7	2.5	2.5	100.0	2.5	2.4	96.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H8100917W3.CSV Date Analyzed: 10/09/17 Methods: EPA 245.1
QC Limits: 90 to 110 % Recovery Run ID: MA42966 Units: ug/l

Time:		14:11	
Sample ID:	CCV	CCV3	
Metal	True	Results	% Rec
Mercury	2.5	2.4	96.0

(*) Outside of QC limits
(anr) Analyte not requested

8.2.3
8

SGS ACCUTEST
JC52477

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H8100917W3.CSV Date Analyzed: 10/09/17 Methods: EPA 245.1
QC Limits: 70 to 130 % Recovery Run ID: MA42966 Units: ug/l

Time:			13:36		14:10	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Mercury	0.20		0.21	105.0	0.19	95.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/05/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	32		
Antimony	6.0	2	3		
Arsenic	3.0	1.6	2.6		
Barium	200	.3	1		
Beryllium	1.0	.1	.31		
Bismuth	20	3.5	5.5		
Boron	100	1.1	7.8		
Cadmium	3.0	.4	.69		
Calcium	5000	3.5	48		
Chromium	10	.9	1.6		
Cobalt	50	.4	.7		
Copper	10	.8	6.5	1.1	<10
Iron	100	2.8	20	11.7	<100
Lead	3.0	2.2	2.6		
Lithium	50	1.9	11		
Magnesium	5000	24	59		
Manganese	15	.2	.78		
Molybdenum	20	.3	5.7		
Nickel	10	.5	5.2		
Phosphorus	50	1.4	14		
Potassium	10000	44	290		
Selenium	10	2.6	7.2		
Silicon	200	1.6	32		
Silver	10	1	3	0.0	<10
Sodium	10000	9.7	170		
Strontium	10	.1	.3		
Sulfur	50	3.6	14		
Thallium	2.0	1.5	1.5		
Tin	50	.9	7.6		
Titanium	10	.7	1.3		
Tungsten	50	1.4	7.8		
Vanadium	50	.8	.95		
Zinc	20	.4	2.2	1.4	<20

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/05/17

Metal	RL	IDL	MDL	MB raw	final
Zirconium	10	.4	1.2		

Associated samples MP3344: JC52477-7A, JC52477-8A, JC52477-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/05/17

Metal	JC52477-7A Original	MS	Spikelot MPEPA200.7	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Bismuth					
Boron	anr				
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	4.0	2050	2000	102.3	70-130
Iron	1660	26800	25000	100.6	70-130
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	0.0	86.9	80	108.6	70-130
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	15.3	2080	2000	103.2	70-130

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/05/17

Metal	JC52477-7A Original MS	Spikelot MPEPA200.7% Rec	QC Limits
Zirconium			

Associated samples MP3344: JC52477-7A, JC52477-8A, JC52477-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/05/17

Metal	JC52477-7A Original	MSD	Spikelot MPEPA200.7	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	4.0	2060	2000	102.8	0.5	10
Iron	1660	26900	25000	101.0	0.4	10
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	0.0	87.0	80	108.8	0.1	10
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	15.3	2080	2000	103.2	0.0	10

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/05/17

Metal	JC52477-7A Original MSD	Spikelot MPEPA200.7% Rec	MSD RPD	QC Limit
Zirconium				

Associated samples MP3344: JC52477-7A, JC52477-8A, JC52477-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/05/17

Metal	BSP Result	Spikelot MPEPA200.7	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Bismuth				
Boron	anr			
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	2050	2000	102.5	85-115
Iron	26800	25000	107.2	85-115
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	86.1	80	107.6	85-115
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	2120	2000	106.0	85-115

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/05/17

Metal	BSP Result	Spikelot MPEPA200.7	% Rec	QC Limits
Zirconium				

Associated samples MP3344: JC52477-7A, JC52477-8A, JC52477-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/05/17

Metal	JC52477-7A Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Bismuth				
Boron	anr			
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	4.00	5.60	40.0 (a)	0-10
Iron	1660	1660	0.2	0-10
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	15.3	22.1	44.4 (a)	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3344
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/05/17

	JC52477-7A		QC
Metal	Original SDL 1:5	%DIF	Limits
Zirconium			

Associated samples MP3344: JC52477-7A, JC52477-8A, JC52477-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3389 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/09/17

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.039	.082	0.037	<0.20

Associated samples MP3389: JC52477-7A, JC52477-8A, JC52477-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3389 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/09/17

Metal	JC52477-7A Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0	2.1	2	105.0	70-130

Associated samples MP3389: JC52477-7A, JC52477-8A, JC52477-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3389 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/09/17

Metal	JC52477-7A Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.0	2.1	2	105.0	0.0	19

Associated samples MP3389: JC52477-7A, JC52477-8A, JC52477-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST
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JC52477

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP3389
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 10/09/17

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	2.2	2	110.0	85-115

Associated samples MP3389: JC52477-7A, JC52477-8A, JC52477-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide	GP8268/GN70811	0.010	0.0	mg/l	0.0833	0.0948	113.8*(a)	90-110%
HEM Oil and Grease	GP8313/GN70615	5.0	0.0	mg/l	40.09	36.4	90.8	78-114%
Solids, Total Suspended	GN70524	4.0	0.0	mg/l				

Associated Samples:
Batch GP8268: JC52477-7A, JC52477-8A, JC52477-9A
Batch GP8313: JC52477-7A, JC52477-8A, JC52477-9A
Batch GN70524: JC52477-7A, JC52477-8A, JC52477-9A
(*) Outside of QC limits
(a) Spike blank indicates possible high bias, but all associated samples < DL.

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Cyanide	GP8268/GN70515	JC52292-1	mg/l	0.0079	0.0	200.0(a)	0-32%
HEM Oil and Grease	GP8313/GN70615	JC52477-8A	mg/l	4.3	2.5	52.9(a)	0-18%
Solids, Total Suspended	GN70524	JC52388-2	mg/l	15.3	15.7	2.6	0-17%

Associated Samples:
Batch GP8268: JC52477-7A, JC52477-8A, JC52477-9A
Batch GP8313: JC52477-7A, JC52477-8A, JC52477-9A
Batch GN70524: JC52477-7A, JC52477-8A, JC52477-9A
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Cyanide	GP8268/GN70515	JC52292-1	mg/l	0.0079	0.0833	0.060	62.5N(a)	90-110%
HEM Oil and Grease	GP8313/GN70615	JC52477-7A	mg/l	4.4	41.12	37.3	80.0	78-114%

Associated Samples:
Batch GP8268: JC52477-7A, JC52477-8A, JC52477-9A
Batch GP8313: JC52477-7A, JC52477-8A, JC52477-9A
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E100517W2.CN Date Analyzed: 10/05/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SW846 9012B/L
Analyst: BM Run ID: GN70515
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:59	GN70515-STD1	1		STDA
12:01	GN70515-STD2	1		STDB
12:02	GN70515-STD3	1		STDC
12:03	GN70515-STD4	1		STDD
12:05	GN70515-STD5	1		STDE
12:06	GN70515-STD6	1		STDF
12:08	GN70515-STD7	1		STDG
12:09	GN70515-ICV1	1		
12:10	GN70515-ICB1	1		
13:17	GN70515-CCV1	1		
13:18	GN70515-CCB1	1		
13:28	GP8241-MB1	1		
13:29	GP8241-B1	1		
13:31	GP8241-B2	1		
13:32	GP8241-S1	1		
13:33	GN70515-CCV2	1		
13:35	GN70515-CCB2	1		
13:36	GP8241-D1	1		
13:37	JC51949-1	1		(sample used for QC only; not part of login JC52477)
13:39	ZZZZZZ	1		
13:40	ZZZZZZ	1		
13:41	ZZZZZZ	1		
13:43	ZZZZZZ	1		
13:44	GP8240-MB1	1		
13:46	GP8240-B1	1		
13:47	GP8240-S1	1		
13:48	GP8240-S2	1		
13:50	GN70515-CCV3	1		
13:51	GN70515-CCB3	1		
13:52	GP8240-D1	1		
13:54	JC52150-1	1		(sample used for QC only; not part of login JC52477)
13:55	JC52150-2	1		(sample used for QC only; not part of login JC52477)
13:56	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E100517W2.CN Date Analyzed: 10/05/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SW846 9012B/L
Analyst: BM Run ID: GN70515
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:58	ZZZZZZ	1		
13:59	ZZZZZZ	1		
14:00	ZZZZZZ	1		
14:02	ZZZZZZ	1		
14:03	ZZZZZZ	1		
14:05	ZZZZZZ	1		
14:06	GN70515-CCV4	1		
14:07	GN70515-CCB4	1		
14:09	ZZZZZZ	1		
14:10	ZZZZZZ	1		
14:11	ZZZZZZ	1		
14:13	ZZZZZZ	1		
14:14	ZZZZZZ	1		
14:15	ZZZZZZ	1		
14:17	GP8239-MB1	1		
14:18	GP8239-B1	1		
14:20	GP8239-S1	1		
14:21	GP8239-S2	1		
14:22	GN70515-CCV5	1		
14:24	GN70515-CCB5	1		
14:25	GP8239-D1	1		
14:26	JC51477-3R	1		(sample used for QC only; not part of login JC52477)
14:28	JC52090-1	1		(sample used for QC only; not part of login JC52477)
14:29	ZZZZZZ	1		
14:30	ZZZZZZ	1		
14:32	ZZZZZZ	1		
14:33	ZZZZZZ	1		
14:35	ZZZZZZ	1		
14:36	ZZZZZZ	1		
14:37	ZZZZZZ	1		
14:39	GN70515-CCV6	1		
14:40	GN70515-CCB6	1		
14:41	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E100517W2.CN Date Analyzed: 10/05/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SW846 9012B/L
Analyst: BM Run ID: GN70515
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:43	ZZZZZZ	1		
14:44	ZZZZZZ	1		
14:45	ZZZZZZ	1		
14:47	ZZZZZZ	1		
14:48	ZZZZZZ	1		
14:49	ZZZZZZ	1		
14:51	ZZZZZZ	1		
14:52	ZZZZZZ	1		
14:54	ZZZZZZ	1		
14:55	GN70515-CCV7	1		
14:56	GN70515-CCB7	1		
14:58	ZZZZZZ	1		
14:59	GP8268-MB1	1		
15:00	GP8268-B1	1		
15:02	GP8268-S1	1		
15:03	GP8268-D1	1		
15:04	JC52292-1	1		(sample used for QC only; not part of login JC52477)
15:06	ZZZZZZ	1		
15:07	GP8267-MB1	1		
15:09	GP8267-B1	1		
15:10	GP8267-S1	1		
15:11	GN70515-CCV8	1		
15:13	GN70515-CCB8	1		
15:14	GP8267-D1	1		
15:15	JC52393-1	1		(sample used for QC only; not part of login JC52477)
15:17	ZZZZZZ	1		
15:18	ZZZZZZ	1		
15:19	ZZZZZZ	1		
15:23	GN70515-CCV9	1		
15:24	GN70515-CCB9	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E100517W2.CN Date Analyzed: 10/05/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SW846 9012B/L
Run ID: GN70515 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN70515-ICV1	Cyanide	0.31	0.010	0.0058	.3	103.3	90-110
GN70515-ICB1	Cyanide	0.0058 U	0.010	0.0058			
GN70515-CCV1	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70515-CCB1	Cyanide	0.0058 U	0.010	0.0058			
GN70515-CCV2	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70515-CCB2	Cyanide	0.0058 U	0.010	0.0058			
GN70515-CCV3	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70515-CCB3	Cyanide	0.0058 U	0.010	0.0058			
GN70515-CCV4	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70515-CCB4	Cyanide	0.0058 U	0.010	0.0058			
GN70515-CCV5	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70515-CCB5	Cyanide	0.0058 U	0.010	0.0058			
GN70515-CCV6	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70515-CCB6	Cyanide	0.0058 U	0.010	0.0058			
GN70515-CCV7	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70515-CCB7	Cyanide	0.0058 U	0.010	0.0058			
GN70515-CCV8	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70515-CCB8	Cyanide	0.0058 U	0.010	0.0058			
GN70515-CCV9	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70515-CCB9	Cyanide	0.0058 U	0.010	0.0058			

(!) Outside of QC limits

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E101117W1.CN Date Analyzed: 10/11/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SM4500CN I-20
Analyst: BM Run ID: GN70811
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:09	GN70811-STD1	1		STDA
09:10	GN70811-STD2	1		STDB
09:12	GN70811-STD3	1		STDC
09:13	GN70811-STD4	1		STDD
09:15	GN70811-STD5	1		STDE
09:16	GN70811-STD6	1		STDF
09:17	GN70811-STD7	1		STDG
09:19	GN70811-ICV1	1		
09:20	GN70811-ICB1	1		
09:21	GN70811-CCV1	1		
09:23	GN70811-CCB1	1		
09:24	GP8181-MB2	1		
09:25	GP8181-B2	1		
09:27	ZZZZZZ	1		
09:28	ZZZZZZ	1		
09:30	ZZZZZZ	1		
09:31	ZZZZZZ	1		
09:32	ZZZZZZ	1		
09:34	ZZZZZZ	1		
09:35	GP8268-MB3	1		
09:36	GP8268-B3	1		
09:38	GN70811-CCV2	1		
09:39	GN70811-CCB2	1		
09:40	GP8268-S2	1		
09:42	ZZZZZZ	1		
09:43	JC52477-7A	1		
09:45	JC52477-8A	1		
09:46	JC52477-9A	1		
09:47	JC52657-1	1		(sample used for QC only; not part of login JC52477)
09:49	ZZZZZZ	1		
09:50	GP8241-MB2	1		
09:51	GP8241-B3	1		
09:53	GP8241-B4	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E101117W1.CN Date Analyzed: 10/11/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SM4500CN I-20
Analyst: BM Run ID: GN70811
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:54	GN70811-CCV3	1		
09:55	GN70811-CCB3	1		
09:57	ZZZZZZ	1		
09:58	ZZZZZZ	1		
09:59	ZZZZZZ	1		
10:01	ZZZZZZ	1		
10:02	ZZZZZZ	1		
10:04	GP8355-MB1	1		
10:05	GP8355-B1	1		
10:06	GP8355-B2	1		
10:08	GP8355-S1	1		
10:09	GP8355-S2	1		
10:10	GN70811-CCV4	1		
10:12	GN70811-CCB4	1		
10:13	GP8355-D1	1		
10:14	ZZZZZZ	1		
10:16	JC52611-3	1		(sample used for QC only; not part of login JC52477)
10:17	JC52611-4	1		(sample used for QC only; not part of login JC52477)
10:18	ZZZZZZ	1		
10:20	ZZZZZZ	1		
10:21	ZZZZZZ	1		
10:23	ZZZZZZ	1		
10:24	ZZZZZZ	1		
10:25	ZZZZZZ	1		
10:27	GN70811-CCV5	1		
10:28	GN70811-CCB5	1		
10:29	ZZZZZZ	1		
10:31	ZZZZZZ	1		
10:32	ZZZZZZ	1		
10:34	GP8356-MB1	1		
10:35	GP8356-B1	1		
10:36	GP8356-B2	1		
10:38	GP8356-S1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E101117W1.CN Date Analyzed: 10/11/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SM4500CN I-20
Analyst: BM Run ID: GN70811
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:39	GP8356-S2	1		
10:40	GP8356-D1	1		
10:42	ZZZZZZ	1		
10:43	GN70811-CCV6	1		
10:44	GN70811-CCB6	1		
10:46	JC52528-2	1		(sample used for QC only; not part of login JC52477)
10:47	ZZZZZZ	1		
10:48	ZZZZZZ	1		
10:50	ZZZZZZ	1		
10:51	ZZZZZZ	1		
10:53	ZZZZZZ	1		
10:54	ZZZZZZ	1		
10:55	ZZZZZZ	1		
10:57	ZZZZZZ	1		
10:58	ZZZZZZ	1		
10:59	GN70811-CCV7	1		
11:01	GN70811-CCB7	1		
11:02	ZZZZZZ	1		
11:03	ZZZZZZ	1		
11:05	ZZZZZZ	1		
11:06	ZZZZZZ	1		
11:08	ZZZZZZ	1		
11:09	ZZZZZZ	1		
11:10	ZZZZZZ	1		
11:12	GP8352-MB1	1		
11:13	GP8352-B1	1		
11:14	GP8352-S1	1		
11:16	GN70811-CCV8	1		
11:17	GN70811-CCB8	1		
11:18	GP8352-S2	1		
11:20	GP8352-D1	1		
11:21	JC52272-6	1		(sample used for QC only; not part of login JC52477)
11:23	JC52272-7	1		(sample used for QC only; not part of login JC52477)

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E101117W1.CN Date Analyzed: 10/11/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SM4500CN I-20
Analyst: BM Run ID: GN70811
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:24	ZZZZZZ	1		
11:25	ZZZZZZ	1		
11:27	ZZZZZZ	1		
11:28	ZZZZZZ	1		
11:29	ZZZZZZ	1		
11:31	ZZZZZZ	1		
11:32	GN70811-CCV9	1		
11:33	GN70811-CCB9	1		
11:35	ZZZZZZ	1		
11:36	ZZZZZZ	1		
11:37	ZZZZZZ	1		
11:39	ZZZZZZ	1		
11:40	ZZZZZZ	1		
11:42	ZZZZZZ	1		
11:43	GP8353-MB1	1		BSP failed high back to need.
11:44	GP8353-B1	1		BSP failed high back to need.
11:46	GP8353-S1	1		BSP failed high back to need.
11:47	GP8353-S2	1		BSP failed high back to need.
11:48	GN70811-CCV10	1		
11:50	GN70811-CCB10	1		
11:51	GP8353-D1	1		BSP failed high back to need.
11:52	JC52591-1	1		(sample used for QC only; not part of login JC52477)
11:54	JC52591-2	1		(sample used for QC only; not part of login JC52477)
11:55	ZZZZZZ	1		
11:57	ZZZZZZ	1		
11:58	ZZZZZZ	1		
11:59	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:02	ZZZZZZ	1		
12:03	ZZZZZZ	1		
12:05	GN70811-CCV11	1		
12:06	GN70811-CCB11	1		
12:07	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E101117W1.CN Date Analyzed: 10/11/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SM4500CN I-20
Analyst: BM Run ID: GN70811
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:09	ZZZZZZ	1		
12:10	ZZZZZZ	1		
12:12	ZZZZZZ	1		
12:13	ZZZZZZ	1		
12:14	ZZZZZZ	1		
12:16	ZZZZZZ	1		
12:17	ZZZZZZ	1		
12:18	ZZZZZZ	1		
12:20	ZZZZZZ	1		
12:21	GN70811-CCV12	1		
12:22	GN70811-CCB12	1		
12:24	ZZZZZZ	1		
12:27	GN70811-CCV13	1		
12:28	GN70811-CCB13	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC52477
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E101117W1.CN Date Analyzed: 10/11/17 Methods: EPA 335.4/LACHAT, SM4500CN I-2011, SM4500CN I-20
Run ID: GN70811 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN70811-ICV1	Cyanide	0.30	0.010	0.0058	.3	100.0	90-110
GN70811-ICB1	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV1	Cyanide	0.42	0.010	0.0058	.4	105.0	90-110
GN70811-CCB1	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV2	Cyanide	0.42	0.010	0.0058	.4	105.0	90-110
GN70811-CCB2	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV3	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB3	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV4	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB4	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV5	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB5	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV6	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB6	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV7	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB7	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV8	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB8	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV9	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB9	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV10	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB10	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV11	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB11	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV12	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB12	Cyanide	0.0058 U	0.010	0.0058			
GN70811-CCV13	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN70811-CCB13	Cyanide	0.0058 U	0.010	0.0058			

(!) Outside of QC limits

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e-Hardcopy 2.0
Automated Report

Technical Report for

United Technologies Corporation

SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH 182602727

SGS Accutest Job Number: JC55198

Sampling Date: 11/09/17

Report to:

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ATTN: Susan Hall

Total number of pages in report: **176**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Diane Komar 732-329-0200

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Sample Summary

United Technologies Corporation

Job No: JC55198

SECORINI: Zanesville, [redacted] Avenue, Zanesville, OH
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC55198-1	11/09/17	09:04	DM	11/10/17	AQ	Ground Water	I-1
JC55198-2	11/09/17	09:10	DM	11/10/17	AQ	Ground Water	I-2
JC55198-3	11/09/17	09:16	DM	11/10/17	AQ	Ground Water	I-3
JC55198-4	11/09/17	09:22	DM	11/10/17	AQ	Ground Water	I-4
JC55198-5	11/09/17	09:31	DM	11/10/17	AQ	Influent	INFLUENT
JC55198-6	11/09/17	09:37	DM	11/10/17	AQ	Effluent	EFFLUENT
JC55198-7	11/09/17	10:05	DM	11/10/17	AQ	Ground Water	RIVOUT
JC55198-7A	11/09/17	10:05	DM	11/10/17	AQ	Ground Water	RIVOUT
JC55198-8	11/09/17	10:50	DM	11/10/17	AQ	Ground Water	W-6 OUT
JC55198-8A	11/09/17	10:50	DM	11/10/17	AQ	Ground Water	W-6 OUT
JC55198-9	11/09/17	11:11	DM	11/10/17	AQ	Ground Water	W-12 OUT
JC55198-9A	11/09/17	11:11	DM	11/10/17	AQ	Ground Water	W-12 OUT
JC55198-10	11/09/17	11:11	DM	11/10/17	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: United Technologies Corporation **Job No** JC55198

Site: SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH **Report Date** 11/20/2017 12:09:34 P

On 11/10/2017, 9 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 3 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC55198 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method EPA 624

Matrix: AQ **Batch ID:** VT9362

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC55198-5MS, JC55198-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals Analysis By Method SW846 6010C

Matrix: AQ **Batch ID:** MP4222

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC55198-8AMS, JC55198-8AMSD, JC55198-8ASDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Copper, Zinc are outside control limits for sample MP4222-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method SW846 7470A

Matrix: AQ **Batch ID:** MP4239

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC55198-7AMS, JC55198-7AMSD were used as the QC samples for metals.

General Chemistry By Method EPA 1664A

Matrix: AQ **Batch ID:** GP9291

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC55198-7ADUP, JC55198-9AMS were used as the QC samples for HEM Oil and Grease.
- Matrix Spike Recovery(s) for HEM Oil and Grease are outside control limits. Spike recovery indicates possible matrix interference.

General Chemistry By Method EPA 335.4/LACHAT

Matrix: AQ **Batch ID:** GP9298

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC55198-7ADUP, JC55198-7AMS, JC55198-8AMS were used as the QC samples for Cyanide.

General Chemistry By Method SM2540 D-11

Matrix:	AQ	Batch ID:	GN72524

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC55135-2DUP were used as the QC samples for Solids, Total Suspended.

Field Data By Method SM4500H+ B-11

Matrix:	AQ	Batch ID:	R166837

- The data for SM4500H+ B-11 meets quality control requirements.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC55198
Account: United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH
Collected: 11/09/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC55198-1	**I-1**					
cis-1,2-Dichloroethene		32.1	1.0	0.54	ug/l	EPA 624
1,2-Dichloroethene (total)		32.1	1.0	0.40	ug/l	EPA 624
Trichloroethene		68.8	1.0	0.24	ug/l	EPA 624
JC55198-2	**I-2**					
cis-1,2-Dichloroethene		9.4	1.0	0.54	ug/l	EPA 624
1,2-Dichloroethene (total)		9.4	1.0	0.40	ug/l	EPA 624
Trichloroethene		18.2	1.0	0.24	ug/l	EPA 624
JC55198-3	**I-3**					
cis-1,2-Dichloroethene		0.94 J	1.0	0.54	ug/l	EPA 624
1,2-Dichloroethene (total)		0.94 J	1.0	0.40	ug/l	EPA 624
Trichloroethene		8.2	1.0	0.24	ug/l	EPA 624
JC55198-4	**I-4**					
cis-1,2-Dichloroethene		98.7	1.0	0.54	ug/l	EPA 624
trans-1,2-Dichloroethene		1.7	1.0	0.40	ug/l	EPA 624
1,2-Dichloroethene (total)		100	1.0	0.40	ug/l	EPA 624
Trichloroethene		179	1.0	0.24	ug/l	EPA 624
JC55198-5	**INFLUENT**					
cis-1,2-Dichloroethene		25.4	1.0	0.54	ug/l	EPA 624
1,2-Dichloroethene (total)		25.4	1.0	0.40	ug/l	EPA 624
Trichloroethene		56.3	1.0	0.24	ug/l	EPA 624
JC55198-6	**EFFLUENT**					
cis-1,2-Dichloroethene		2.7	1.0	0.54	ug/l	EPA 624
1,2-Dichloroethene (total)		2.7	1.0	0.40	ug/l	EPA 624
Trichloroethene		3.2	1.0	0.24	ug/l	EPA 624
JC55198-7	**RIVOUT**					
cis-1,2-Dichloroethene		2.3	1.0	0.54	ug/l	EPA 624
1,2-Dichloroethene (total)		2.3	1.0	0.40	ug/l	EPA 624
Trichloroethene		2.4	1.0	0.24	ug/l	EPA 624
pH (Field)		8.29			su	SM4500H+ B-11

Summary of Hits

Job Number: JC55198
Account: United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH
Collected: 11/09/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC55198-7A	**RIVOUT**					
Iron		4630	100		ug/l	SW846 6010C
JC55198-8	**W-6 OUT**					
cis-1,2-Dichloroethene		7.8	1.0	0.54	ug/l	EPA 624
1,2-Dichloroethene (total)		7.8	1.0	0.40	ug/l	EPA 624
Trichloroethene		4.2	1.0	0.24	ug/l	EPA 624
pH (Field)		7.71			su	SM4500H+ B-11
JC55198-8A	**W-6 OUT**					
Iron		249	100		ug/l	SW846 6010C
JC55198-9	**W-12 OUT**					
cis-1,2-Dichloroethene		2.0	1.0	0.54	ug/l	EPA 624
1,2-Dichloroethene (total)		2.0	1.0	0.40	ug/l	EPA 624
Trichloroethene		5.7	1.0	0.24	ug/l	EPA 624
pH (Field)		7.63			su	SM4500H+ B-11
JC55198-9A	**W-12 OUT**					
Iron		271	100		ug/l	SW846 6010C
JC55198-10	**TRIP BLANK**					

No hits reported in this sample.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID: I-1
Lab Sample ID: JC55198-1 **Date Sampled:** 11/09/17
Matrix: AQ - Ground Water **Date Received:** 11/10/17
Method: EPA 624 **Percent Solids:** n/a
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227932.D	1	11/13/17 13:12	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	32.1	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	32.1	1.0	0.40	ug/l	
79-01-6	Trichloroethene	68.8	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	96%		80-120%
1868-53-7	Dibromofluoromethane (S)	107%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-2		
Lab Sample ID:	JC55198-2	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227933.D	1	11/13/17 13:42	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	9.4	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	9.4	1.0	0.40	ug/l	
79-01-6	Trichloroethene	18.2	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	109%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-3		
Lab Sample ID:	JC55198-3	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227934.D	1	11/13/17 14:12	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	0.94	1.0	0.54	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	0.94	1.0	0.40	ug/l	J
79-01-6	Trichloroethene	8.2	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	110%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-4		
Lab Sample ID:	JC55198-4	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227943.D	1	11/13/17 18:43	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	98.7	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.7	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	100	1.0	0.40	ug/l	
79-01-6	Trichloroethene	179	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	108%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	INFLUENT		
Lab Sample ID:	JC55198-5	**Date Sampled:**	11/09/17
Matrix:	AQ - Influent	**Date Received:**	11/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227931.D	1	11/13/17 12:42	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	25.4	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	25.4	1.0	0.40	ug/l	
79-01-6	Trichloroethene	56.3	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	103%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	110%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: EFFLUENT
Lab Sample ID: JC55198-6
Matrix: AQ - Effluent
Method: EPA 624
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Date Sampled: 11/09/17
Date Received: 11/10/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227939.D	1	11/13/17 16:42	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.7	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.7	1.0	0.40	ug/l	
79-01-6	Trichloroethene	3.2	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%		76-122%
2037-26-5	Toluene-D8 (SUR)	98%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	108%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC55198-7	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227940.D	1	11/13/17 17:12	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.3	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.3	1.0	0.40	ug/l	
79-01-6	Trichloroethene	2.4	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%		76-122%
2037-26-5	Toluene-D8 (SUR)	98%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	95%		80-120%
1868-53-7	Dibromofluoromethane (S)	108%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC55198-7	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Field Parameters							
pH (Field)	8.29		su	1	11/09/17 10:05	SUB	SM4500H+ B-11

RL = Reporting Limit

Report of Analysis

Client Sample ID: RIVOUT
Lab Sample ID: JC55198-7A
Matrix: AQ - Ground Water
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Date Sampled: 11/09/17
Date Received: 11/10/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]
Iron	4630	100	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]
Mercury	< 0.20	0.20	ug/l	1	11/14/17	11/14/17	JPM	SW846 7470A [1]	SW846 7470A [4]
Silver	< 10	10	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]
Zinc	< 20	20	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA43230
(2) Instrument QC Batch: MA43233
(3) Prep QC Batch: MP4222
(4) Prep QC Batch: MP4239

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC55198-7A	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	11/14/17 14:49	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.0	5.0	mg/l	1	11/14/17 14:00	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	11/13/17 19:35	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC55198-8	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227941.D	1	11/13/17 17:42	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	7.8	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	7.8	1.0	0.40	ug/l	
79-01-6	Trichloroethene	4.2	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	107%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC55198-8	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Field Parameters							
pH (Field)	7.71		su	1	11/09/17 10:50	SUB	SM4500H+ B-11

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC55198-8A	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]
Iron	249	100	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]
Mercury	< 0.20	0.20	ug/l	1	11/14/17	11/14/17	JPM	SW846 7470A [1]	SW846 7470A [4]
Silver	< 10	10	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]
Zinc	< 20	20	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA43230
(2) Instrument QC Batch: MA43233
(3) Prep QC Batch: MP4222
(4) Prep QC Batch: MP4239

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC55198-8A	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	11/14/17 14:53	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.0	5.0	mg/l	1	11/14/17 14:00	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	11/13/17 19:35	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC55198-9	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227942.D	1	11/13/17 18:13	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.0	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.0	1.0	0.40	ug/l	
79-01-6	Trichloroethene	5.7	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	96%		80-120%
1868-53-7	Dibromofluoromethane (S)	108%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC55198-9	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Field Parameters							
pH (Field)	7.63		su	1	11/09/17 11:11	SUB	SM4500H+ B-11

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC55198-9A	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]
Iron	271	100	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]
Mercury	< 0.20	0.20	ug/l	1	11/14/17	11/14/17	JPM	SW846 7470A [1]	SW846 7470A [4]
Silver	< 10	10	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]
Zinc	< 20	20	ug/l	1	11/14/17	11/14/17	GT	SW846 6010C [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA43230
(2) Instrument QC Batch: MA43233
(3) Prep QC Batch: MP4222
(4) Prep QC Batch: MP4239

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC55198-9A	**Date Sampled:**	11/09/17
Matrix:	AQ - Ground Water	**Date Received:**	11/10/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	11/14/17 14:54	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.0	5.0	mg/l	1	11/14/17 14:00	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	11/13/17 19:35	TZW	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JC55198-10	**Date Sampled:**	11/09/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	11/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227938.D	1	11/13/17 16:12	CSF	n/a	n/a	VT9362
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	0.40	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%		76-122%
2037-26-5	Toluene-D8 (SUR)	100%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	95%		80-120%
1868-53-7	Dibromofluoromethane (S)	110%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SGS ACCUTEST WW WTB

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # 407730913311
Bottle Order Control #
SGS Accutest Quote # 664
SGS Accutest Job # JC55198

Client / Reporting Information	Project Information	Requested Analysis (see TEST CODE sheet)
Company Name: Stantec	Project Name: UTC - Zanesville Monthly samplings	
Street Address: 8770 Guion Rd. Suite B	Street: 2200 Linden Ave	Billing Information (if different from Report to)
City / State / Zip: Indianapolis, IN 46268	City / State: Zanesville, OH	Company Name
Project Contact / E-mail: susan.hall@stantec.com	Project #: 182602727	Street Address
Phone #: 317-876-8375 / Fax #	Client Purchase Order #	City / State / Zip
Sampler(s) Name(s) / Phone #: David Miller	Project Manager: Velley Reines	Attention:

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	V624 TCE, VMS+12DCE, VMS DCE, VMS+12DCE	Metals (Ag, Cu, Fe, Hg, Zn)	CN	TSS	O&G 1664	LAB USE ONLY
1	I-1		11/9/17	9:04	DM	GW	3	3								X					L39
2	I-2			9:10			3	3								X					V174
3	I-3			9:16			3	3								X					A25
4	I-4			9:22			3	3								X					24HR
5	INFLUENT			9:31			4	4								X					G12
6	EFFLUENT			9:37			3	3								X					G30T1
7	RIVOUT			10:05			9	5	1	1		2				X	X	X	X	X	
8	W-6 OUT			10:50			9	5	1	1		2				X	X	X	X	X	
9	W-12 OUT			11:11			9	5	1	1		2				X	X	X	X	X	
10	Trip Blank		—	—			2	2								X					

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [x] 5 Day RUSH
- [ ] 3 Day RUSH
- [x] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [x] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

RIVOUT pH = 8.29 • VOA QC
W-6 pH = 7.71
W-12 pH = 7.63
Rush VOCs
Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler	Date Time	Received By	Relinquished By	Date Time	Received By
1 [signature]	11/9/17	1 Fedex	2 FEDEX	11-10-17 930	2 [signature]
3		3	4		4
5		5	Custody Seal # 664	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☑ Cooler Temp. 2.1°C IP

JC55198: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC55198 **Client:** _____ **Project:** _____

Date / Time Received: 11/10/2017 9:30:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.1);

Cooler Temps (Corrected) °C: Cooler 1: (3.0);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC55198: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC55198

SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC55198-1	Collected: 09-NOV-17 09:04 By: DM		Received: 10-NOV-17 By: DG			
I-1						
JC55198-1	EPA 624	13-NOV-17 13:12	CSF			V624TCL
JC55198-2	Collected: 09-NOV-17 09:10 By: DM		Received: 10-NOV-17 By: DG			
I-2						
JC55198-2	EPA 624	13-NOV-17 13:42	CSF			V624TCL
JC55198-3	Collected: 09-NOV-17 09:16 By: DM		Received: 10-NOV-17 By: DG			
I-3						
JC55198-3	EPA 624	13-NOV-17 14:12	CSF			V624TCL
JC55198-4	Collected: 09-NOV-17 09:22 By: DM		Received: 10-NOV-17 By: DG			
I-4						
JC55198-4	EPA 624	13-NOV-17 18:43	CSF			V624TCL
JC55198-5	Collected: 09-NOV-17 09:31 By: DM		Received: 10-NOV-17 By: DG			
INFLUENT						
JC55198-5	EPA 624	13-NOV-17 12:42	CSF			V624TCL
JC55198-6	Collected: 09-NOV-17 09:37 By: DM		Received: 10-NOV-17 By: DG			
EFFLUENT						
JC55198-6	EPA 624	13-NOV-17 16:42	CSF			V624TCL
JC55198-7	Collected: 09-NOV-17 10:05 By: DM		Received: 10-NOV-17 By: DG			
RIVOUT						
JC55198-7	SM4500H+ B-11	09-NOV-17 10:05	SUB			PHF
JC55198-7	EPA 624	13-NOV-17 17:12	CSF			V624TCL
JC55198-8	Collected: 09-NOV-17 10:50 By: DM		Received: 10-NOV-17 By: DG			
W-6 OUT						
JC55198-8	SM4500H+ B-11	09-NOV-17 10:50	SUB			PHF

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC55198

SECORINI: Zanesville, [redacted] Avenue, Zanesville, OH
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC55198-8	EPA 624	13-NOV-17 17:42	CSF			V624TCL
JC55198-9	Collected: 09-NOV-17 11:11 By: DM		Received: 10-NOV-17 By: DG			
W-12 OUT						
JC55198-9	SM4500H+ B-11	09-NOV-17 11:11	SUB			PHF
JC55198-9	EPA 624	13-NOV-17 18:13	CSF			V624TCL
JC55198-10	Collected: 09-NOV-17 11:11 By: DM		Received: 10-NOV-17 By: DG			
TRIP BLANK						
JC55198-10	EPA 624	13-NOV-17 16:12	CSF			V624TCL
JC55198-7A	Collected: 09-NOV-17 10:05 By: DM		Received: 10-NOV-17 By: DG			
RIVOUT						
JC55198-7A	SM2540 D-11	13-NOV-17 19:35	TZW			TSS
JC55198-7A	SW846 7470A	14-NOV-17 12:10	JPM	14-NOV-17	JPM	HG
JC55198-7A	EPA 1664A	14-NOV-17 14:00	TT	14-NOV-17	TT	OG1664
JC55198-7A	EPA 335.4/LACHAT	14-NOV-17 14:49	BM	14-NOV-17	TG	CN
JC55198-7A	SW846 6010C	14-NOV-17 17:38	GT	14-NOV-17	DP	AG,CU,FE,ZN
JC55198-8A	Collected: 09-NOV-17 10:50 By: DM		Received: 10-NOV-17 By: DG			
W-6 OUT						
JC55198-8A	SM2540 D-11	13-NOV-17 19:35	TZW			TSS
JC55198-8A	SW846 7470A	14-NOV-17 12:12	JPM	14-NOV-17	JPM	HG
JC55198-8A	EPA 1664A	14-NOV-17 14:00	TT	14-NOV-17	TT	OG1664
JC55198-8A	EPA 335.4/LACHAT	14-NOV-17 14:53	BM	14-NOV-17	TG	CN
JC55198-8A	SW846 6010C	14-NOV-17 17:21	GT	14-NOV-17	DP	AG,CU,FE,ZN
JC55198-9A	Collected: 09-NOV-17 11:11 By: DM		Received: 10-NOV-17 By: DG			
W-12 OUT						
JC55198-9A	SM2540 D-11	13-NOV-17 19:35	TZW			TSS
JC55198-9A	SW846 7470A	14-NOV-17 12:13	JPM	14-NOV-17	JPM	HG
JC55198-9A	EPA 1664A	14-NOV-17 14:00	TT	14-NOV-17	TT	OG1664
JC55198-9A	EPA 335.4/LACHAT	14-NOV-17 14:54	BM	14-NOV-17	TG	CN
JC55198-9A	SW846 6010C	14-NOV-17 17:43	GT	14-NOV-17	DP	AG,CU,FE,ZN

SGS Accutest Internal Chain of Custody

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, [redacted] Avenue, Zanesville, OH
Received: 11/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC55198-1.1	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-1.1	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-1.1	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-1.1	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-2.1	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-2.1	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-2.1	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-2.1	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-3.1	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-3.1	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-3.1	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-3.1	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-4.1	Secured Storage	Chelsea San Filippo	11/13/17 16:34	Retrieve from Storage
JC55198-4.1	Chelsea San Filippo	GCMST	11/13/17 16:34	Load on Instrument
JC55198-4.1	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-4.1	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-5.1	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-5.1	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-5.1	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-5.1	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-5.2	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-5.2	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-5.2	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-5.2	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-5.3	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-5.3	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-5.3	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-5.3	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-6.1	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-6.1	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-6.1	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-6.1	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-7.1	Secured Storage	Jennifer Voitovitch	11/13/17 17:23	Retrieve from Storage
JC55198-7.1	Jennifer Voitovitch	Secured Staging Area	11/13/17 17:23	Return to Storage
JC55198-7.1	Secured Staging Area	Tyrus Takacs	11/14/17 11:10	Retrieve from Storage
JC55198-7.1	Tyrus Takacs		11/14/17 14:53	Depleted

SGS Accutest Internal Chain of Custody

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, [redacted] Avenue, Zanesville, OH
Received: 11/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC55198-7.2	Secured Storage	Jennifer Voitovitch	11/13/17 17:23	Retrieve from Storage
JC55198-7.2	Jennifer Voitovitch	Secured Staging Area	11/13/17 17:23	Return to Storage
JC55198-7.2	Secured Staging Area	Tyrus Takacs	11/14/17 11:10	Retrieve from Storage
JC55198-7.2	Tyrus Takacs		11/14/17 14:53	Depleted
JC55198-7.3	Secured Storage	Jennifer Voitovitch	11/13/17 19:07	Retrieve from Storage
JC55198-7.3	Jennifer Voitovitch	Secured Staging Area	11/13/17 19:08	Return to Storage
JC55198-7.3	Secured Staging Area	Deval Patel	11/14/17 06:30	Retrieve from Storage
JC55198-7.3	Deval Patel	Secured Storage	11/14/17 10:49	Return to Storage
JC55198-7.3.1	Deval Patel	Metals Digestion	11/14/17 10:02	Digestate from JC55198-7.3
JC55198-7.3.1	Metals Digestion	Deval Patel	11/14/17 10:02	Digestate from JC55198-7.3
JC55198-7.3.1	Deval Patel	Metals Digestate Storage	11/14/17 10:02	Return to Storage
JC55198-7.3.1	Metals Digestate Storage	Rakesh Pathak	11/14/17 16:25	Retrieve from Storage
JC55198-7.3.1	Rakesh Pathak	Metals Digestate Storage	11/14/17 20:37	Return to Storage
JC55198-7.5	Secured Storage	Todd Shoemaker	11/13/17 13:49	Retrieve from Storage
JC55198-7.5	Todd Shoemaker	Secured Staging Area	11/13/17 13:50	Return to Storage
JC55198-7.5	Secured Staging Area	Timothy Zhen Wei Ho	11/13/17 16:58	Retrieve from Storage
JC55198-7.5	Timothy Zhen Wei Ho		11/13/17 23:16	Depleted
JC55198-7.6	Secured Storage	Jennifer Voitovitch	11/13/17 23:10	Retrieve from Storage
JC55198-7.6	Jennifer Voitovitch	Secured Staging Area	11/13/17 23:10	Return to Storage
JC55198-7.6	Secured Staging Area	Thomas Gabriel	11/14/17 10:58	Retrieve from Storage
JC55198-7.6	Thomas Gabriel	Secured Storage	11/14/17 16:50	Return to Storage
JC55198-7.7	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-7.7	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-7.7	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-7.7	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-8.2	Secured Storage	Jennifer Voitovitch	11/13/17 17:23	Retrieve from Storage
JC55198-8.2	Jennifer Voitovitch	Secured Staging Area	11/13/17 17:23	Return to Storage
JC55198-8.2	Secured Staging Area	Tyrus Takacs	11/14/17 11:10	Retrieve from Storage
JC55198-8.2	Tyrus Takacs		11/14/17 14:53	Depleted
JC55198-8.3	Secured Storage	Jennifer Voitovitch	11/13/17 19:07	Retrieve from Storage
JC55198-8.3	Jennifer Voitovitch	Secured Staging Area	11/13/17 19:08	Return to Storage
JC55198-8.3	Secured Staging Area	Deval Patel	11/14/17 06:30	Retrieve from Storage
JC55198-8.3	Deval Patel	Secured Storage	11/14/17 10:49	Return to Storage
JC55198-8.3.1	Deval Patel	Metals Digestion	11/14/17 10:02	Digestate from JC55198-8.3
JC55198-8.3.1	Metals Digestion	Deval Patel	11/14/17 10:02	Digestate from JC55198-8.3

SGS Accutest Internal Chain of Custody

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH
Received: 11/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC55198-8.3.1	Deval Patel	Metals Digestate Storage	11/14/17 10:02	Return to Storage
JC55198-8.3.1	Metals Digestate Storage	Rakesh Pathak	11/14/17 16:25	Retrieve from Storage
JC55198-8.3.1	Rakesh Pathak	Metals Digestate Storage	11/14/17 20:37	Return to Storage
JC55198-8.5	Secured Storage	Todd Shoemaker	11/13/17 13:49	Retrieve from Storage
JC55198-8.5	Todd Shoemaker	Secured Staging Area	11/13/17 13:50	Return to Storage
JC55198-8.5	Secured Staging Area	Timothy Zhen Wei Ho	11/13/17 16:58	Retrieve from Storage
JC55198-8.5	Timothy Zhen Wei Ho	Secured Storage	11/14/17 00:00	Return to Storage
JC55198-8.6	Secured Storage	Jennifer Voitovitch	11/13/17 23:10	Retrieve from Storage
JC55198-8.6	Jennifer Voitovitch	Secured Staging Area	11/13/17 23:10	Return to Storage
JC55198-8.6	Secured Staging Area	Thomas Gabriel	11/14/17 10:58	Retrieve from Storage
JC55198-8.6	Thomas Gabriel	Secured Storage	11/14/17 16:50	Return to Storage
JC55198-8.7	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-8.7	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-8.7	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-8.7	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-9.1	Secured Storage	Jennifer Voitovitch	11/13/17 17:23	Retrieve from Storage
JC55198-9.1	Jennifer Voitovitch	Secured Staging Area	11/13/17 17:23	Return to Storage
JC55198-9.1	Secured Staging Area	Tyrus Takacs	11/14/17 11:10	Retrieve from Storage
JC55198-9.1	Tyrus Takacs		11/14/17 14:53	Depleted
JC55198-9.2	Secured Storage	Jennifer Voitovitch	11/13/17 17:23	Retrieve from Storage
JC55198-9.2	Jennifer Voitovitch	Secured Staging Area	11/13/17 17:23	Return to Storage
JC55198-9.2	Secured Staging Area	Tyrus Takacs	11/14/17 11:10	Retrieve from Storage
JC55198-9.2	Tyrus Takacs		11/14/17 14:53	Depleted
JC55198-9.3	Secured Storage	Jennifer Voitovitch	11/13/17 19:07	Retrieve from Storage
JC55198-9.3	Jennifer Voitovitch	Secured Staging Area	11/13/17 19:08	Return to Storage
JC55198-9.3	Secured Staging Area	Deval Patel	11/14/17 06:30	Retrieve from Storage
JC55198-9.3	Deval Patel	Secured Storage	11/14/17 10:49	Return to Storage
JC55198-9.3.1	Deval Patel	Metals Digestion	11/14/17 10:02	Digestate from JC55198-9.3
JC55198-9.3.1	Metals Digestion	Deval Patel	11/14/17 10:02	Digestate from JC55198-9.3
JC55198-9.3.1	Deval Patel	Metals Digestate Storage	11/14/17 10:02	Return to Storage
JC55198-9.3.1	Metals Digestate Storage	Rakesh Pathak	11/14/17 16:25	Retrieve from Storage
JC55198-9.3.1	Rakesh Pathak	Metals Digestate Storage	11/14/17 20:37	Return to Storage
JC55198-9.5	Secured Storage	Todd Shoemaker	11/13/17 13:49	Retrieve from Storage
JC55198-9.5	Todd Shoemaker	Secured Staging Area	11/13/17 13:50	Return to Storage
JC55198-9.5	Secured Staging Area	Timothy Zhen Wei Ho	11/13/17 16:58	Retrieve from Storage
JC55198-9.5	Timothy Zhen Wei Ho	Secured Storage	11/14/17 00:00	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, [redacted] Avenue, Zanesville, OH
Received: 11/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC55198-9.6	Secured Storage	Jennifer Voitovitch	11/13/17 23:10	Retrieve from Storage
JC55198-9.6	Jennifer Voitovitch	Secured Staging Area	11/13/17 23:10	Return to Storage
JC55198-9.6	Secured Staging Area	Thomas Gabriel	11/14/17 10:58	Retrieve from Storage
JC55198-9.6	Thomas Gabriel	Secured Storage	11/14/17 16:50	Return to Storage
JC55198-9.7	Secured Storage	Chelsea San Filippo	11/13/17 16:38	Retrieve from Storage
JC55198-9.7	Chelsea San Filippo	GCMST	11/13/17 16:38	Load on Instrument
JC55198-9.7	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-9.7	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage
JC55198-10.1	Secured Storage	Chelsea San Filippo	11/13/17 16:37	Retrieve from Storage
JC55198-10.1	Chelsea San Filippo	GCMST	11/13/17 16:37	Load on Instrument
JC55198-10.1	GCMST	Chelsea San Filippo	11/14/17 12:50	Unload from Instrument
JC55198-10.1	Chelsea San Filippo	Secured Storage	11/14/17 12:50	Return to Storage

MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9362-MB	T227927.D	1	11/13/17	CSF	n/a	n/a	VT9362

The QC reported here applies to the following samples: **Method:** EPA 624

JC55198-1, JC55198-2, JC55198-3, JC55198-4, JC55198-5, JC55198-6, JC55198-7, JC55198-8, JC55198-9, JC55198-10

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	0.40	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%	76-122%
2037-26-5	Toluene-D8 (SUR)	100%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	80-120%
1868-53-7	Dibromofluoromethane (S)	107%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.75	20	ug/l	J
	system artifact	3.93	64	ug/l	J
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9362-BS	T227928.D	1	11/13/17	CSF	n/a	n/a	VT9362

The QC reported here applies to the following samples: **Method:** EPA 624

JC55198-1, JC55198-2, JC55198-3, JC55198-4, JC55198-5, JC55198-6, JC55198-7, JC55198-8, JC55198-9, JC55198-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	18.8	94	72-115
156-60-5	trans-1,2-Dichloroethene	20	19.8	99	70-121
540-59-0	1,2-Dichloroethene (total)	40	38.6	97	72-117
79-01-6	Trichloroethene	20	17.7	89	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	102%	76-122%
2037-26-5	Toluene-D8 (SUR)	103%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%	80-120%
1868-53-7	Dibromofluoromethane (S)	106%	80-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC55198-5MS	T227935.D	1	11/13/17	CSF	n/a	n/a	VT9362
JC55198-5MSD	T227936.D	1	11/13/17	CSF	n/a	n/a	VT9362
JC55198-5	T227931.D	1	11/13/17	CSF	n/a	n/a	VT9362

The QC reported here applies to the following samples: **Method:** EPA 624

JC55198-1, JC55198-2, JC55198-3, JC55198-4, JC55198-5, JC55198-6, JC55198-7, JC55198-8, JC55198-9, JC55198-10

CAS No.	Compound	JC55198-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	25.4		20	46.8	107	20	44.9	98	4	50-134/14
156-60-5	trans-1,2-Dichloroethene	ND		20	21.2	106	20	20.5	103	3	63-129/18
540-59-0	1,2-Dichloroethene (total)	25.4		40	68.0	107	40	65.4	100	4	48-138/15
79-01-6	Trichloroethene	56.3		20	74.1	89	20	71.6	77	3	46-145/12

CAS No.	Surrogate Recoveries	MS	MSD	JC55198-5	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%	104%	103%	76-122%
2037-26-5	Toluene-D8 (SUR)	101%	101%	100%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%	100%	99%	80-120%
1868-53-7	Dibromofluoromethane (S)	106%	108%	110%	80-120%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample: VT9358-BFB
Lab File ID: T227846.D
Instrument ID: GCMST
Injection Date: 11/08/17
Injection Time: 22:57

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	8276	16.9		Pass
75	30.0 - 60.0% of mass 95	21912	44.7		Pass
95	Base peak, 100% relative abundance	48970	100.0		Pass
96	5.0 - 9.0% of mass 95	3293	6.72		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	42536	86.9		Pass
175	5.0 - 9.0% of mass 174	3355	6.85	(7.89) [a]	Pass
176	95.0 - 101.0% of mass 174	41240	84.2	(97.0) [a]	Pass
177	5.0 - 9.0% of mass 176	2582	5.27	(6.26) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9358-IC9358	T227848.D	11/09/17	00:42	01:45	Initial cal 0.5
VT9358-IC9358	T227849.D	11/09/17	01:21	02:24	Initial cal 0.2
VT9358-IC9358	T227850.D	11/09/17	01:50	02:53	Initial cal 1
VT9358-IC9358	T227851.D	11/09/17	02:20	03:23	Initial cal 2
VT9358-IC9358	T227852.D	11/09/17	02:50	03:53	Initial cal 5
VT9358-ICC9358	T227853.D	11/09/17	03:20	04:23	Initial cal 20
VT9358-IC9358	T227854.D	11/09/17	03:50	04:53	Initial cal 50
VT9358-IC9358	T227855.D	11/09/17	04:20	05:23	Initial cal 100
VT9358-IC9358	T227856.D	11/09/17	04:50	05:53	Initial cal 200
VT9358-ICV9358	T227859.D	11/09/17	06:20	07:23	Initial cal verification 20
VT9358-ICV9358	T227860.D	11/09/17	06:50	07:53	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample:	VT9362-BFB	**Injection Date:**	11/13/17
Lab File ID:	T227925.D	**Injection Time:**	07:20
Instrument ID:	GCMST		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	9743	16.8		Pass
75	30.0 - 60.0% of mass 95	25376	43.6		Pass
95	Base peak, 100% relative abundance	58146	100.0		Pass
96	5.0 - 9.0% of mass 95	3999	6.88		Pass
173	Less than 2.0% of mass 174	159	0.27	(0.32) [a]	Pass
174	50.0 - 120.0% of mass 95	49792	85.6		Pass
175	5.0 - 9.0% of mass 174	3667	6.31	(7.36) [a]	Pass
176	95.0 - 101.0% of mass 174	49037	84.3	(98.5) [a]	Pass
177	5.0 - 9.0% of mass 176	3570	6.14	(7.28) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9362-CC9358	T227926.D	11/13/17	07:50	00:30	Continuing cal 20
VT9362-MB	T227927.D	11/13/17	08:32	01:12	Method Blank
VT9362-BS	T227928.D	11/13/17	09:28	02:08	Blank Spike
JC55198-5	T227931.D	11/13/17	12:42	05:22	INFLUENT
JC55198-1	T227932.D	11/13/17	13:12	05:52	I-1
JC55198-2	T227933.D	11/13/17	13:42	06:22	I-2
JC55198-3	T227934.D	11/13/17	14:12	06:52	I-3
JC55198-5MS	T227935.D	11/13/17	14:42	07:22	Matrix Spike
JC55198-5MSD	T227936.D	11/13/17	15:12	07:52	Matrix Spike Duplicate
JC55198-10	T227938.D	11/13/17	16:12	08:52	TRIP BLANK
JC55198-6	T227939.D	11/13/17	16:42	09:22	EFFLUENT
JC55198-7	T227940.D	11/13/17	17:12	09:52	RIVOUT
JC55198-8	T227941.D	11/13/17	17:42	10:22	W-6 OUT
JC55198-9	T227942.D	11/13/17	18:13	10:53	W-12 OUT
JC55198-4	T227943.D	11/13/17	18:43	11:23	I-4
ZZZZZZ	T227944.D	11/13/17	19:13	11:53	(unrelated sample)
ZZZZZZ	T227945.D	11/13/17	19:43	12:23	(unrelated sample)
ZZZZZZ	T227946.D	11/13/17	20:13	12:53	(unrelated sample)
ZZZZZZ	T227947.D	11/13/17	20:43	13:23	(unrelated sample)
ZZZZZZ	T227948.D	11/13/17	21:13	13:53	(unrelated sample)
ZZZZZZ	T227949.D	11/13/17	21:43	14:23	(unrelated sample)
ZZZZZZ	T227951.D	11/13/17	22:43	15:23	(unrelated sample)
ZZZZZZ	T227952.D	11/13/17	23:13	15:53	(unrelated sample)

Internal Standard Area Summary

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Check Std:	VT9362-CC9358	**Injection Date:**	11/13/17
Lab File ID:	T227926.D	**Injection Time:**	07:50
Instrument ID:	GCMST	**Method:**	EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	90227	7.43	153431	9.47	228481	10.32	131368	16.07	217827	13.53
Upper Limit [a]	180454	7.93	306862	9.97	456962	10.82	262736	16.57	435654	14.03
Lower Limit [b]	45114	6.93	76716	8.97	114241	9.82	65684	15.57	108914	13.03

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VT9362-MB	89786	7.43	150682	9.47	220723	10.32	134676	16.07	217061	13.53
VT9362-BS	87410	7.43	156038	9.46	235491	10.32	132384	16.07	219072	13.53
JC55198-5	74948	7.42	149378	9.46	226611	10.32	132915	16.07	215859	13.53
JC55198-1	82499	7.43	155298	9.46	229838	10.33	140394	16.07	222841	13.53
JC55198-2	87055	7.43	151768	9.47	224025	10.32	137002	16.07	218500	13.53
JC55198-3	84498	7.43	153096	9.47	226277	10.32	139393	16.07	217356	13.53
JC55198-5MS	85016	7.43	152575	9.46	225580	10.32	129469	16.07	216971	13.53
JC55198-5MSD	87538	7.43	153654	9.46	227893	10.32	131607	16.07	218457	13.53
JC55198-10	89224	7.43	148934	9.46	223768	10.32	140148	16.07	217269	13.53
JC55198-6	91218	7.43	151683	9.47	228777	10.32	141372	16.07	219811	13.53
JC55198-7	89498	7.42	151961	9.46	225655	10.32	142270	16.07	220724	13.53
JC55198-8	92570	7.42	152474	9.46	225805	10.32	137110	16.07	215884	13.53
JC55198-9	92131	7.43	155056	9.46	229160	10.32	143195	16.07	221443	13.53
JC55198-4	90161	7.44	151693	9.47	222947	10.32	134512	16.07	215536	13.53
ZZZZZZ	89264	7.42	149434	9.46	226831	10.32	136030	16.07	220995	13.53
ZZZZZZ	89424	7.43	148643	9.47	222434	10.32	139650	16.07	215167	13.53
ZZZZZZ	90392	7.43	149114	9.46	223441	10.32	136167	16.07	217514	13.52
ZZZZZZ	89777	7.43	150324	9.46	223485	10.32	129786	16.07	214728	13.53
ZZZZZZ	90683	7.43	151029	9.46	222462	10.32	134525	16.07	221032	13.53
ZZZZZZ	87905	7.43	156624	9.47	231406	10.32	131584	16.07	216076	13.53
ZZZZZZ	83500	7.42	146135	9.46	218315	10.32	133792	16.07	211113	13.53
ZZZZZZ	86382	7.42	146886	9.46	222353	10.32	133055	16.07	213615	13.52

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JC55198
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC55198-1	T227932.D	106	100	96	107
JC55198-2	T227933.D	104	100	98	109
JC55198-3	T227934.D	104	100	97	110
JC55198-4	T227943.D	106	100	97	108
JC55198-5	T227931.D	103	100	99	110
JC55198-6	T227939.D	104	98	98	108
JC55198-7	T227940.D	106	98	95	108
JC55198-8	T227941.D	106	100	98	107
JC55198-9	T227942.D	106	100	96	108
JC55198-10	T227938.D	106	100	95	110
JC55198-5MS	T227935.D	104	101	101	106
JC55198-5MSD	T227936.D	104	101	100	108
VT9362-BS	T227928.D	102	103	102	106
VT9362-MB	T227927.D	104	100	98	107

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4 (SUR)	76-122%
S2 = Toluene-D8 (SUR)	80-120%
S3 = 4-Bromofluorobenzene (SUR)	80-120%
S4 = Dibromofluoromethane (S)	80-120%

Initial Calibration Summary

Job Number: JC55198 **Sample:** VT9358-ICC9358
Account: UTC United Technologies Corporation **Lab FileID:** T227853.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Response Factor Report GCMST

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Calibration Files
5 =T227852.D 20 =T227853.D 50 =T227854.D 100 =T227855.D
200 =T227856.D 2 =T227851.D 1 =T227850.D 0.5 =T227848.D
0.2 =T227849.D =

Compound	5	20	50	100	200	2	1	0.5	0.2	Avg	%RSD
1) TERT BUTYL ALCOHOL-d9 ----------ISTD----------											
2) TERTIARY BUTYL ALCOHOL	1.124	1.158	1.188	1.207	1.236	1.339	0.856			1.158	12.93
3) 1,4-DIOXANE	0.092	0.097	0.097	0.096	0.093	0.086				0.094	4.41
4) PENTAFLUOROBENZENE ----------ISTD----------											
5) CHLORODIFLUOROMETHANE	1.006	1.142	1.172	1.199	1.158	0.992				1.111	8.01
6) DICHLORODIFLUOROMETHANE	1.000	1.202	1.203	1.161	1.123	1.034	1.067	0.934		1.091	9.02
7) FREON 143A *This compound does not meet Initial Calibration criteria	1.271	1.296	1.365	1.358	1.301	1.075	1.156	0.983	1.073	1.209	11.59
8) FREON 142B	0.713	0.750	0.807	0.811	0.810	0.624	0.618			0.733	11.58
9) CHLOROMETHANE	0.874	1.095	1.139	1.167	1.182	0.978	1.136			1.082	10.52
10) VINYL CHLORIDE	0.876	1.157	1.229	1.221	1.211	0.943	1.021	0.928	1.238	1.092	13.58
11) BROMOMETHANE	0.519	0.647	0.642	0.608	0.449	0.603	0.619	0.599		0.586	11.60
12) CHLOROETHANE	0.447	0.529	0.553	0.534	0.500	0.449	0.477			0.498	8.52
13) VINYL BROMIDE	0.383	0.483	0.507	0.489	0.488	0.384	0.441			0.454	11.46
14) TRICHLOROFLUOROMETHANE	0.664	0.837	0.860	0.842	0.826	0.695	0.729	0.705	0.809	0.774	9.71
15) PENTANE										0.000	-1.00
16) FREON 141B	0.700	0.730	0.755	0.748	0.733	0.584	0.626	0.589	0.519	0.665	13.04
17) ETHYL ETHER	0.242	0.240	0.244	0.238	0.231	0.243	0.169	0.250		0.232	11.19
18) 1,1-DICHLOROETHYLENE	0.715	0.753	0.766	0.745	0.719	0.698	0.543	0.781	0.783	0.723	10.17
19) FREON 113	0.468	0.517	0.528	0.513	0.498	0.475	0.336	0.549		0.486	13.60
20) ACROLEIN	0.060	0.072	0.079	0.075	0.072	0.080				0.073	9.79
21) ACETONE	0.036	0.037	0.039	0.039	0.037	0.032	0.027			0.035	12.62
22) CARBON DISULFIDE	1.681	1.844	1.911	1.809	1.756	1.783	1.259			1.720	12.53
23) IODOMETHANE											

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          0.832 0.859 0.896 0.861 0.840 0.837 0.606 0.882 0.880   0.832   10.56
24)  ACETONITRILE
          0.067 0.061 0.062 0.061 0.059 0.077                     0.065   10.04
25)  METHYL ACETATE
          0.323 0.315 0.310 0.306 0.302 0.428 0.369               0.336   13.86
26)  METHYLENE CHLORIDE
          0.468 0.506 0.517 0.500 0.488 0.520 0.418 0.659         0.510   13.50
27)  ACRYLONITRILE
          0.161 0.150 0.156 0.152 0.148 0.157                     0.154    3.08
28)  METHYL TERT BUTYL ETHER
          1.445 1.509 1.541 1.534 1.514 1.522 1.235 1.794         1.512   10.07
29)  trans-1,2-DICHLOROETHYLENE
          0.644 0.697 0.707 0.691 0.673 0.661 0.507 0.751 0.680   0.668   10.11
30)  HEXANE
          0.688 0.764 0.765 0.740 0.712 0.647 0.474               0.684   14.90
31)  1,1-DICHLOROETHANE
          0.825 0.852 0.871 0.826 0.806 0.824 0.634 0.961 0.876   0.831   10.48
32)  VINYL ACETATE
          0.058 0.059 0.061 0.063 0.059 0.053                     0.059    6.14
33)  DI-ISOPROPYL ETHER
          1.865 1.924 1.966 1.938 1.891 1.837 1.377 2.025 2.155   1.887   11.31
34)  ETHYL TERT BUTYL ETHER
          1.608 1.698 1.789 1.772 1.788 1.654 1.309 1.709 1.730   1.673    8.94
35)  2-BUTANONE
          0.043 0.042 0.043 0.044 0.041 0.039 0.026               0.040   15.66
36)  cis-1,2-DICHLOROETHYLENE
          0.469 0.510 0.512 0.498 0.486 0.501 0.419 0.611 0.593   0.511   11.53
37)  2,2-DICHLOROPROPANE
          0.783 0.848 0.844 0.825 0.823 0.812 0.618 0.941         0.812   11.16
38)  ETHYL ACETATE
          0.065 0.062 0.061 0.058 0.055 0.053 0.053               0.058    7.89
39)  BROMOCHLOROMETHANE
          0.226 0.232 0.232 0.228 0.221 0.227 0.155 0.201 0.203   0.214   11.65
40)  TETRAHYDROFURAN
          0.138 0.133 0.131 0.127 0.123 0.153 0.129               0.134    7.37
41)  CHLOROFORM
          0.703 0.746 0.755 0.735 0.724 0.714 0.538 0.783         0.712   10.48
42)  t-BUTYL FORMATE *This compound does not meet Initial Calibration criteria
          0.061 0.054 0.054 0.058 0.057 0.043                     0.055   11.25
43)  1,1,1-TRICHLOROETHANE
          0.716 0.806 0.826 0.818 0.810 0.776 0.556 0.859 0.741   0.768   11.83
44)  CYCLOHEXANE
          0.681 0.942 0.962 0.937 0.943 0.914 0.906               0.898   10.83
45)  DIBROMOFLUOROMETHANE (SUR)
          0.410 0.413 0.414 0.411 0.415 0.414 0.416 0.416 0.414   0.414    0.50
46)  1,1-DICHLOROPROPENE
          0.583 0.627 0.635 0.620 0.615 0.601 0.424 0.675 0.613   0.599   11.73
47)  CARBON TETRACHLORIDE
          0.649 0.698 0.725 0.718 0.713 0.655 0.488 0.732 0.725   0.678   11.43
48)  ISOPROPYL ACETATE
          0.078 0.081 0.083 0.085 0.084 0.080                     0.082    3.42

49)     1,4-DIFLUOROBENZENE   ----------------ISTD---------------------
50)  1,2-DICHLOROETHANE-d4
          0.285 0.287 0.281 0.287 0.279 0.291 0.293 0.293 0.290   0.287    1.70
51)  BENZENE
          1.341 1.390 1.392 1.354 1.270 1.397 0.994 1.599         1.342   12.61
52)  1,2-DICHLOROETHANE
          0.333 0.341 0.344 0.340 0.323 0.350 0.252 0.366 0.401   0.339   11.67
53)  2,2,4-TRIMETHYLPENTANE
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          1.431 1.629 1.670 1.703 1.728 1.415                    1.596    8.65
54)  TERT-AMYL METHYL ETHER
          1.128 1.159 1.181 1.197 1.151 1.210 0.909              1.134    9.07
55)  HEPTANE
          0.286 0.309 0.315 0.313 0.299 0.290 0.220 0.281 0.280  0.288    9.96
56)  TRICHLOROETHYLENE
          0.298 0.325 0.324 0.322 0.314 0.321 0.223 0.314 0.371  0.312   12.46
57)  1,2-DICHLOROPROPANE
          0.372 0.388 0.388 0.380 0.362 0.386 0.307 0.398 0.416  0.378    8.05
58)  DIBROMOMETHANE
          0.171 0.184 0.181 0.181 0.170 0.175 0.137              0.171    9.32
59)  METHYL METHACRYLATE
          0.058 0.068 0.069 0.070 0.069 0.069 0.045              0.064   14.38
60)  METHYLCYCLOHEXANE
          0.739 0.866 0.887 0.888 0.862 0.750 0.544 0.830 0.802  0.797   13.74
61)  BROMODICHLOROMETHANE
          0.375 0.398 0.399 0.401 0.391 0.402 0.282 0.440 0.386  0.386   11.09
62)  2-CHLOROETHYL VINYL ETHER *This compound does not meet Initial Calibration criteria
          0.132 0.137 0.138 0.135 0.130 0.134 0.090              0.128   13.23
63)  EPICHLOROHYDRIN
          0.025 0.026 0.027 0.027 0.026 0.026 0.021              0.026    7.46
64)  cis-1,3-DICHLOROPROPENE
          0.509 0.541 0.535 0.538 0.519 0.528 0.398 0.578 0.588  0.526   10.37
65)  4-METHYL-2-PENTANONE
          0.118 0.125 0.125 0.125 0.122 0.124 0.099 0.124 0.133  0.122    7.62

66) I   CHLOROBENZENE-D5      ----------------ISTD---------------------
67)  TOLUENE-d8
          1.284 1.291 1.279 1.316 1.293 1.283 1.254 1.242 1.272  1.279    1.70
68)  TOLUENE
          0.821 0.847 0.860 0.863 0.821 0.839 0.602 0.958 1.046  0.851   14.00
69)  ETHYL METHACRYLATE
          0.391 0.402 0.418 0.423 0.405 0.395 0.290 0.405        0.391   10.84
70)  trans-1,3-DICHLOROPROPENE
          0.459 0.470 0.470 0.461 0.439 0.442 0.300 0.514 0.523  0.453   14.21
71)  1,1,2-TRICHLOROETHANE
          0.240 0.244 0.241 0.239 0.228 0.247 0.186 0.275 0.215  0.235   10.35
72)  TETRACHLOROETHYLENE
          0.276 0.291 0.300 0.293 0.285 0.298 0.201 0.307 0.362  0.290   14.32
73)  2-HEXANONE
          0.117 0.121 0.123 0.121 0.115 0.124 0.094 0.106 0.150  0.119   12.61
74)  1,3-DICHLOROPROPANE
          0.451 0.472 0.475 0.459 0.442 0.467 0.341 0.498 0.516  0.458   10.75
75)  BUTYL ACETATE
          0.216 0.212 0.223 0.222 0.215 0.209 0.158              0.208   10.88
76)  3,3-DIMETHYL-1-BUTANOL
          0.039 0.041 0.044 0.048 0.048 0.039 0.033              0.042   13.07
77)  DIBROMOCHLOROMETHANE
          0.291 0.305 0.315 0.318 0.306 0.312 0.221 0.313 0.306  0.298   10.03
78)  ETHYLENE DIBROMIDE
          0.263 0.273 0.273 0.273 0.262 0.267 0.181 0.257 0.243  0.255   11.47
79)  CHLOROBENZENE
          0.924 0.969 0.975 0.961 0.915 0.972 0.654 1.076 1.090  0.949   13.27
80)  1,1,1,2-TETRACHLOROETHANE
          0.364 0.400 0.413 0.420 0.409 0.387 0.264 0.383 0.431  0.386   12.97
81)  ETHYLBENZENE
          1.580 1.695 1.710 1.685 1.576 1.542 1.179 1.735 1.828  1.614   11.55
82)  m,p-XYLENE
          0.607 0.648 0.662 0.653 0.625 0.614 0.425 0.681 0.677  0.621   12.58
83)  o-XYLENE
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          1.331 1.452 1.485 1.474 1.405 1.382 1.041 1.475 1.558   1.400   10.72
 84)  STYRENE
          1.007 1.080 1.101 1.083 1.035 0.968 0.724 1.060 1.055   1.013   11.43
 85)  n-AMYL ACETATE
                                                                  0.000   -1.00
 86)  BROMOFORM
          0.207 0.213 0.224 0.222 0.218 0.220 0.173 0.229 0.169   0.208   10.59
 87)  CUMENE
          1.700 1.902 1.957 1.964 1.849 1.694 1.255 1.878 1.900   1.789   12.47
 88)  cis-1,4-DICHLORO-2-BUTENE
          0.103 0.102 0.112 0.111 0.110 0.107 0.075               0.103   12.52

 89)     1,4-DICHLOROBENZENE-D ----------------ISTD---------------------
 90)  4-BROMOFLUOROBENZENE
          0.718 0.711 0.723 0.735 0.731 0.716 0.705 0.700 0.717   0.717    1.60
 91)  1,1,2,2-TETRACHLOROETHANE
          0.674 0.696 0.715 0.720 0.671 0.729 0.552 0.794 0.936   0.721   14.32
 92)  trans-1,4-DICHLORO-2-BUTENE
          0.142 0.143 0.153 0.159 0.150 0.164                     0.152    5.77
 93)  1,2,3-TRICHLOROPROPANE
          0.146 0.156 0.158 0.157 0.151 0.155 0.123               0.149    8.09
 94)  N-PROPYLBENZENE
          3.315 3.617 3.699 3.696 3.403 3.397 2.346 3.554 4.152   3.464   14.04
 95)  BROMOBENZENE
          0.671 0.726 0.737 0.739 0.711 0.751 0.498 0.800 0.838   0.719   13.33
 96)  2-CHLOROTOLUENE
          0.687 0.745 0.770 0.782 0.755 0.699 0.483 0.783 0.809   0.724   13.61
 97)  4-CHLOROTOLUENE
          1.911 2.025 2.092 2.096 2.014 2.071 1.423 2.313 2.494   2.049   14.27
 98)  1,3,5-TRIMETHYLBENZENE
          2.368 2.669 2.839 2.890 2.776 2.373 1.674 2.558 2.679   2.536   14.69
 99)  TERT-BUTYLBENZENE
          1.999 2.264 2.514 2.604 2.562 2.073                     2.336   11.20
100)  1,2,4-TRIMETHYLBENZENE
          2.510 2.741 2.850 2.896 2.764 2.509 1.814 2.787 2.764   2.626   12.68
101)  SEC-BUTYLBENZENE
          3.353 3.820 4.029 4.115 3.846 3.410                     3.762    8.39
102)  P-ISOPROPYLTOLUENE
          2.770 3.128 3.288 3.292 3.196 2.900 1.962 2.934 3.342   2.979   14.44
103)  1,3-DICHLOROBENZENE
          1.446 1.493 1.516 1.489 1.451 1.509 1.149 1.577 1.793   1.491   11.13
104)  1,4-DICHLOROBENZENE
          1.490 1.518 1.537 1.501 1.444 1.574 1.210 1.626 1.934   1.537   12.30
105)  N-BUTYLBENZENE
          0.784 0.787 0.824 0.827 0.812 0.749 0.541 0.805 0.833   0.774   11.77
106)  1,2-DICHLOROBENZENE
          1.534 1.575 1.568 1.562 1.497 1.637 1.162 1.675 1.918   1.570   12.53
107)  HEXACHLOROETHANE
          0.306 0.327 0.369 0.397 0.412 0.302                     0.352   13.43
108)  1,2-DIBROMO-3-CHLOROPROPANE
          0.155 0.162 0.165 0.166 0.165 0.160 0.141 0.197         0.164    9.51
109)  HEXACHLOROBUTADIENE
          0.760 0.785 0.803 0.838 0.868 0.788 0.573 0.798 0.979   0.799   13.40
110)  1,3,5-TRICHLOROBENZENE
          1.558 1.604 1.613 1.605 1.593 1.605 1.111 1.618 1.872   1.575   12.49
111)  NITROBENZENE *This compound does not meet Initial Calibration criteria
          0.050 0.052 0.053 0.059 0.063                           0.055    9.31
112)  1,2,4-TRICHLOROBENZENE
          1.347 1.443 1.461 1.473 1.458 1.308                     1.415    4.92
113)  1,2,3-TRICHLOROBENZENE
```

Initial Calibration Summary

Job Number: JC55198 **Sample:** VT9358-ICC9358
Account: UTC United Technologies Corporation **Lab FileID:** T227853.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

```
           1.117 1.236 1.309 1.338 1.329 1.049                    1.229    9.83
114)  NAPHTHALENE
           2.239 2.485 2.659 2.739 2.700 2.073                    2.483   10.98
115)  INDANE
                                                                  0.000   -1.00
116)  ETHYLENIMINE
                                                                  0.000   -1.00
117)  BIS(CHLOROMETHYL)ETHER
                                                                  0.000   -1.00
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MT9358.M          Mon Nov 13 12:32:56 2017   MSDT
```

Initial Calibration Verification

Job Number: JC55198 **Sample:** VT9358-ICV9358
Account: UTC United Technologies Corporation **Lab FileID:** T227859.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T227859.D Vial: 14
Acq On : 9 Nov 2017 6:20 am Operator: CHELSEAS
Sample : icv9358-20 Inst : GCMST
Misc : MS21916,VT9358,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Nov 09 09:23:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	100	0.00	7.42
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	101	0.00	9.46
24		ACETONITRILE	0.065	0.062	4.6	103	0.00	7.28
45	S	DIBROMOFLUOROMETHANE (SUR	0.414	0.419	-1.2	102	0.00	9.51
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	103	0.00	10.32
50	S	1,2-DICHLOROETHANE-d4	0.287	0.301	-4.9	108	0.00	9.91
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	102	0.00	13.53
67	S	TOLUENE-d8	1.279	1.278	0.1	101	0.00	11.95
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	109	0.00	16.07
90	S	4-BROMOFLUOROBENZENE	0.717	0.689	3.9	105	0.00	14.79

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T227853.D MT9358.M Thu Nov 09 09:30:00 2017 MSDT

Initial Calibration Verification

Job Number: JC55198 **Sample:** VT9358-ICV9358
Account: UTC United Technologies Corporation **Lab FileID:** T227860.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T227860.D Vial: 15
Acq On : 9 Nov 2017 6:50 am Operator: CHELSEAS
Sample : icv9358-20 Inst : GCMST
Misc : MS21916,VT9358,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Nov 10 15:42:16 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	104	0.00	7.43
2	M	TERTIARY BUTYL ALCOHOL	1.158	1.125	2.8	101	0.00	7.53
3	M	1,4-DIOXANE	0.094	0.099	-5.3	106	0.00	11.00
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	106	0.00	9.46
5		CHLORODIFLUOROMETHANE	1.111	1.050	5.5	98	0.00	4.37
6	M	DICHLORODIFLUOROMETHANE	1.091	0.867	20.5	77	0.00	4.37
7	M	FREON 143A	1.209	0.767	36.6#	63	0.00	4.03
8	M	FREON 142B	0.733	0.785	-7.1	111	0.00	4.62
9	M	CHLOROMETHANE	1.082	0.894	17.4	87	0.00	4.69
10	M	VINYL CHLORIDE	1.092	0.933	14.6	86	0.00	4.94
11	M	BROMOMETHANE	0.586	0.550	6.1	90	0.00	5.57
12	M	CHLOROETHANE	0.498	0.481	3.4	97	0.00	5.73
13		VINYL BROMIDE	0.454	0.457	-0.7	100	0.00	6.04
14	M	TRICHLOROFLUOROMETHANE	0.774	0.742	4.1	94	0.00	6.14
15	M	PENTANE		----------NA----------				
16	M	FREON 141B	0.665	0.674	-1.4	98	0.00	6.54
17		ETHYL ETHER	0.232	0.238	-2.6	105	0.00	6.51
18	M	1,1-DICHLOROETHYLENE	0.723	0.699	3.3	99	0.00	6.90
19	M	FREON 113	0.486	0.544	-11.9	112	0.00	6.88
20		ACROLEIN	0.073	0.067	8.2	100	0.00	6.72
21	M	ACETONE	0.035	0.034	2.9	98	0.00	6.91
22	M	CARBON DISULFIDE	1.720	1.816	-5.6	105	0.00	7.27
23	M	IODOMETHANE	0.832	0.810	2.6	100	0.00	7.15
24		ACETONITRILE	0.065	0.053	18.5	92	0.00	7.28
25		METHYL ACETATE	0.336	0.274	18.5	92	0.00	7.32
26	M	METHYLENE CHLORIDE	0.510	0.497	2.5	104	0.00	7.50
27	M	ACRYLONITRILE	0.154	0.171	-11.0	121	0.00	7.78
28	M	METHYL TERT BUTYL ETHER	1.512	1.536	-1.6	108	0.00	7.82
29	M	trans-1,2-DICHLOROETHYLEN	0.668	0.681	-1.9	104	0.00	7.85
30	M	HEXANE	0.684	0.616	9.9	86	0.00	8.15
31	M	1,1-DICHLOROETHANE	0.831	0.833	-0.2	104	0.00	8.35
32	M	VINYL ACETATE	0.059	0.066	-11.9	118	0.00	8.32
33	M	DI-ISOPROPYL ETHER	1.887	1.949	-3.3	108	0.00	8.34
34	M	ETHYL TERT BUTYL ETHER	1.673	1.741	-4.1	109	0.00	8.76
35	M	2-BUTANONE	0.040	0.038	5.0	95	0.00	8.96
36	M	cis-1,2-DICHLOROETHYLENE	0.511	0.503	1.6	105	0.00	9.00
37	M	2,2-DICHLOROPROPANE	0.812	0.771	5.0	97	0.00	9.04
38	M	ETHYL ACETATE	0.058	0.066	-13.8	113	0.01	8.98
39		BROMOCHLOROMETHANE	0.214	0.223	-4.2	102	0.00	9.28
40	M	TETRAHYDROFURAN	0.134	0.139	-3.7	111	0.00	9.33
41	M	CHLOROFORM	0.712	0.733	-2.9	104	0.00	9.32

Initial Calibration Verification

Job Number: JC55198 **Sample:** VT9358-ICV9358
Account: UTC United Technologies Corporation **Lab FileID:** T227860.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

42		t-BUTYL FORMATE	0.055	0.276	-401.8#	542#	0.00	9.39
43	M	1,1,1-TRICHLOROETHANE	0.768	0.781	-1.7	103	0.00	9.61
44		CYCLOHEXANE	0.898	0.869	3.2	98	0.00	9.69
45	S	DIBROMOFLUOROMETHANE (SUR	0.414	0.398	3.9	102	0.00	9.51
46		1,1-DICHLOROPROPENE	0.599	0.622	-3.8	105	0.00	9.76
47		CARBON TETRACHLORIDE	0.678	0.681	-0.4	104	0.00	9.79
48		ISOPROPYL ACETATE	0.082	0.082	0.0	108	0.00	9.89
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	106	0.00	10.32
50	S	1,2-DICHLOROETHANE-d4	0.287	0.289	-0.7	107	0.00	9.91
51	M	BENZENE	1.342	1.365	-1.7	104	0.00	10.00
52	M	1,2-DICHLOROETHANE	0.339	0.353	-4.1	110	0.00	9.99
53		2,2,4-TRIMETHYLPENTANE	1.596	1.601	-0.3	104	0.00	10.02
54	M	TERT-AMYL METHYL ETHER	1.134	1.167	-2.9	106	0.00	10.03
55	M	HEPTANE	0.288	0.330	-14.6	113	0.00	10.17
56	M	TRICHLOROETHYLENE	0.312	0.326	-4.5	106	0.00	10.66
57	M	1,2-DICHLOROPROPANE	0.378	0.399	-5.6	109	0.00	10.91
58	M	DIBROMOMETHANE	0.171	0.176	-2.9	101	0.00	11.05
59		METHYL METHACRYLATE	0.064	0.069	-7.8	107	0.00	10.89
60		METHYLCYCLOHEXANE	0.797	0.787	1.3	96	0.00	10.91
61	M	BROMODICHLOROMETHANE	0.386	0.403	-4.4	107	0.00	11.16
62	M	2-CHLOROETHYL VINYL ETHER	0.128	0.195	-52.3#	150	0.00	11.40
63	M	EPICHLOROHYDRIN	0.026	0.027	-3.8	107	0.00	11.52
64	M	cis-1,3-DICHLOROPROPENE	0.526	0.537	-2.1	105	0.00	11.63
65	M	4-METHYL-2-PENTANONE	0.122	0.122	0.0	103	0.00	11.73
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	104	0.00	13.53
67	S	TOLUENE-d8	1.279	1.288	-0.7	103	0.00	11.94
68		TOLUENE	0.851	0.860	-1.1	105	0.00	12.02
69		ETHYL METHACRYLATE	0.391	0.398	-1.8	102	0.00	12.18
70		trans-1,3-DICHLOROPROPENE	0.453	0.476	-5.1	105	0.00	12.18
71		1,1,2-TRICHLOROETHANE	0.235	0.242	-3.0	103	0.00	12.41
72	M	TETRACHLOROETHYLENE	0.290	0.390	-34.5	139	0.00	12.63
73	M	2-HEXANONE	0.119	0.118	0.8	101	0.00	12.60
74		1,3-DICHLOROPROPANE	0.458	0.483	-5.5	106	0.00	12.61
75	M	BUTYL ACETATE	0.208	0.233	-12.0	114	0.00	12.68
76		3,3-DIMETHYL-1-BUTANOL	0.042	0.040	4.8	102	0.00	12.76
77	M	DIBROMOCHLOROMETHANE	0.298	0.314	-5.4	107	0.00	12.89
78	M	ETHYLENE DIBROMIDE	0.255	0.274	-7.5	104	0.00	13.06
79	M	CHLOROBENZENE	0.949	0.974	-2.6	104	0.00	13.56
80	M	1,1,1,2-TETRACHLOROETHANE	0.386	0.405	-4.9	105	0.00	13.62
81	M	ETHYLBENZENE	1.614	1.672	-3.6	102	0.00	13.62
82	M	m,p-XYLENE	0.621	0.655	-5.5	105	0.00	13.74
83	M	o-XYLENE	1.400	1.440	-2.9	103	0.00	14.19
84	M	STYRENE	1.013	1.062	-4.8	102	0.00	14.20
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.208	0.220	-5.8	107	0.00	14.47
87	M	CUMENE	1.789	1.870	-4.5	102	0.00	14.57
88		cis-1,4-DICHLORO-2-BUTENE	0.103	0.105	-1.9	106	0.00	14.62
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	103	0.00	16.07
90	S	4-BROMOFLUOROBENZENE	0.717	0.716	0.1	103	0.00	14.78
91		1,1,2,2-TETRACHLOROETHANE	0.721	0.693	3.9	102	0.00	14.87
92		trans-1,4-DICHLORO-2-BUTE	0.152	0.160	-5.3	115	0.00	14.92
93		1,2,3-TRICHLOROPROPANE	0.149	0.159	-6.7	105	0.00	14.97
94		N-PROPYLBENZENE	3.464	3.620	-4.5	103	0.00	15.02
95		BROMOBENZENE	0.719	0.734	-2.1	104	0.00	15.00
96		2-CHLOROTOLUENE	0.724	0.743	-2.6	102	0.00	15.18
97		4-CHLOROTOLUENE	2.049	2.065	-0.8	105	0.00	15.29
98	M	1,3,5-TRIMETHYLBENZENE	2.536	2.670	-5.3	103	0.00	15.19

Initial Calibration Verification

Job Number: JC55198 **Sample:** VT9358-ICV9358
Account: UTC United Technologies Corporation **Lab FileID:** T227860.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

99		TERT-BUTYLBENZENE	2.336	2.311	1.1	105	0.00	15.58
100	M	1,2,4-TRIMETHYLBENZENE	2.626	2.766	-5.3	104	0.00	15.62
101		SEC-BUTYLBENZENE	3.762	3.770	-0.2	101	0.00	15.81
102		P-ISOPROPYLTOLUENE	2.979	3.155	-5.9	104	0.00	15.95
103	M	1,3-DICHLOROBENZENE	1.491	1.520	-1.9	105	0.00	16.01
104	M	1,4-DICHLOROBENZENE	1.537	1.546	-0.6	105	0.00	16.10
105		N-BUTYLBENZENE	0.774	0.795	-2.7	104	0.00	16.40
106	M	1,2-DICHLOROBENZENE	1.570	1.568	0.1	102	0.00	16.53
107		HEXACHLOROETHANE	0.352	0.347	1.4	109	0.00	16.83
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.164	0.160	2.4	101	0.00	17.36
109		HEXACHLOROBUTADIENE	0.799	0.776	2.9	101	0.00	18.41
110		1,3,5-TRICHLOROBENZENE	1.575	1.681	-6.7	108	0.00	17.58
111		NITROBENZENE	0.055	0.051	7.3	100	0.00	17.58
112	M	1,2,4-TRICHLOROBENZENE	1.415	1.400	1.1	100	0.00	18.27
113		1,2,3-TRICHLOROBENZENE	1.229	1.244	-1.2	103	0.00	18.86
114	M	NAPHTHALENE	2.483	2.501	-0.7	103	0.00	18.59
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T227853.D MT9358.M Mon Nov 13 12:32:27 2017 MSDT

Continuing Calibration Summary

Job Number: JC55198 **Sample:** VT9362-CC9358
Account: UTC United Technologies Corporation **Lab FileID:** T227926.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T227926.D Vial: 3
Acq On : 13 Nov 2017 7:50 am Operator: CHELSEAS
Sample : CC9358-20 Inst : GCMST
Misc : MS21954,VT9362,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Nov 10 15:42:16 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	120	0.00	7.43
2	M	TERTIARY BUTYL ALCOHOL	1.158	1.167	-0.8	121	0.00	7.53
3	M	1,4-DIOXANE	0.094	0.101	-7.4	125	0.00	11.00
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	110	0.00	9.47
5		CHLORODIFLUOROMETHANE	1.111	1.317	-18.5	127	0.00	4.38
6	M	DICHLORODIFLUOROMETHANE	1.091	0.885	18.9	81	-0.01	4.36
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE	1.082	0.983	9.1	99	0.00	4.70
10	M	VINYL CHLORIDE	1.092	1.045	4.3	100	0.00	4.94
11	M	BROMOMETHANE	0.586	0.645	-10.1	110	0.00	5.57
12	M	CHLOROETHANE	0.498	0.531	-6.6	111	0.00	5.73
13		VINYL BROMIDE	0.454	0.488	-7.5	111	0.00	6.05
14	M	TRICHLOROFLUOROMETHANE	0.774	0.759	1.9	100	0.00	6.15
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER	0.232	0.268	-15.5	123	0.00	6.51
18	M	1,1-DICHLOROETHYLENE	0.723	0.723	0.0	106	0.00	6.90
19	M	FREON 113	0.486	0.493	-1.4	105	0.00	6.88
20		ACROLEIN	0.073	0.089	-21.9	137	0.00	6.72
21	M	ACETONE	0.035	0.045	-28.6	131	0.00	6.90
22	M	CARBON DISULFIDE	1.720	2.018	-17.3	121	0.00	7.28
23	M	IODOMETHANE	0.832	0.927	-11.4	119	0.00	7.15
24		ACETONITRILE	0.065	0.073	-12.3	131	0.00	7.28
25		METHYL ACETATE	0.336	0.359	-6.8	126	0.00	7.32
26	M	METHYLENE CHLORIDE	0.510	0.540	-5.9	118	0.00	7.51
27	M	ACRYLONITRILE	0.154	0.171	-11.0	126	0.00	7.78
28	M	METHYL TERT BUTYL ETHER	1.512	1.662	-9.9	121	0.00	7.81
29	M	trans-1,2-DICHLOROETHYLEN	0.668	0.722	-8.1	114	0.00	7.85
30	M	HEXANE	0.684	0.729	-6.6	105	0.00	8.14
31	M	1,1-DICHLOROETHANE	0.831	0.889	-7.0	115	0.00	8.35
32	M	VINYL ACETATE	0.059	0.071	-20.3	132	0.00	8.32
33	M	DI-ISOPROPYL ETHER	1.887	2.151	-14.0	123	0.00	8.34
34	M	ETHYL TERT BUTYL ETHER	1.673	1.861	-11.2	121	0.00	8.76
35	M	2-BUTANONE	0.040	0.048	-20.0	124	0.00	8.95
36	M	cis-1,2-DICHLOROETHYLENE	0.511	0.528	-3.3	114	0.00	9.01
37	M	2,2-DICHLOROPROPANE	0.812	0.854	-5.2	111	0.00	9.04
38	M	ETHYL ACETATE	0.058	0.070	-20.7	124	0.00	8.97
39		BROMOCHLOROMETHANE	0.214	0.246	-15.0	117	0.00	9.28
40	M	TETRAHYDROFURAN	0.134	0.154	-14.9	128	0.00	9.34
41	M	CHLOROFORM	0.712	0.770	-8.1	114	0.00	9.33

Continuing Calibration Summary

Job Number: JC55198 **Sample:** VT9362-CC9358
Account: UTC United Technologies Corporation **Lab FileID:** T227926.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

42		t-BUTYL FORMATE	0.055	0.227	-312.7#	464#	0.00	9.39
43	M	1,1,1-TRICHLOROETHANE	0.768	0.792	-3.1	108	0.00	9.60
44		CYCLOHEXANE	0.898	0.860	4.2	101	0.00	9.69
45	S	DIBROMOFLUOROMETHANE (SUR	0.414	0.439	-6.0	117	0.00	9.51
46		1,1-DICHLOROPROPENE	0.599	0.619	-3.3	109	0.00	9.75
47		CARBON TETRACHLORIDE	0.678	0.690	-1.8	109	0.00	9.79
48		ISOPROPYL ACETATE	0.082	0.087	-6.1	119	0.00	9.89
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	118	0.00	10.32
50	S	1,2-DICHLOROETHANE-d4	0.287	0.296	-3.1	122	0.00	9.91
51	M	BENZENE	1.342	1.340	0.1	114	0.00	10.01
52	M	1,2-DICHLOROETHANE	0.339	0.347	-2.4	121	0.00	9.99
53		2,2,4-TRIMETHYLPENTANE	1.596	1.429	10.5	104	0.00	10.03
54	M	TERT-AMYL METHYL ETHER	1.134	1.162	-2.5	119	0.00	10.03
55	M	HEPTANE	0.288	0.276	4.2	106	0.00	10.16
56	M	TRICHLOROETHYLENE	0.312	0.302	3.2	110	0.00	10.66
57	M	1,2-DICHLOROPROPANE	0.378	0.378	0.0	115	0.00	10.92
58	M	DIBROMOMETHANE	0.171	0.175	-2.3	113	0.00	11.05
59		METHYL METHACRYLATE	0.064	0.065	-1.6	113	0.00	10.89
60		METHYLCYCLOHEXANE	0.797	0.737	7.5	101	0.00	10.91
61	M	BROMODICHLOROMETHANE	0.386	0.391	-1.3	116	0.00	11.17
62	M	2-CHLOROETHYL VINYL ETHER	0.128	0.183	-43.0#	158	0.00	11.40
63	M	EPICHLOROHYDRIN	0.026	0.027	-3.8	120	0.00	11.52
64	M	cis-1,3-DICHLOROPROPENE	0.526	0.532	-1.1	116	0.00	11.63
65	M	4-METHYL-2-PENTANONE	0.122	0.124	-1.6	118	0.00	11.73
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	116	0.00	13.53
67	S	TOLUENE-d8	1.279	1.304	-2.0	117	0.00	11.95
68		TOLUENE	0.851	0.811	4.7	111	0.00	12.02
69		ETHYL METHACRYLATE	0.391	0.413	-5.6	119	0.00	12.19
70		trans-1,3-DICHLOROPROPENE	0.453	0.471	-4.0	116	0.00	12.19
71		1,1,2-TRICHLOROETHANE	0.235	0.245	-4.3	116	0.00	12.42
72	M	TETRACHLOROETHYLENE	0.290	0.266	8.3	105	0.00	12.63
73	M	2-HEXANONE	0.119	0.122	-2.5	116	0.00	12.60
74		1,3-DICHLOROPROPANE	0.458	0.470	-2.6	115	0.00	12.61
75	M	BUTYL ACETATE	0.208	0.237	-13.9	129	0.00	12.67
76		3,3-DIMETHYL-1-BUTANOL	0.042	0.041	2.4	116	0.00	12.76
77	M	DIBROMOCHLOROMETHANE	0.298	0.312	-4.7	118	0.00	12.88
78	M	ETHYLENE DIBROMIDE	0.255	0.268	-5.1	114	0.00	13.06
79	M	CHLOROBENZENE	0.949	0.922	2.8	110	0.00	13.56
80	M	1,1,1,2-TETRACHLOROETHANE	0.386	0.389	-0.8	112	0.00	13.62
81	M	ETHYLBENZENE	1.614	1.600	0.9	109	0.00	13.63
82	M	m,p-XYLENE	0.621	0.615	1.0	110	0.00	13.74
83	M	o-XYLENE	1.400	1.405	-0.4	112	0.00	14.20
84	M	STYRENE	1.013	1.038	-2.5	111	0.00	14.20
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.208	0.226	-8.7	123	0.00	14.47
87	M	CUMENE	1.789	1.793	-0.2	109	0.00	14.57
88		cis-1,4-DICHLORO-2-BUTENE	0.103	0.120	-16.5	135	0.00	14.62
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	114	0.00	16.07
90	S	4-BROMOFLUOROBENZENE	0.717	0.721	-0.6	116	0.00	14.79
91		1,1,2,2-TETRACHLOROETHANE	0.721	0.714	1.0	117	0.00	14.86
92		trans-1,4-DICHLORO-2-BUTE	0.152	0.166	-9.2	132	0.00	14.92
93		1,2,3-TRICHLOROPROPANE	0.149	0.162	-8.7	118	0.00	14.96
94		N-PROPYLBENZENE	3.464	3.470	-0.2	110	0.00	15.02
95		BROMOBENZENE	0.719	0.711	1.1	112	0.00	15.01
96		2-CHLOROTOLUENE	0.724	0.723	0.1	111	0.00	15.18
97		4-CHLOROTOLUENE	2.049	1.991	2.8	112	0.00	15.29
98	M	1,3,5-TRIMETHYLBENZENE	2.536	2.585	-1.9	111	0.00	15.18

Continuing Calibration Summary

Job Number: JC55198 **Sample:** VT9362-CC9358
Account: UTC United Technologies Corporation **Lab FileID:** T227926.D
Project: SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH

99		TERT-BUTYLBENZENE	2.336	2.201	5.8	111	0.00	15.58
100	M	1,2,4-TRIMETHYLBENZENE	2.626	2.706	-3.0	113	0.00	15.62
101		SEC-BUTYLBENZENE	3.762	3.627	3.6	108	0.00	15.82
102		P-ISOPROPYLTOLUENE	2.979	2.968	0.4	108	0.00	15.94
103	M	1,3-DICHLOROBENZENE	1.491	1.477	0.9	113	0.00	16.01
104	M	1,4-DICHLOROBENZENE	1.537	1.502	2.3	113	0.00	16.10
105		N-BUTYLBENZENE	0.774	0.760	1.8	110	0.00	16.40
106	M	1,2-DICHLOROBENZENE	1.570	1.551	1.2	112	0.00	16.53
107		HEXACHLOROETHANE	0.352	0.332	5.7	116	0.00	16.84
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.164	0.164	0.0	116	0.00	17.36
109		HEXACHLOROBUTADIENE	0.799	0.728	8.9	106	0.00	18.41
110		1,3,5-TRICHLOROBENZENE	1.575	1.571	0.3	112	0.00	17.57
111		NITROBENZENE	0.055	0.058	-5.5	127	0.00	17.58
112	M	1,2,4-TRICHLOROBENZENE	1.415	1.393	1.6	110	0.00	18.27
113		1,2,3-TRICHLOROBENZENE	1.229	1.132	7.9	105	0.00	18.86
114	M	NAPHTHALENE	2.483	2.414	2.8	111	0.00	18.58
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T227853.D MT9358.M Tue Nov 14 13:34:27 2017 MSDT

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227932.D
Acq On : 13 Nov 2017 1:12 pm
Operator : CHELSEAS
Sample : jc55198-1
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 14 13:38:44 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

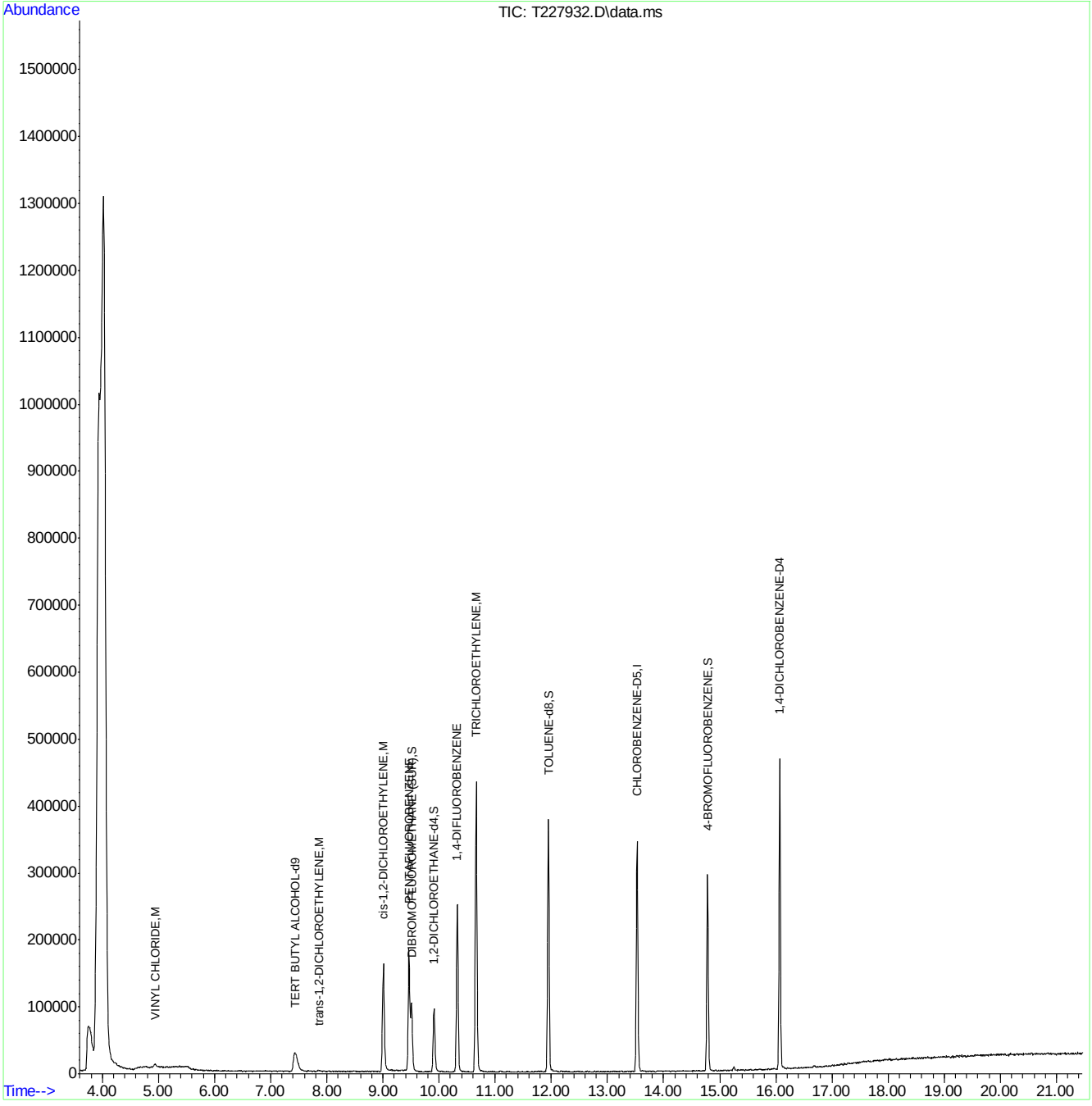
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.428	65	82499	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.462	168	155298	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.325	114	229838	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.526	117	222841	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.068	152	140394	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.509	113	69030	32.25	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 107.50%			
50) 1,2-DICHLOROETHANE-d4	9.907	65	69694	31.66	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 105.53%			
67) TOLUENE-d8	11.947	98	284416	29.93	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.77%			
90) 4-BROMOFLUOROBENZENE	14.781	174	96957	28.88	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.27%			
Target Compounds						Qvalue
10) VINYL CHLORIDE	4.933	62	9094	1.61	PPb	93
29) trans-1,2-DICHLOROETHY...	7.862	61	1044	0.30	PPb	80
36) cis-1,2-DICHLOROETHYLENE	9.007	96	84926	32.10	PPb	94
56) TRICHLOROETHYLENE	10.660	95	164639	68.79	PPb	96

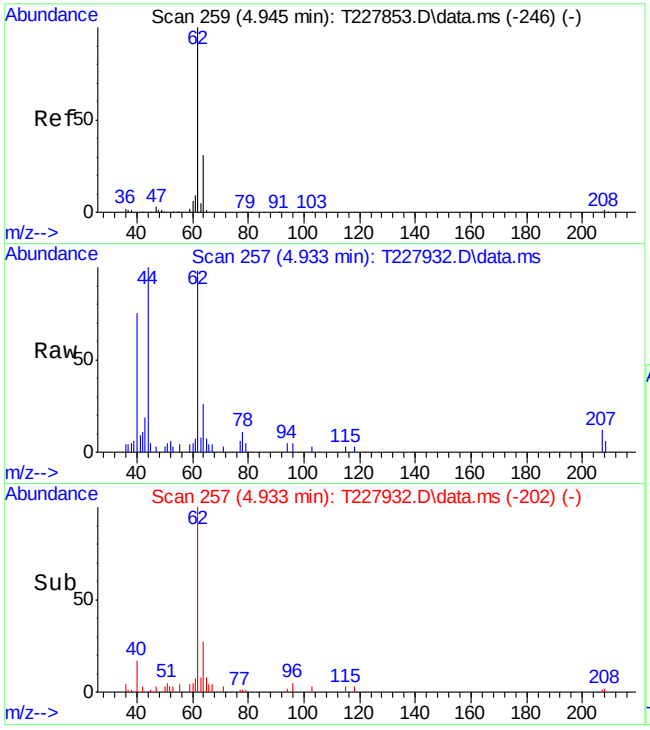
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227932.D
Acq On : 13 Nov 2017 1:12 pm
Operator : CHELSEAS
Sample : jc55198-1
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 14 13:38:44 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

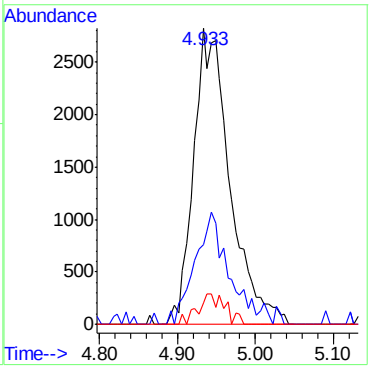


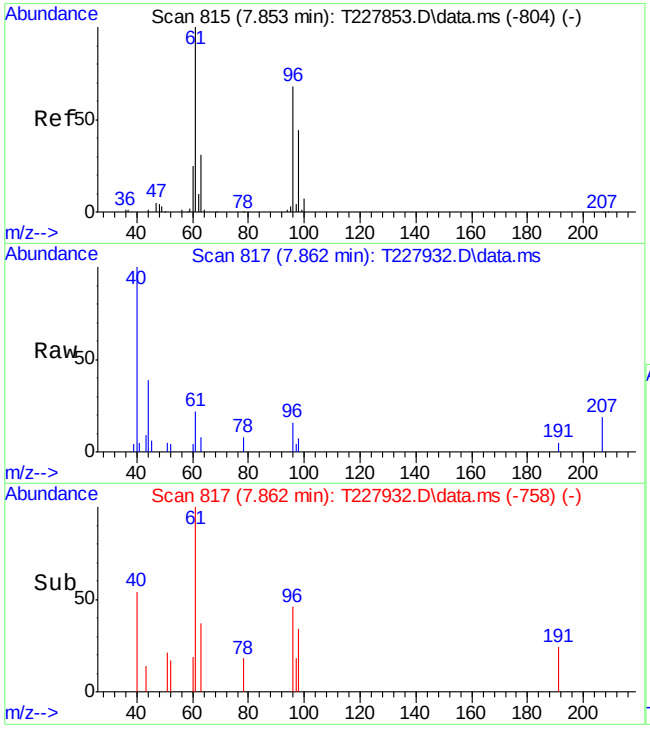


#10
VINYL CHLORIDE
Concen: 1.61 PPb
RT: 4.933 min Scan# 257
Delta R.T. -0.012 min
Lab File: T227932.D
Acq: 13 Nov 2017 1:12 pm

Tgt Ion: 62 Resp: 9094

Ion	Ratio	Lower	Upper
62	100		
64	26.8	1.0	61.0
61	7.1	0.0	38.6

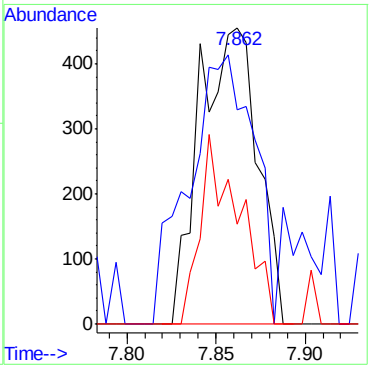




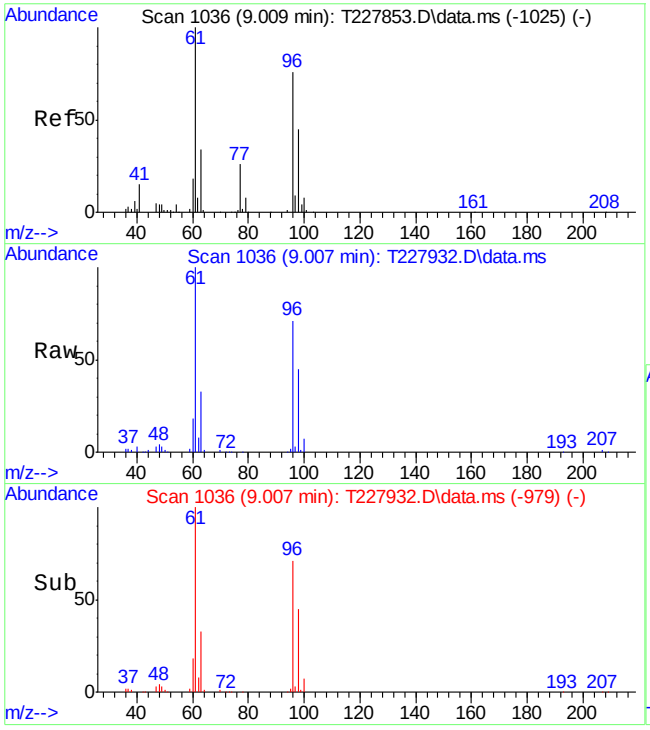
#29
trans-1,2-DICHLOROETHYLENE
Concen: 0.30 PPb
RT: 7.862 min Scan# 817
Delta R.T. 0.008 min
Lab File: T227932.D
Acq: 13 Nov 2017 1:12 pm

Tgt Ion: 61 Resp: 1044

Ion	Ratio	Lower	Upper
61	100		
96	49.5	38.1	98.1
98	33.8	14.3	74.3



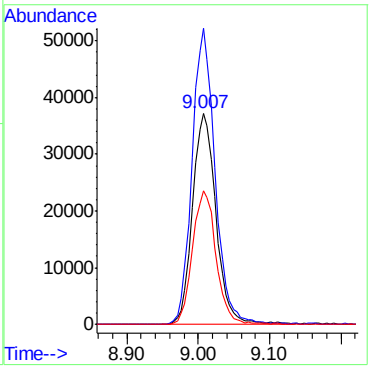
SGS ACCUTEST JC55198

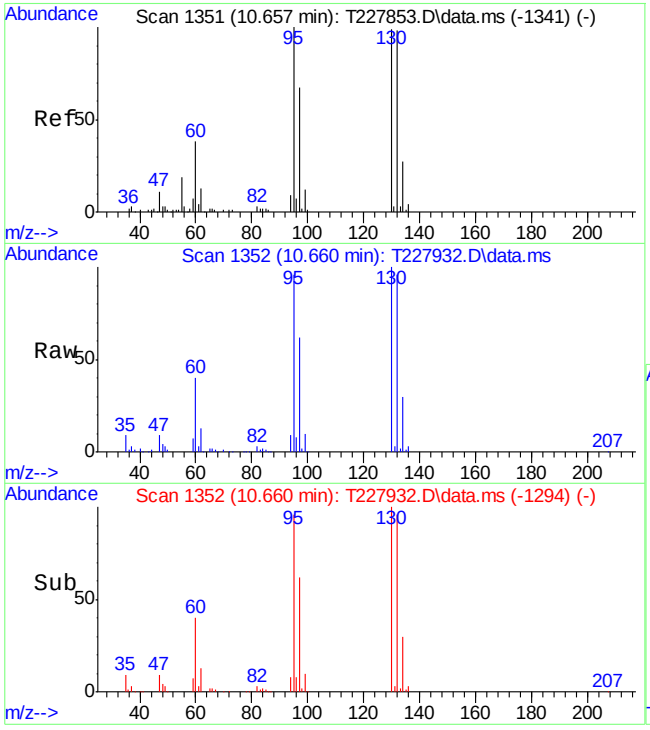


#36
cis-1,2-DICHLOROETHYLENE
Concen: 32.10 PPb
RT: 9.007 min Scan# 1036
Delta R.T. -0.002 min
Lab File: T227932.D
Acq: 13 Nov 2017 1:12 pm

Tgt Ion: 96 Resp: 84926

Ion	Ratio	Lower	Upper
96	100		
61	140.1	102.4	162.4
98	63.4	30.2	90.2

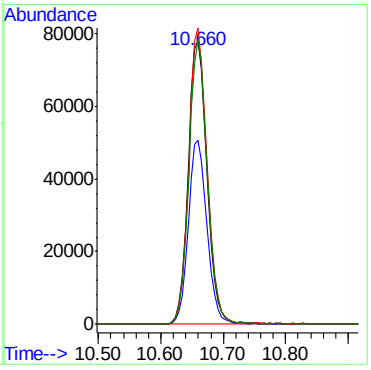




#56
TRICHLOROETHYLENE
Concen: 68.79 PPb
RT: 10.660 min Scan# 1352
Delta R.T. 0.003 min
Lab File: T227932.D
Acq: 13 Nov 2017 1:12 pm

Tgt Ion: 95 Resp: 164639

Ion	Ratio	Lower	Upper
95	100		
97	64.6	36.9	96.9
130	104.2	68.7	128.7
132	99.8	67.6	127.6



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227933.D
Acq On : 13 Nov 2017 1:42 pm
Operator : CHELSEAS
Sample : jc55198-2
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 14 13:39:21 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

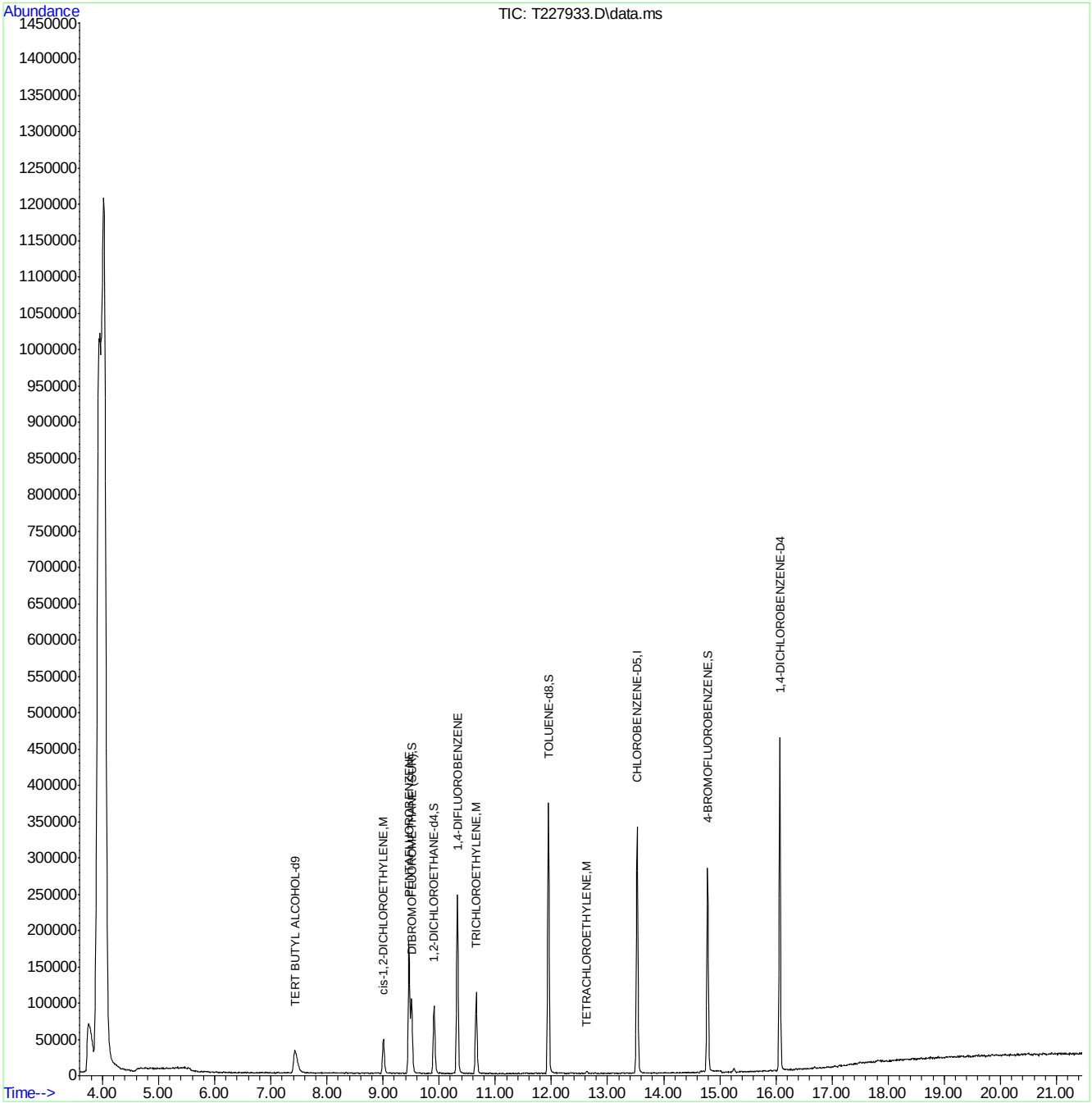
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.431	65	87055	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.466	168	151768	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.324	114	224025	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.530	117	218500	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.066	152	137002	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.508	113	68299	32.65	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.83%				
50) 1,2-DICHLOROETHANE-d4	9.905	65	67201	31.32	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 104.40%				
67) TOLUENE-d8	11.945	98	280753	30.13	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.43%				
90) 4-BROMOFLUOROBENZENE	14.785	174	96420	29.43	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.10%				
Target Compounds							Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.006	96	24352	9.42	PPb		97
56) TRICHLOROETHYLENE	10.658	95	42486	18.21	PPb		98
72) TETRACHLOROETHYLENE	12.630	164	605	0.29	PPb	#	50

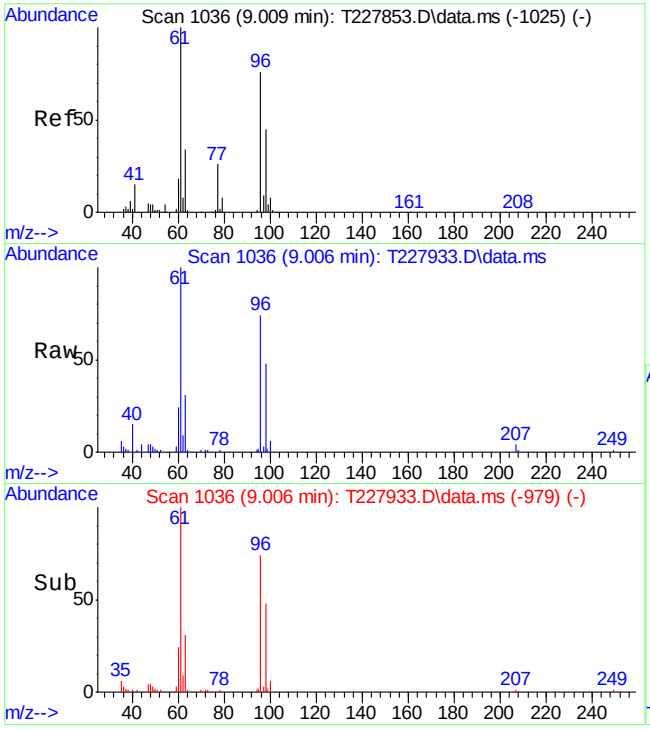
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227933.D
Acq On : 13 Nov 2017 1:42 pm
Operator : CHELSEAS
Sample : jc55198-2
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 14 13:39:21 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

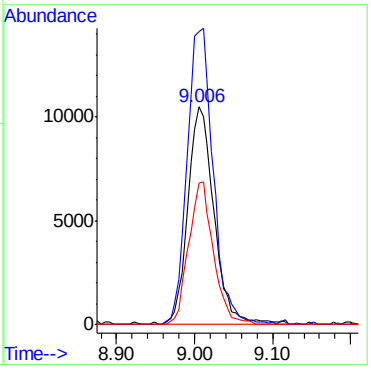


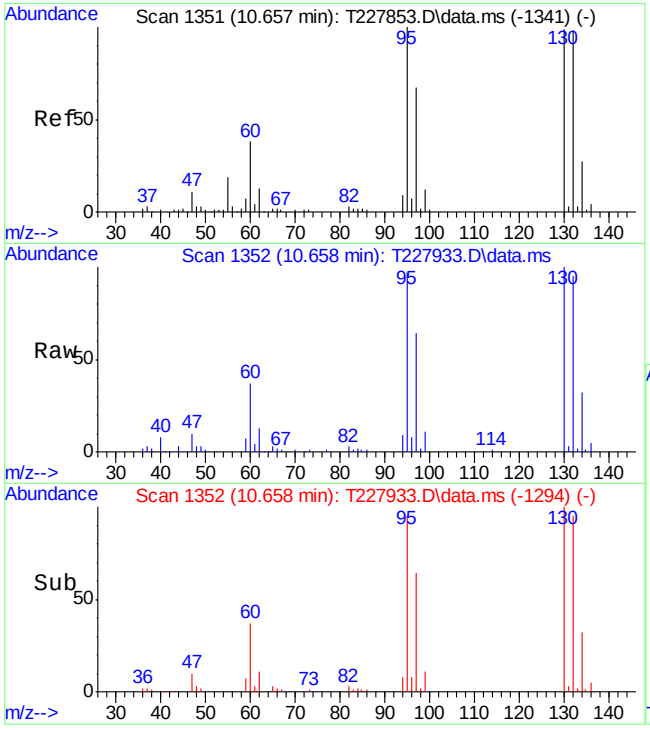


#36
cis-1,2-DICHLOROETHYLENE
Concen: 9.42 PPb
RT: 9.006 min Scan# 1036
Delta R.T. -0.003 min
Lab File: T227933.D
Acq: 13 Nov 2017 1:42 pm

Tgt Ion: 96 Resp: 24352

Ion	Ratio	Lower	Upper
96	100		
61	134.9	102.4	162.4
98	64.8	30.2	90.2

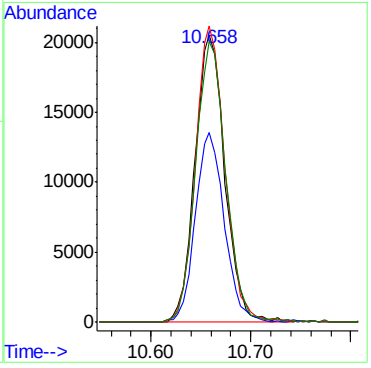


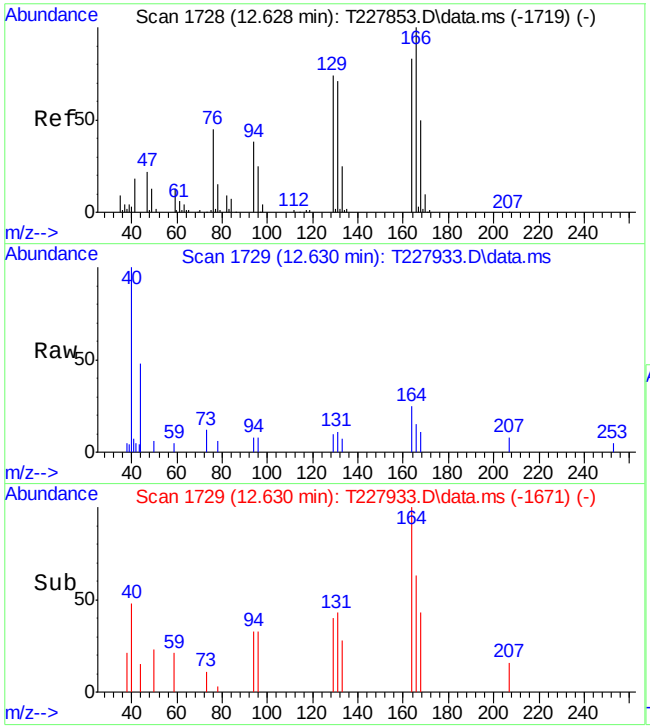


#56
TRICHLOROETHYLENE
Concen: 18.21 PPb
RT: 10.658 min Scan# 1352
Delta R.T. 0.002 min
Lab File: T227933.D
Acq: 13 Nov 2017 1:42 pm

Tgt Ion: 95 Resp: 42486

Ion	Ratio	Lower	Upper
95	100		
97	66.2	36.9	96.9
130	103.3	68.7	128.7
132	97.9	67.6	127.6

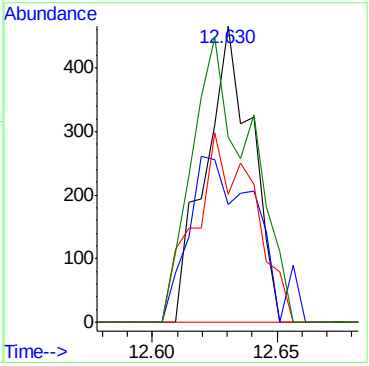




#72
TETRACHLOROETHYLENE
Concen: 0.29 PPb
RT: 12.630 min Scan# 1729
Delta R.T. 0.002 min
Lab File: T227933.D
Acq: 13 Nov 2017 1:42 pm

Tgt Ion:164 Resp: 605

Ion	Ratio	Lower	Upper
164	100		
129	39.9	58.7	118.7#
131	43.1	55.0	115.0#
166	62.7	90.5	150.5#



SGS ACCUTEST JC55198

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227934.D
Acq On : 13 Nov 2017 2:12 pm
Operator : CHELSEAS
Sample : jc55198-3
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 14 13:39:52 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

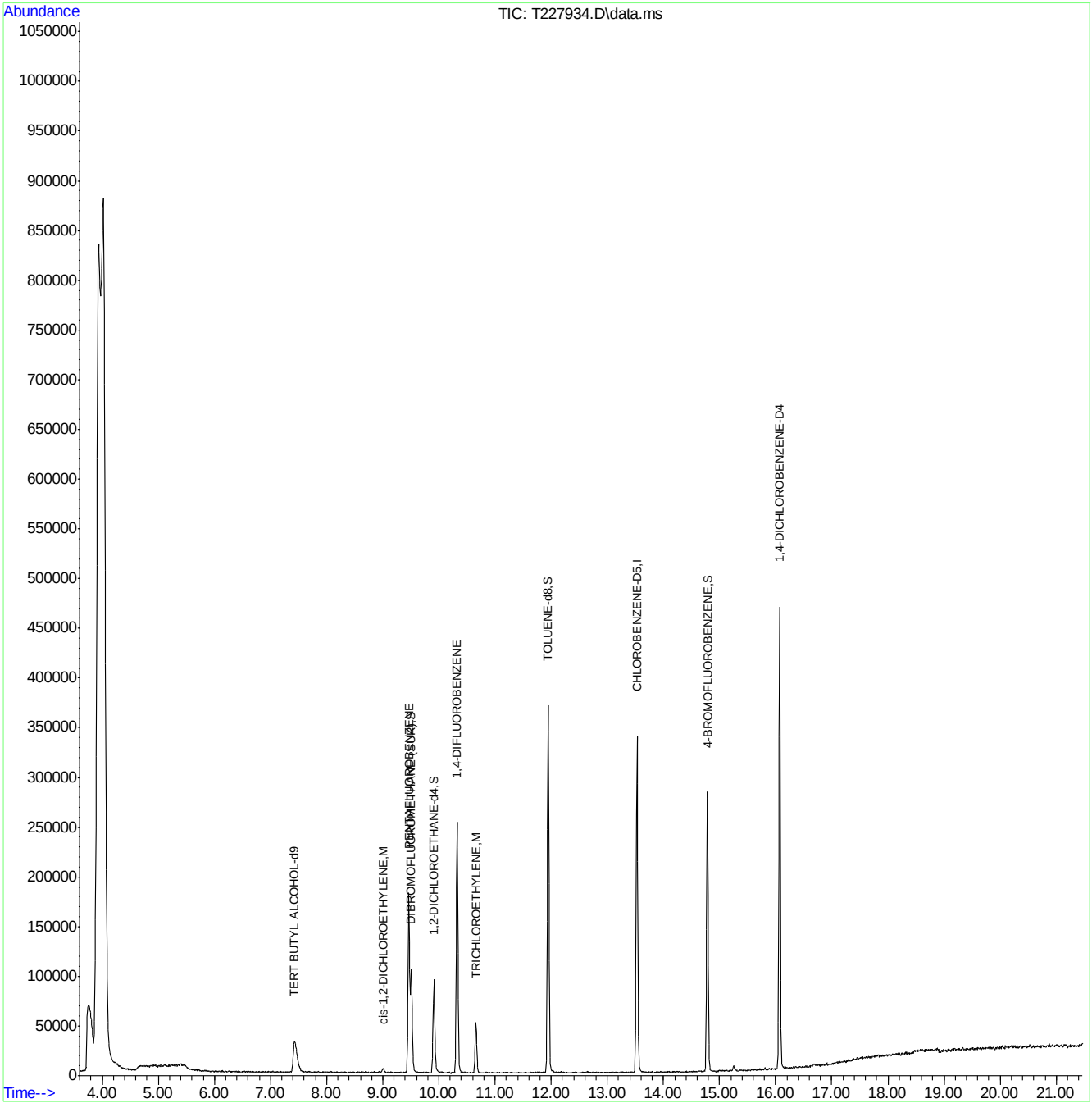
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.425	65	84498	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.465	168	153096	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.323	114	226277	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.529	117	217356	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.071	152	139393	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.507	113	69577	32.97	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.90%			
50) 1,2-DICHLOROETHANE-d4	9.910	65	67881	31.32	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 104.40%			
67) TOLUENE-d8	11.944	98	278982	30.10	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.33%			
90) 4-BROMOFLUOROBENZENE	14.784	174	97277	29.18	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.27%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.015	96	2443	0.94	PPb	77
56) TRICHLOROETHYLENE	10.658	95	19225	8.16	PPb	94

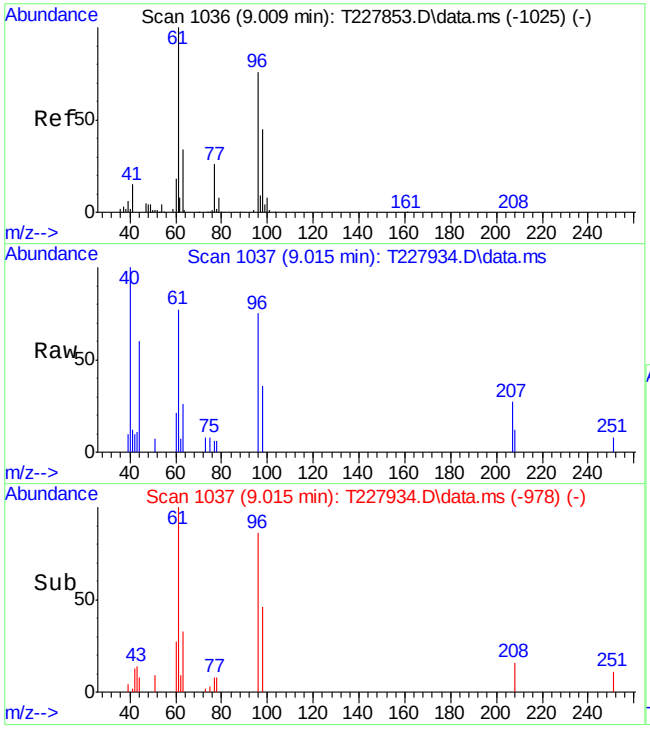
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227934.D
Acq On : 13 Nov 2017 2:12 pm
Operator : CHELSEAS
Sample : jc55198-3
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 14 13:39:52 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

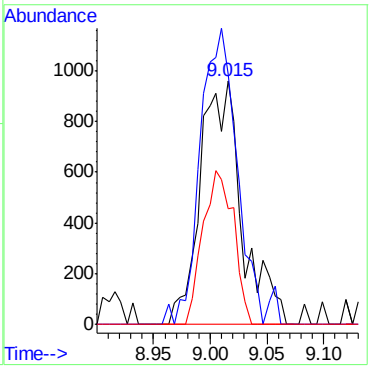


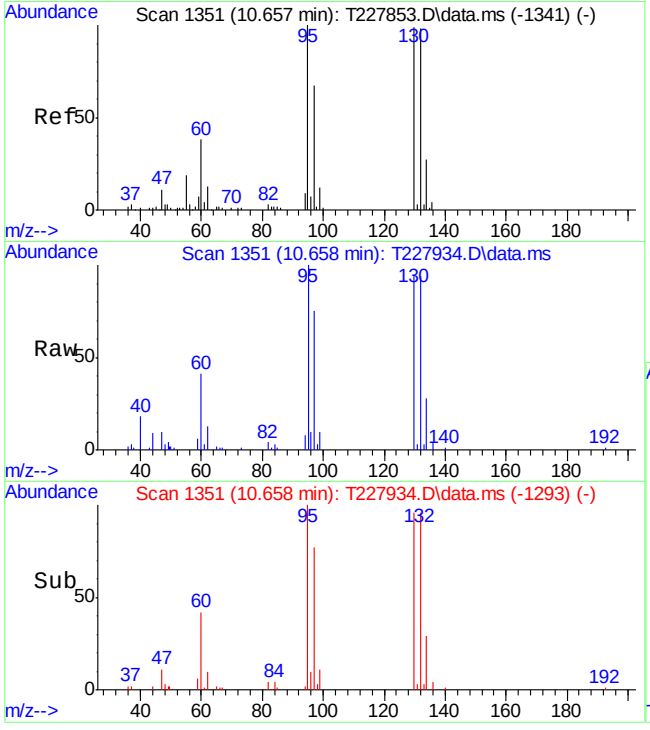


#36
cis-1,2-DICHLOROETHYLENE
Concen: 0.94 PPb
RT: 9.015 min Scan# 1037
Delta R.T. 0.006 min
Lab File: T227934.D
Acq: 13 Nov 2017 2:12 pm

Tgt Ion: 96 Resp: 2443

Ion	Ratio	Lower	Upper
96	100		
61	102.7	102.4	162.4
98	47.7	30.2	90.2

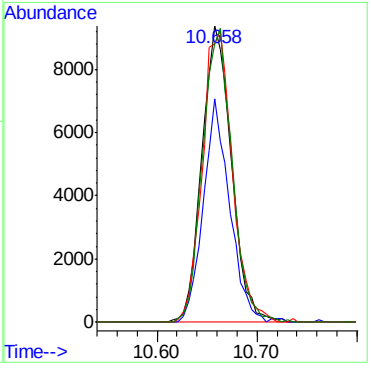




#56
TRICHLOROETHYLENE
Concen: 8.16 PPb
RT: 10.658 min Scan# 1351
Delta R.T. 0.001 min
Lab File: T227934.D
Acq: 13 Nov 2017 2:12 pm

Tgt Ion: 95 Resp: 19225

Ion	Ratio	Lower	Upper
95	100		
97	75.3	36.9	96.9
130	93.8	68.7	128.7
132	93.8	67.6	127.6



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227943.D
Acq On : 13 Nov 2017 6:43 pm
Operator : CHELSEAS
Sample : jc55198-4
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 14 13:43:59 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

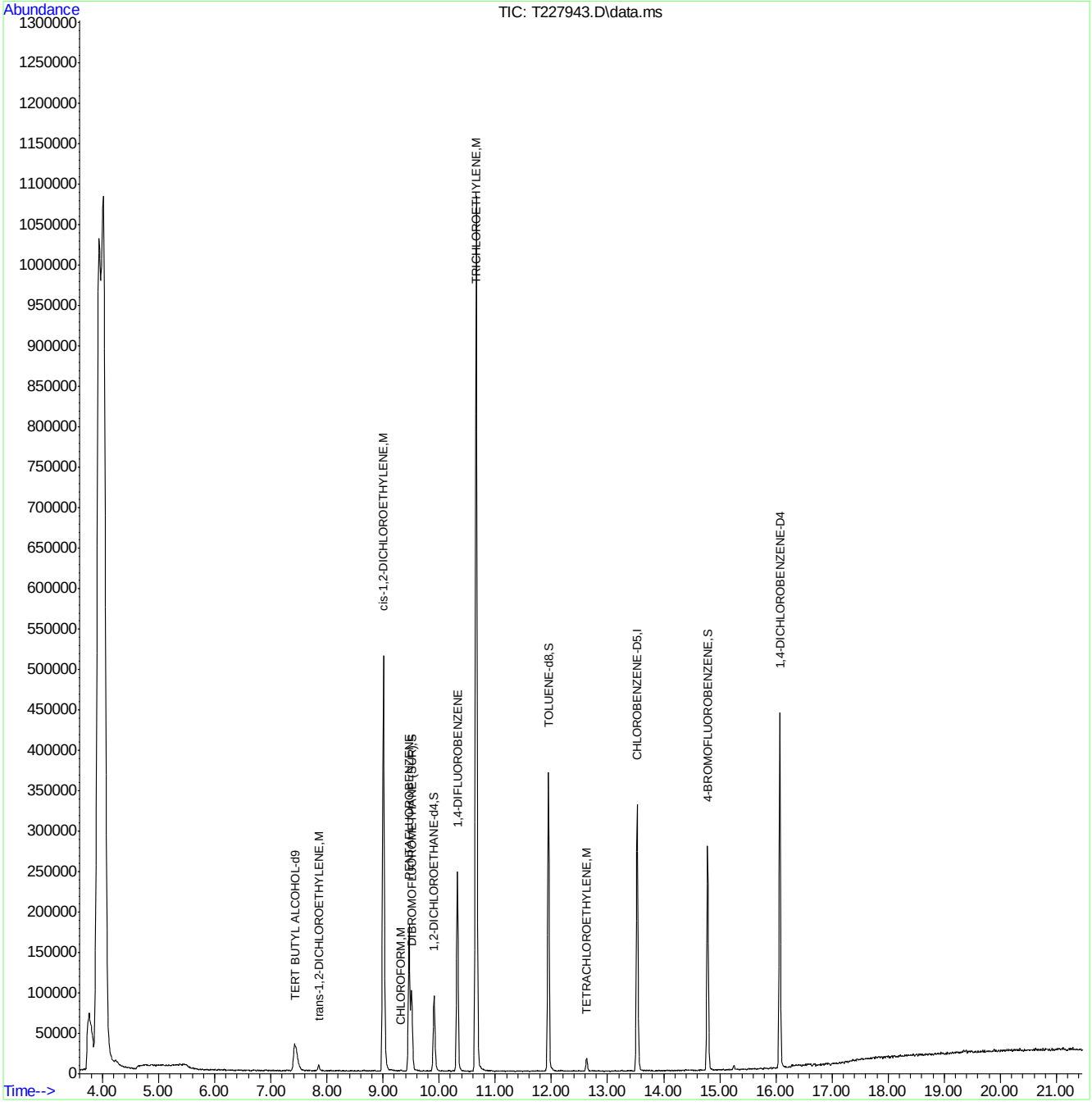
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.437	65	90161	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.466	168	151693	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.324	114	222947	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.530	117	215536	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.072	152	134512	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.508	113	67882	32.46	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.20%			
50) 1,2-DICHLOROETHANE-d4	9.911	65	67688	31.70	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 105.67%			
67) TOLUENE-d8	11.945	98	275581	29.99	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.97%			
90) 4-BROMOFLUOROBENZENE	14.785	174	94056	29.24	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.47%			
Target Compounds						Qvalue
29) trans-1,2-DICHLOROETHY...	7.856	61	5764	1.71	PPb	92
36) cis-1,2-DICHLOROETHYLENE	9.006	96	255033	98.69	PPb	94
41) CHLOROFORM	9.330	83	740	0.21	PPb	76
56) TRICHLOROETHYLENE	10.659	95	414590	178.57	PPb	98
72) TETRACHLOROETHYLENE	12.631	164	4556	2.18	PPb	94

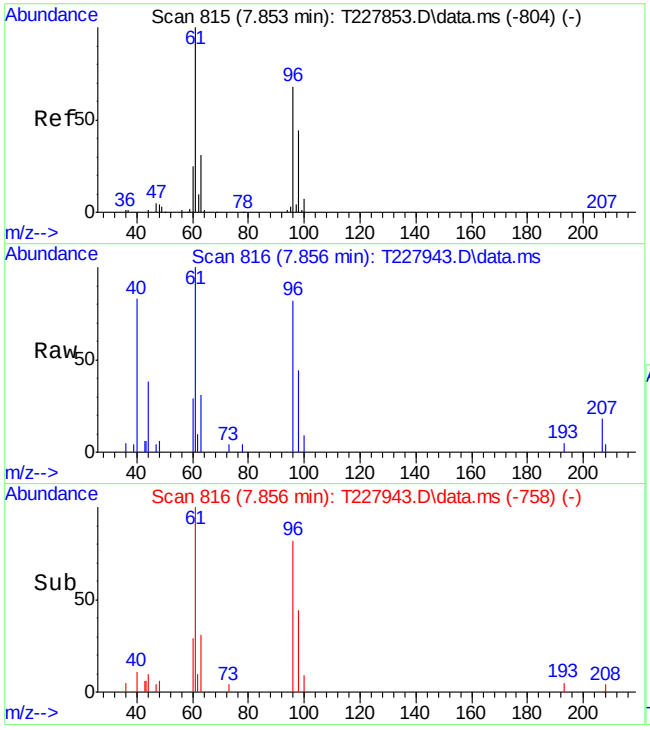
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227943.D
Acq On : 13 Nov 2017 6:43 pm
Operator : CHELSEAS
Sample : jc55198-4
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 14 13:43:59 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

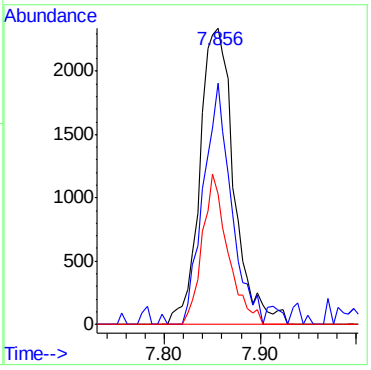


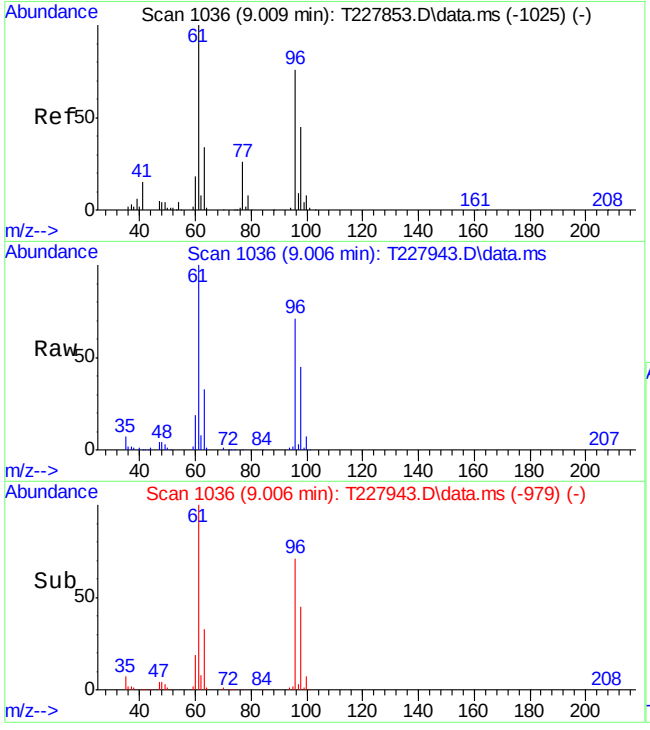


#29
trans-1,2-DICHLOROETHYLENE
Concen: 1.71 PPb
RT: 7.856 min Scan# 816
Delta R.T. 0.002 min
Lab File: T227943.D
Acq: 13 Nov 2017 6:43 pm

Tgt Ion: 61 Resp: 5764

Ion	Ratio	Lower	Upper
61	100		
96	78.0	38.1	98.1
98	43.9	14.3	74.3

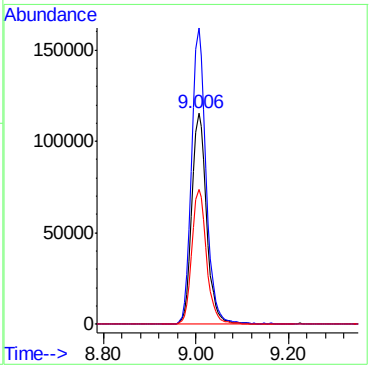


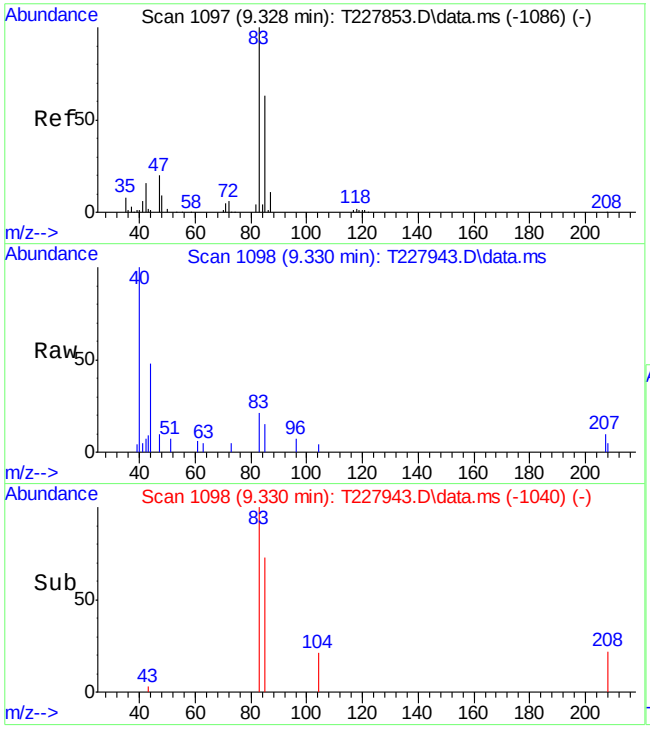


#36
cis-1,2-DICHLOROETHYLENE
Concen: 98.69 PPb
RT: 9.006 min Scan# 1036
Delta R.T. -0.003 min
Lab File: T227943.D
Acq: 13 Nov 2017 6:43 pm

Tgt Ion: 96 Resp: 255033

Ion	Ratio	Lower	Upper
96	100		
61	140.4	102.4	162.4
98	63.8	30.2	90.2

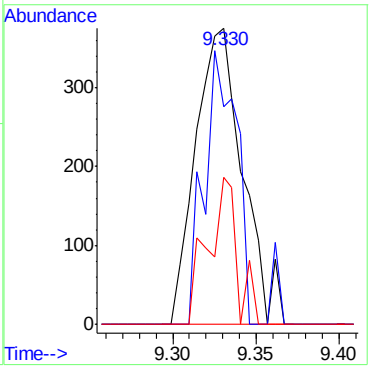


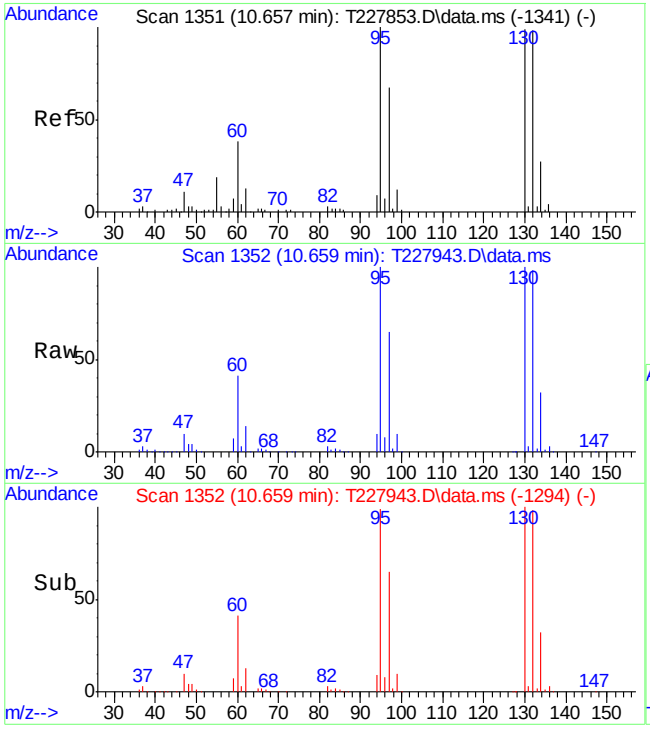


#41
CHLOROFORM
Concen: 0.21 PPb
RT: 9.330 min Scan# 1098
Delta R.T. 0.002 min
Lab File: T227943.D
Acq: 13 Nov 2017 6:43 pm

Tgt Ion: 83 Resp: 740

Ion	Ratio	Lower	Upper
83	100		
85	73.3	33.3	93.3
47	49.6	0.0	53.0

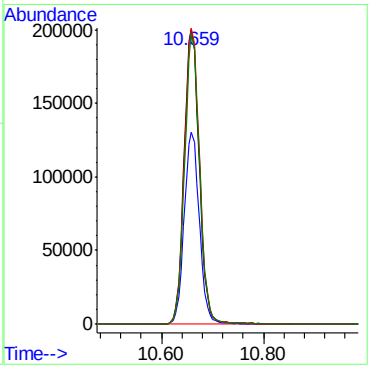


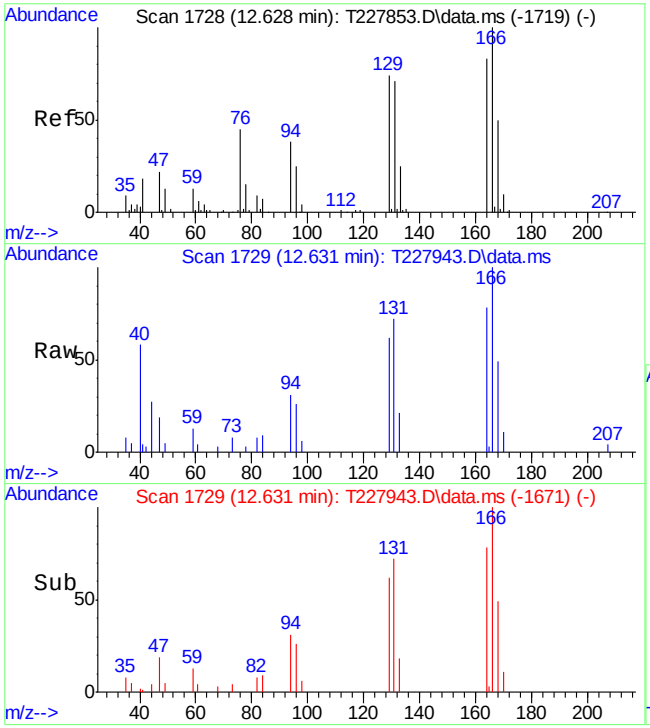


#56
TRICHLOROETHYLENE
Concen: 178.57 PPb
RT: 10.659 min Scan# 1352
Delta R.T. 0.002 min
Lab File: T227943.D
Acq: 13 Nov 2017 6:43 pm

Tgt Ion: 95 Resp: 414590

Ion	Ratio	Lower	Upper
95	100		
97	65.1	36.9	96.9
130	100.4	68.7	128.7
132	98.6	67.6	127.6

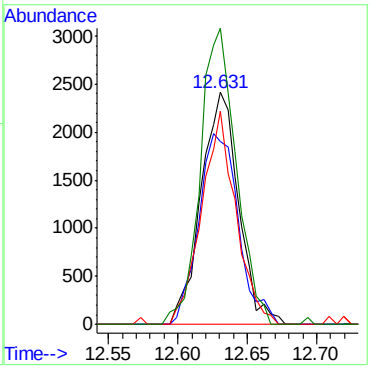




#72
TETRACHLOROETHYLENE
Concen: 2.18 PPb
RT: 12.631 min Scan# 1729
Delta R.T. 0.002 min
Lab File: T227943.D
Acq: 13 Nov 2017 6:43 pm

Tgt Ion:164 Resp: 4556

Ion	Ratio	Lower	Upper
164	100		
129	76.1	58.7	118.7
131	88.8	55.0	115.0
166	123.4	90.5	150.5



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227931.D
Acq On : 13 Nov 2017 12:42 pm
Operator : CHELSEAS
Sample : jc55198-5
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 14 13:37:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

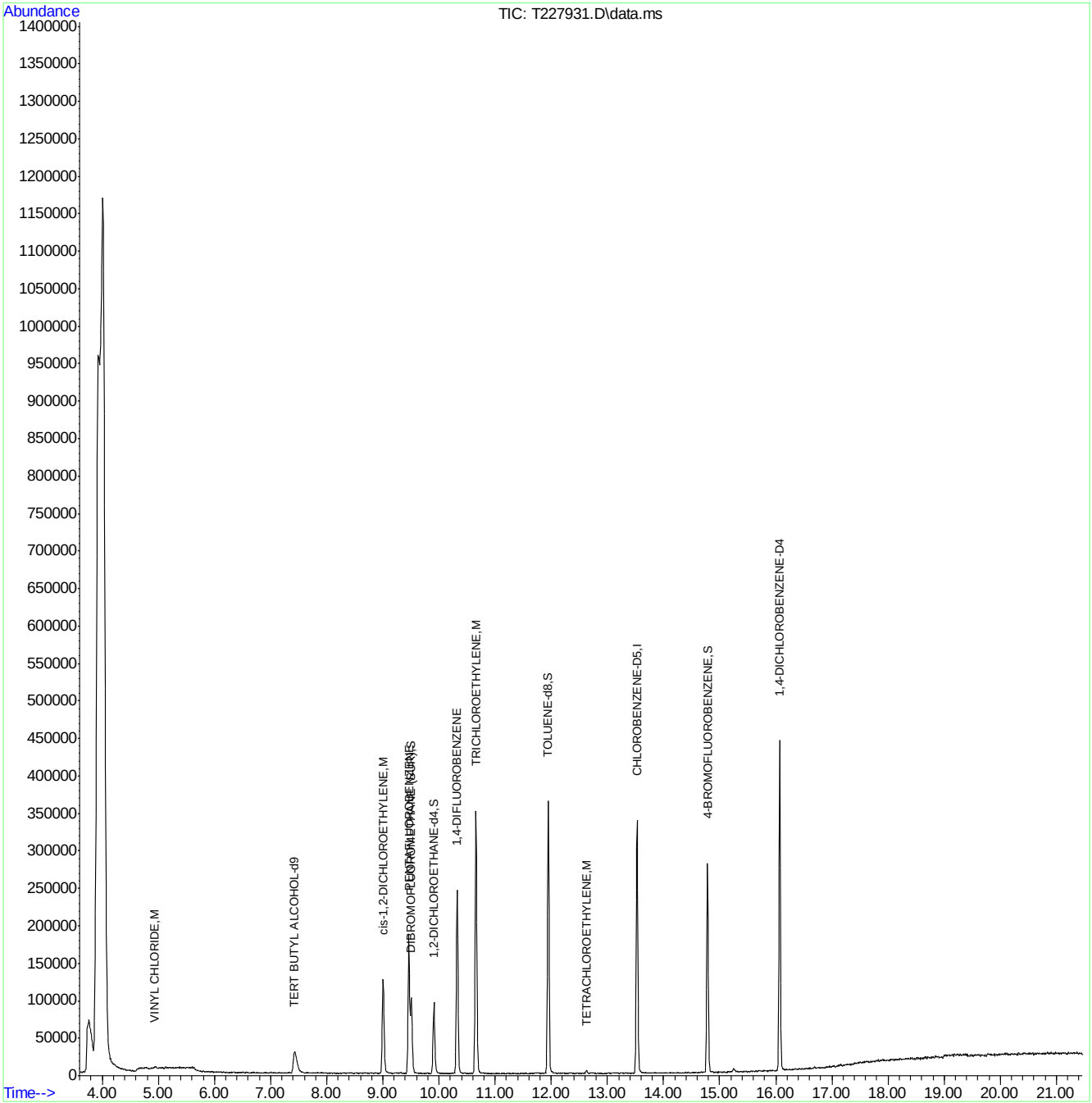
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.424	65	74948	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.464	168	149378	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.321	114	226611	30.00	PPB		0.00
66) CHLOROBENZENE-D5	13.527	117	215859	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.069	152	132915	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.511	113	67711	32.89	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.63%				
50) 1,2-DICHLOROETHANE-d4	9.908	65	66995	30.87	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 102.90%				
67) TOLUENE-d8	11.948	98	277014	30.10	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.33%				
90) 4-BROMOFLUOROBENZENE	14.783	174	94657	29.78	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.27%				
Target Compounds							Qvalue
10) VINYL CHLORIDE	4.929	62	2976	0.55	PPb		80
36) cis-1,2-DICHLOROETHYLENE	9.003	96	64737	25.44	PPB		91
56) TRICHLOROETHYLENE	10.656	95	132862	56.30	PPB		98
72) TETRACHLOROETHYLENE	12.628	164	1008	0.48	PPb	#	65

(#) = qualifier out of range (m) = manual integration (+) = signals summed

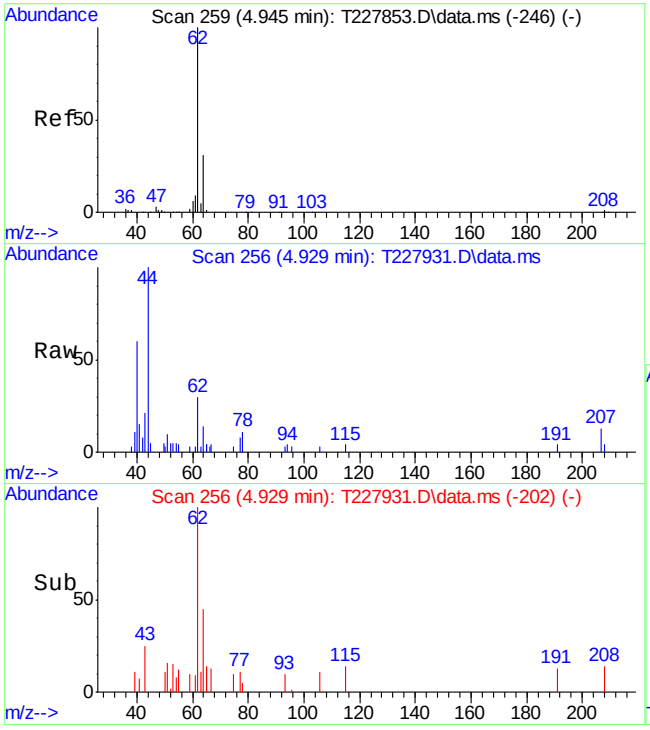
Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227931.D
Acq On : 13 Nov 2017 12:42 pm
Operator : CHELSEAS
Sample : jc55198-5
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 14 13:37:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



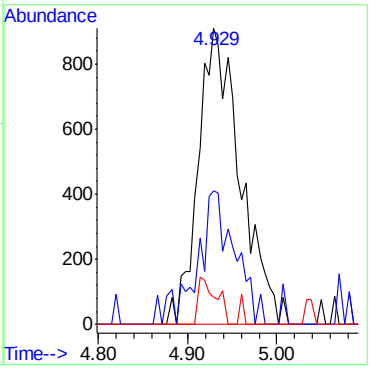
SGS ACCUTEST JC55198

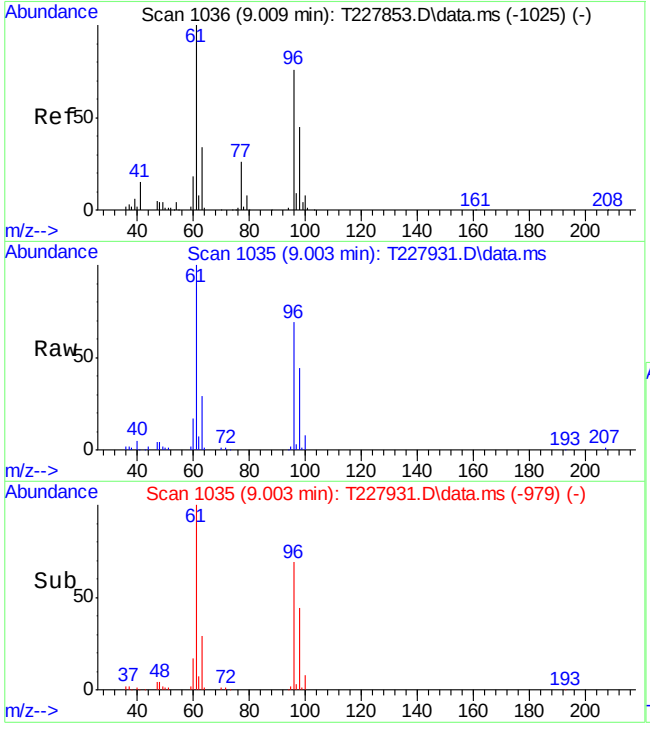


#10
VINYL CHLORIDE
Concen: 0.55 PPb
RT: 4.929 min Scan# 256
Delta R.T. -0.016 min
Lab File: T227931.D
Acq: 13 Nov 2017 12:42 pm

Tgt Ion: 62 Resp: 2976

Ion	Ratio	Lower	Upper
62	100		
64	44.9	1.0	61.0
61	9.2	0.0	38.6

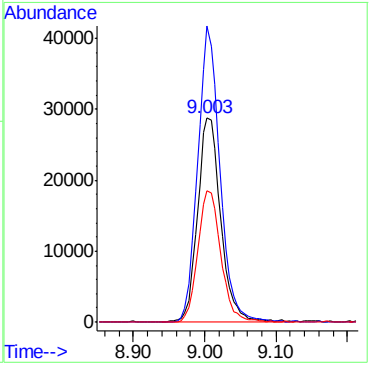


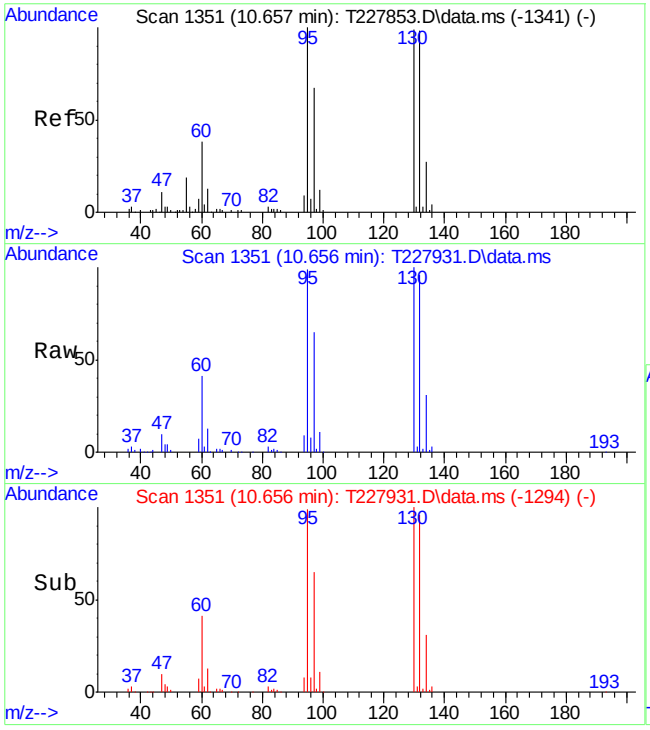


#36
cis-1,2-DICHLOROETHYLENE
Concen: 25.44 PPb
RT: 9.003 min Scan# 1035
Delta R.T. -0.006 min
Lab File: T227931.D
Acq: 13 Nov 2017 12:42 pm

Tgt Ion: 96 Resp: 64737

Ion	Ratio	Lower	Upper
96	100		
61	145.2	102.4	162.4
98	64.2	30.2	90.2

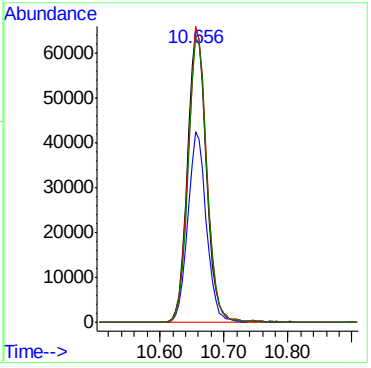


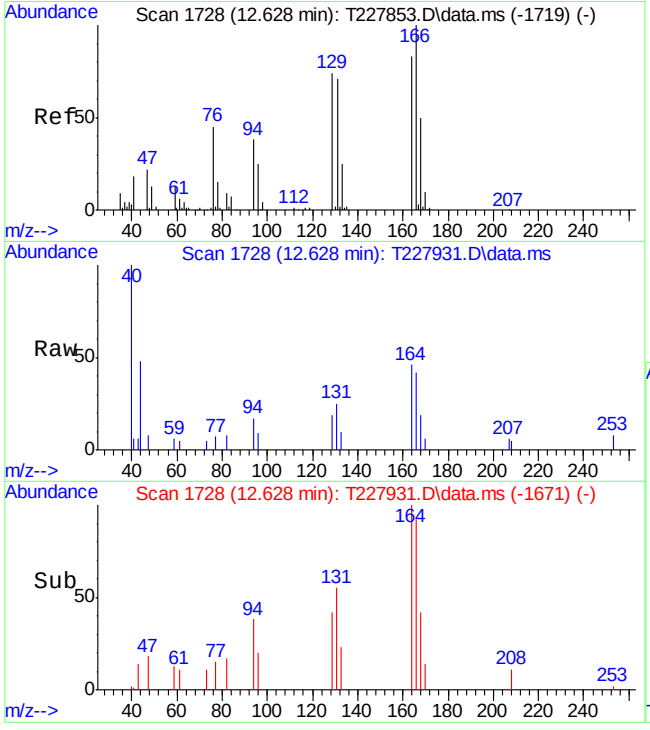


#56
TRICHLOROETHYLENE
Concen: 56.30 PPb
RT: 10.656 min Scan# 1351
Delta R.T. -0.001 min
Lab File: T227931.D
Acq: 13 Nov 2017 12:42 pm

Tgt Ion: 95 Resp: 132862

Ion	Ratio	Lower	Upper
95	100		
97	65.0	36.9	96.9
130	100.8	68.7	128.7
132	96.9	67.6	127.6

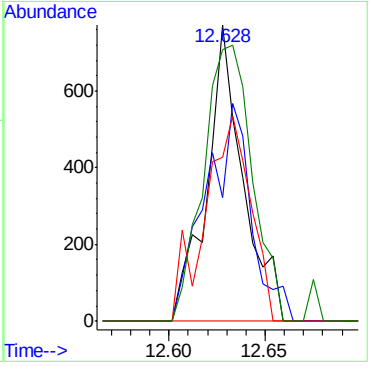




#72
TETRACHLOROETHYLENE
Concen: 0.48 PPb
RT: 12.628 min Scan# 1728
Delta R.T. -0.001 min
Lab File: T227931.D
Acq: 13 Nov 2017 12:42 pm

Tgt Ion:164 Resp: 1008

Ion	Ratio	Lower	Upper
164	100		
129	41.8	58.7	118.7#
131	55.4	55.0	115.0
166	91.8	90.5	150.5



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227939.D
Acq On : 13 Nov 2017 4:42 pm
Operator : CHELSEAS
Sample : jc55198-6
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 15 09:13:26 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

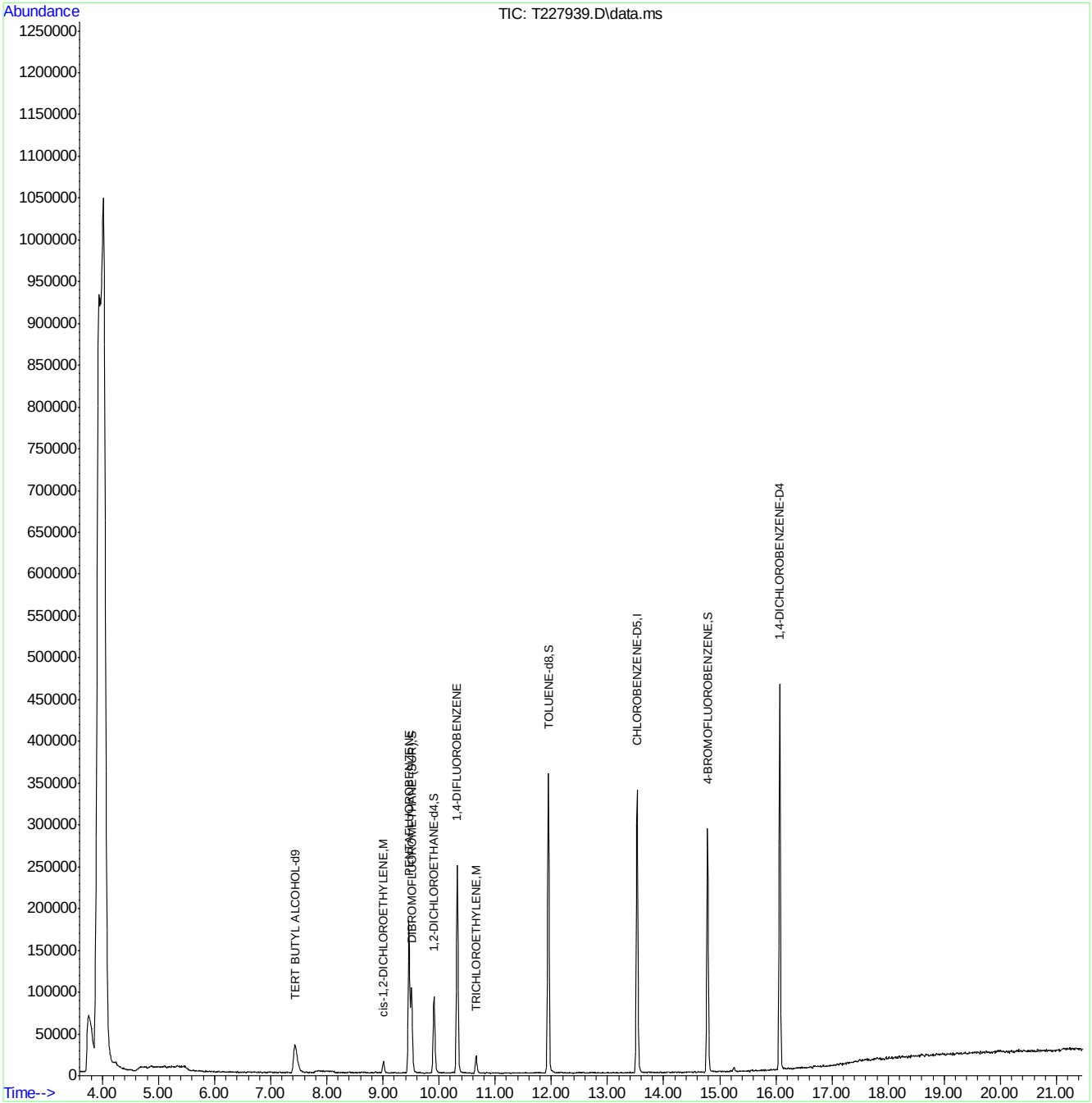
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.433	65	91218	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.467	168	151683	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.320	114	228777	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.526	117	219811	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.073	152	141372	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.504	113	68031	32.54	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.47%			
50) 1,2-DICHLOROETHANE-d4	9.912	65	68626	31.32	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 104.40%			
67) TOLUENE-d8	11.947	98	275957	29.44	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.13%			
90) 4-BROMOFLUOROBENZENE	14.786	174	99037	29.29	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.63%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.007	96	7050	2.73	PPb	92
56) TRICHLOROETHYLENE	10.655	95	7620	3.20	PPb	89

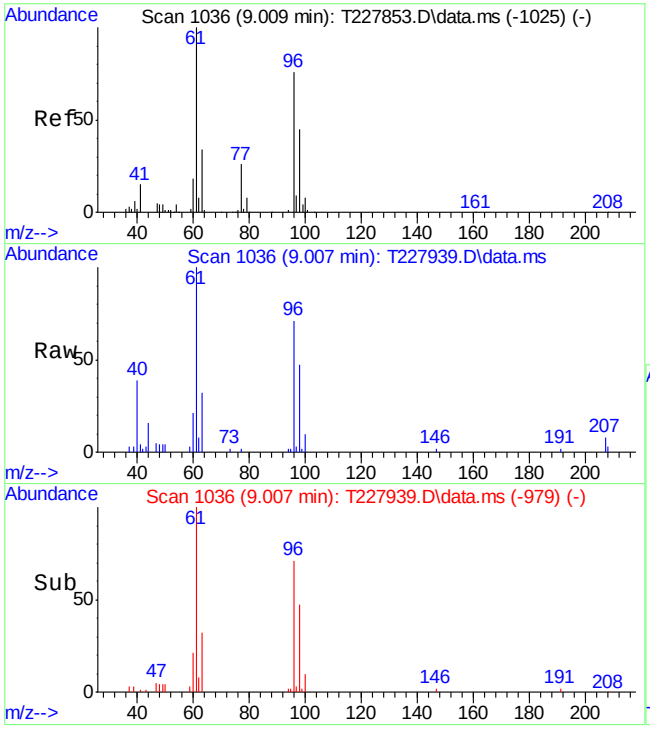
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227939.D
Acq On : 13 Nov 2017 4:42 pm
Operator : CHELSEAS
Sample : jc55198-6
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 15 09:13:26 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

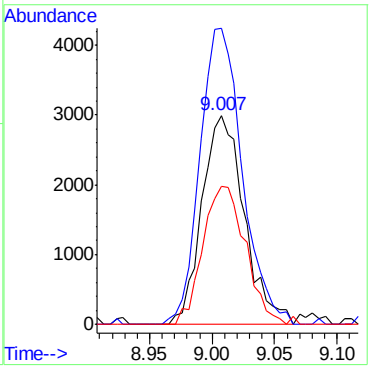


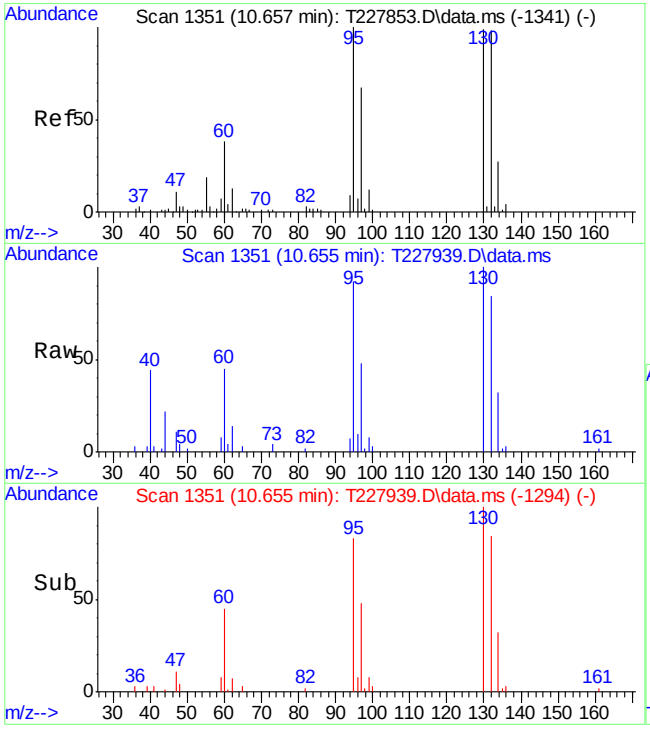


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.73 PPb
RT: 9.007 min Scan# 1036
Delta R.T. -0.002 min
Lab File: T227939.D
Acq: 13 Nov 2017 4:42 pm

Tgt Ion: 96 Resp: 7050

Ion	Ratio	Lower	Upper
96	100		
61	141.7	102.4	162.4
98	66.2	30.2	90.2

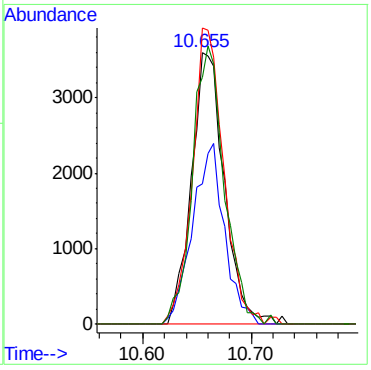




#56
TRICHLOROETHYLENE
Concen: 3.20 PPb
RT: 10.655 min Scan# 1351
Delta R.T. -0.002 min
Lab File: T227939.D
Acq: 13 Nov 2017 4:42 pm

Tgt Ion: 95 Resp: 7620

Ion	Ratio	Lower	Upper
95	100		
97	51.8	36.9	96.9
130	108.9	68.7	128.7
132	91.0	67.6	127.6



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227940.D
Acq On : 13 Nov 2017 5:12 pm
Operator : CHELSEAS
Sample : jc55198-7
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 14 13:42:06 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

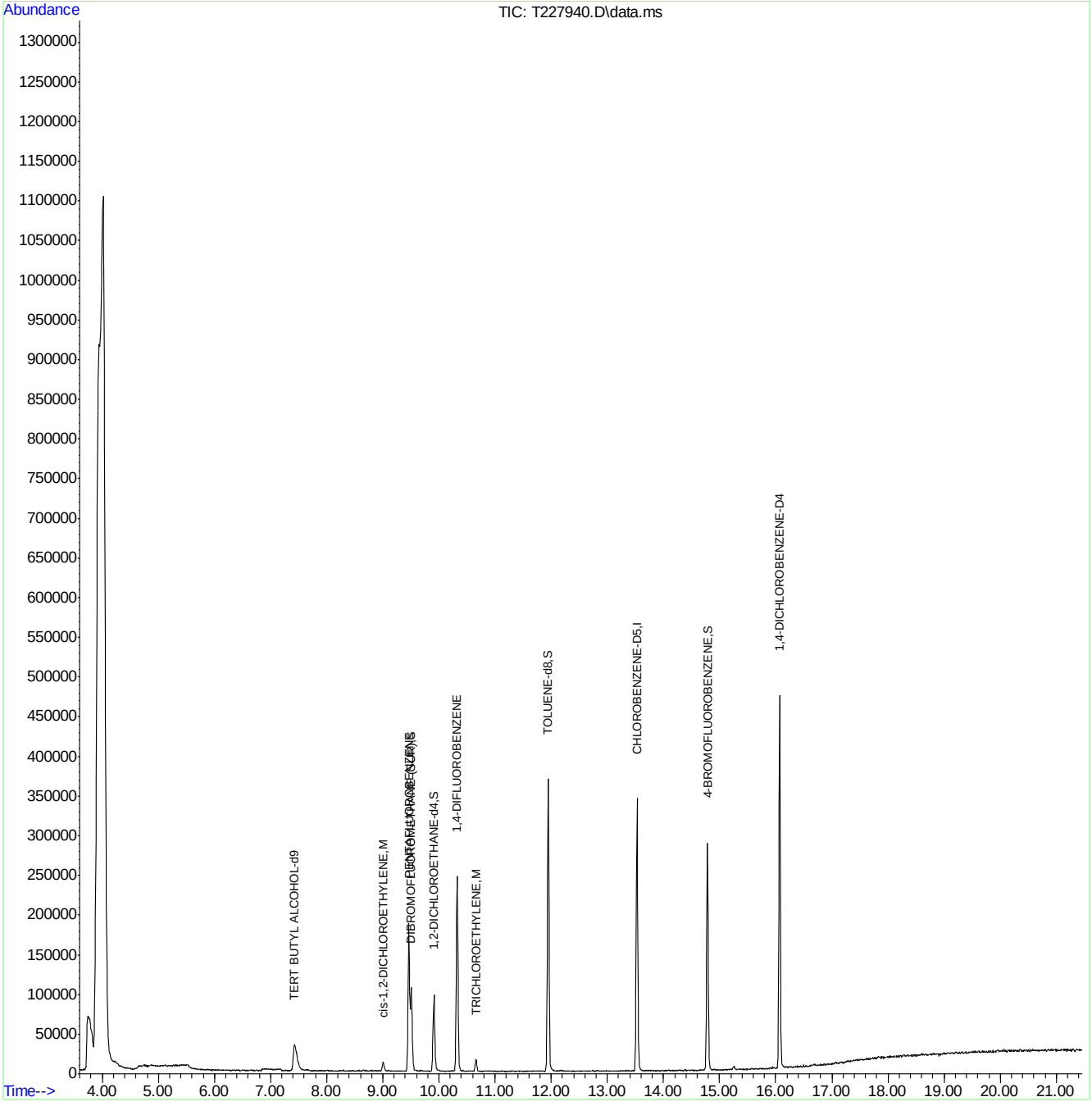
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.425	65	89498	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.464	168	151961	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.322	114	225655	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.528	117	220724	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.070	152	142270	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.506	113	67930	32.43	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.10%			
50) 1,2-DICHLOROETHANE-d4	9.909	65	68852	31.86	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 106.20%			
67) TOLUENE-d8	11.943	98	277900	29.53	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.43%			
90) 4-BROMOFLUOROBENZENE	14.783	174	97235	28.58	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.27%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.004	96	6056	2.34	PPb	98
56) TRICHLOROETHYLENE	10.657	95	5713	2.43	PPb	89

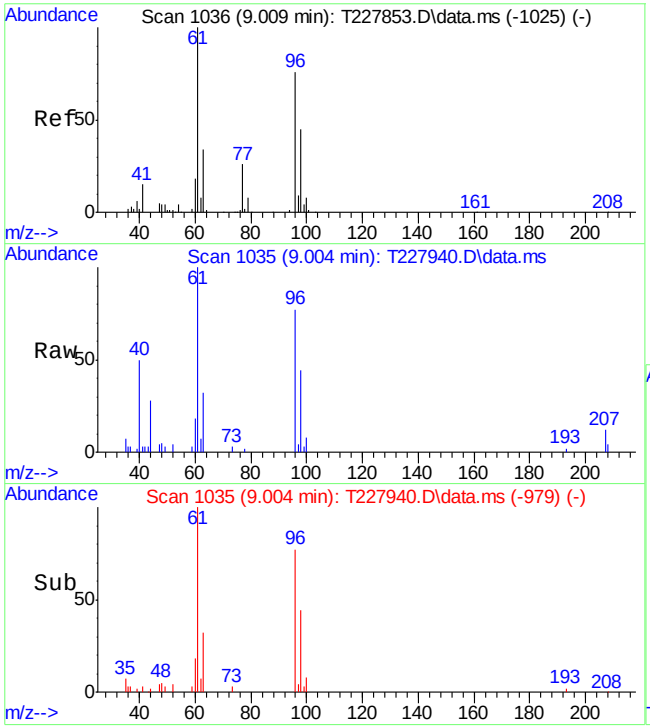
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227940.D
Acq On : 13 Nov 2017 5:12 pm
Operator : CHELSEAS
Sample : jc55198-7
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 14 13:42:06 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

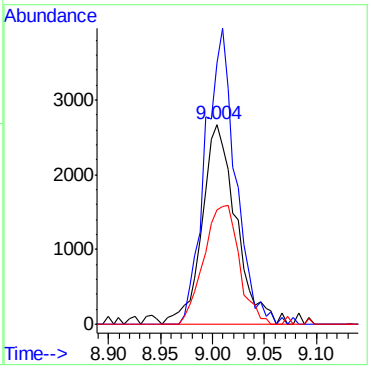


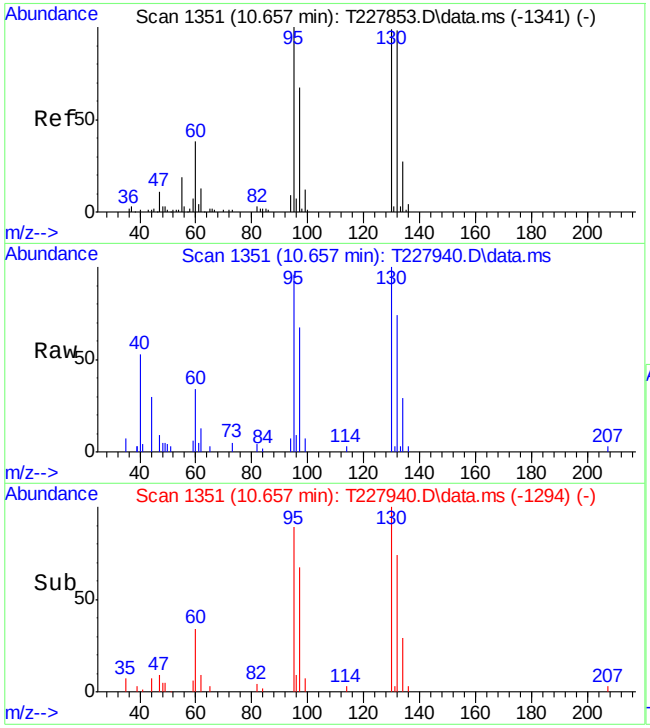


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.34 PPb
RT: 9.004 min Scan# 1035
Delta R.T. -0.005 min
Lab File: T227940.D
Acq: 13 Nov 2017 5:12 pm

Tgt Ion: 96 Resp: 6056

Ion	Ratio	Lower	Upper
96	100		
61	130.7	102.4	162.4
98	57.1	30.2	90.2

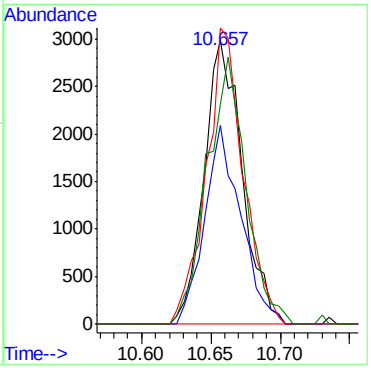




#56
TRICHLOROETHYLENE
Concen: 2.43 PPb
RT: 10.657 min Scan# 1351
Delta R.T. 0.000 min
Lab File: T227940.D
Acq: 13 Nov 2017 5:12 pm

Tgt Ion: 95 Resp: 5713

Ion	Ratio	Lower	Upper
95	100		
97	69.8	36.9	96.9
130	104.1	68.7	128.7
132	77.3	67.6	127.6



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227941.D
Acq On : 13 Nov 2017 5:42 pm
Operator : CHELSEAS
Sample : jc55198-8
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 14 13:42:41 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

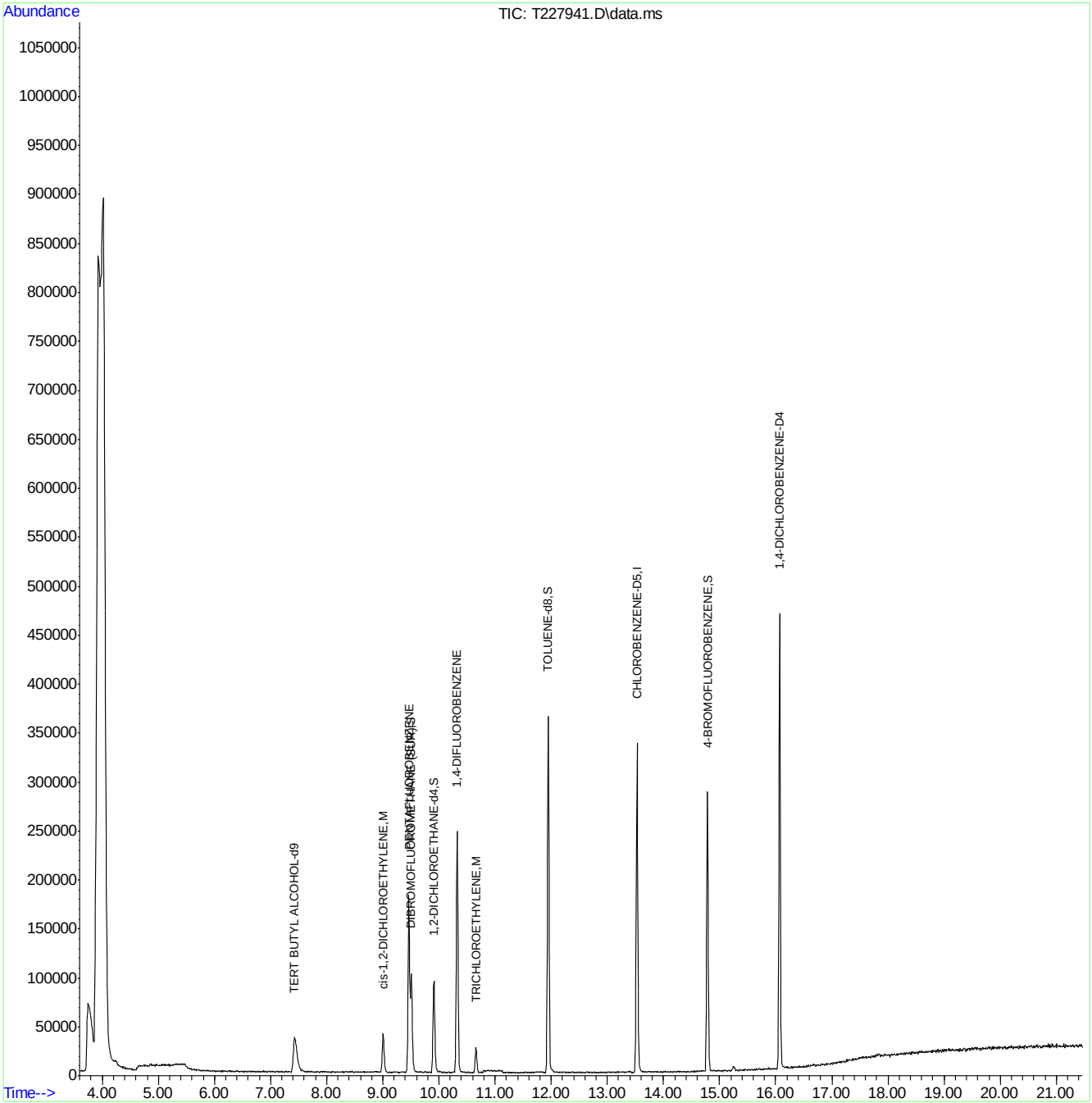
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.425	65	92570	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.464	168	152474	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.322	114	225805	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.528	117	215884	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.070	152	137110	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.506	113	67222	31.98	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 106.60%			
50) 1,2-DICHLOROETHANE-d4	9.909	65	68571	31.71	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 105.70%			
67) TOLUENE-d8	11.943	98	277278	30.12	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.40%			
90) 4-BROMOFLUOROBENZENE	14.783	174	96010	29.28	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.60%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.004	96	20271	7.80	PPb	90
56) TRICHLOROETHYLENE	10.657	95	9908	4.21	PPb	93

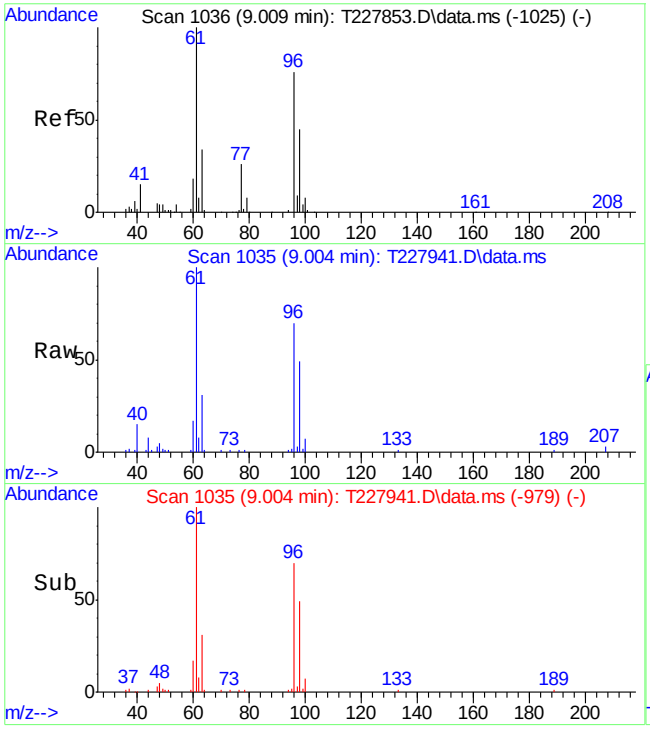
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227941.D
Acq On : 13 Nov 2017 5:42 pm
Operator : CHELSEAS
Sample : jc55198-8
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 14 13:42:41 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

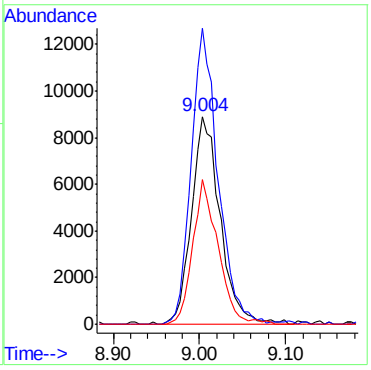


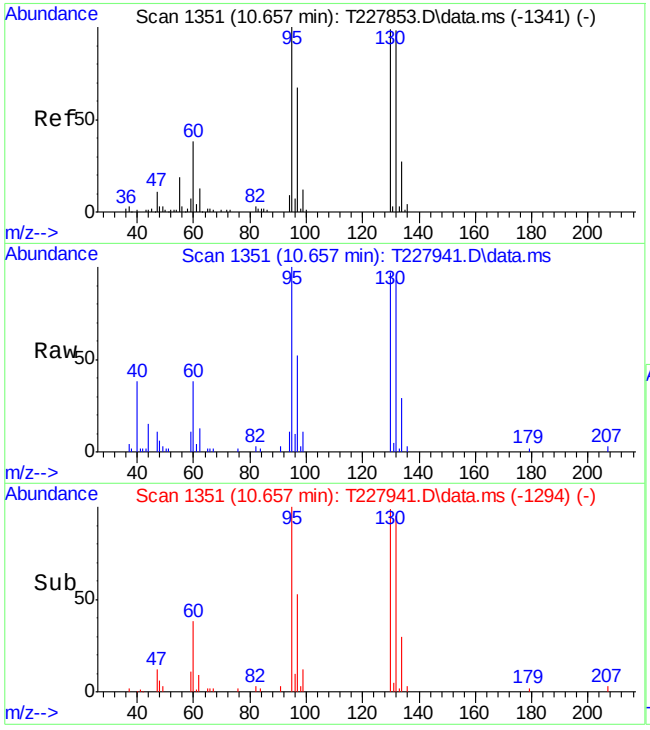


#36
cis-1,2-DICHLOROETHYLENE
Concen: 7.80 PPb
RT: 9.004 min Scan# 1035
Delta R.T. -0.005 min
Lab File: T227941.D
Acq: 13 Nov 2017 5:42 pm

Tgt Ion: 96 Resp: 20271

Ion	Ratio	Lower	Upper
96	100		
61	142.5	102.4	162.4
98	69.9	30.2	90.2

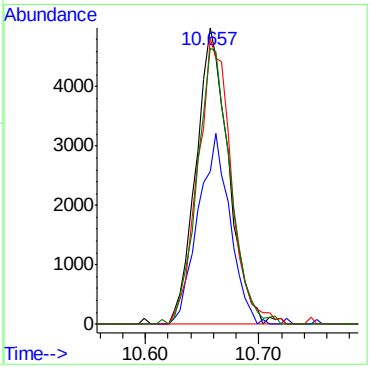




#56
TRICHLOROETHYLENE
Concen: 4.21 PPb
RT: 10.657 min Scan# 1351
Delta R.T. 0.000 min
Lab File: T227941.D
Acq: 13 Nov 2017 5:42 pm

Tgt Ion: 95 Resp: 9908

Ion	Ratio	Lower	Upper
95	100		
97	51.7	36.9	96.9
130	96.8	68.7	128.7
132	93.1	67.6	127.6



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227942.D
Acq On : 13 Nov 2017 6:13 pm
Operator : CHELSEAS
Sample : jc55198-9
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 14 13:43:12 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

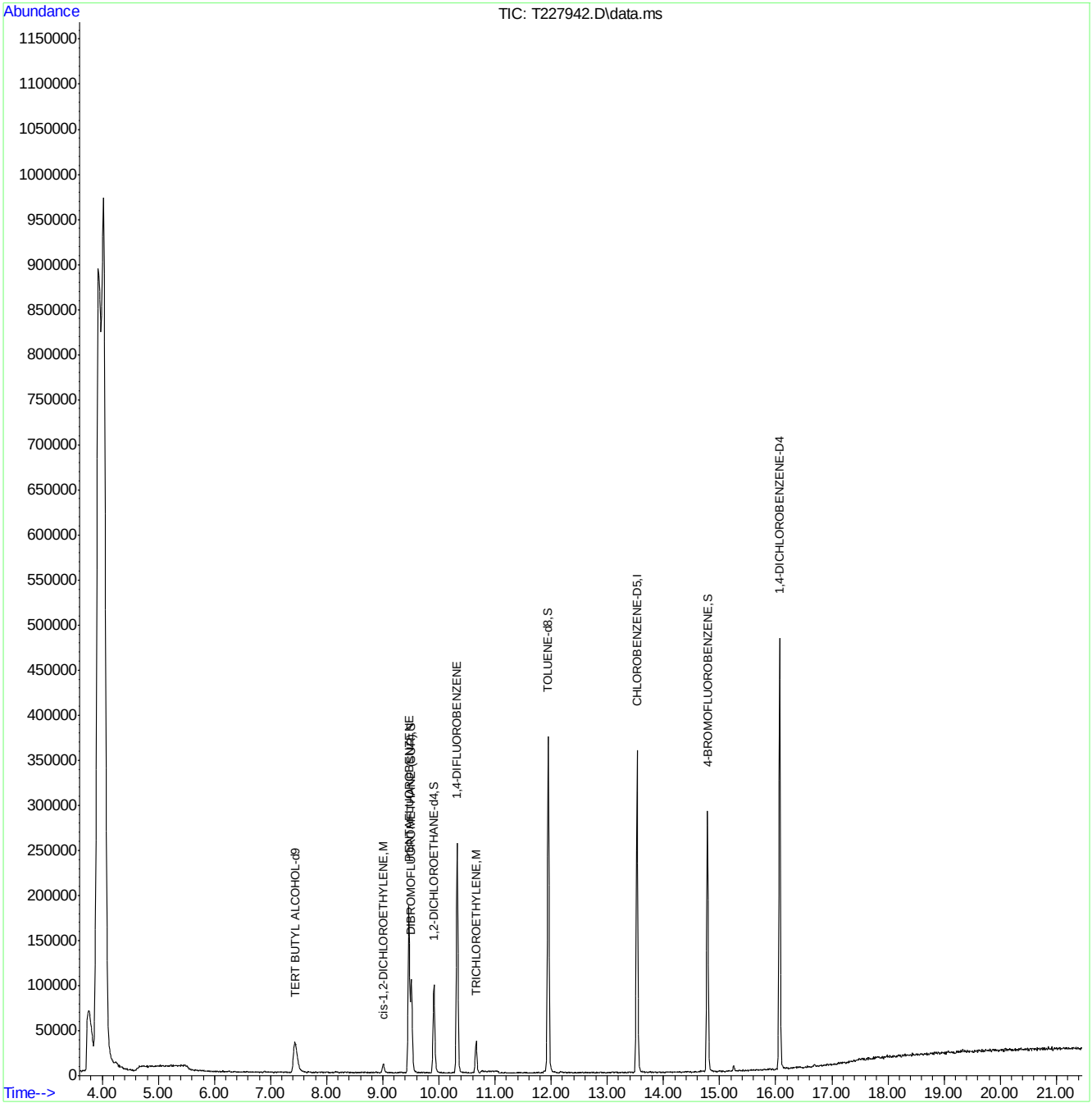
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.435	65	92131	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.464	168	155056	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.322	114	229160	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.528	117	221443	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.070	152	143195	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.511	113	69430	32.49	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.30%			
50) 1,2-DICHLOROETHANE-d4	9.909	65	69758	31.79	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 105.97%			
67) TOLUENE-d8	11.943	98	284228	30.10	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.33%			
90) 4-BROMOFLUOROBENZENE	14.783	174	98798	28.85	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.17%			
Target Compounds						Qvalue
36) cis-1,2-DICHLOROETHYLENE	9.014	96	5340	2.02	PPb	90
56) TRICHLOROETHYLENE	10.662	95	13588	5.69	PPb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

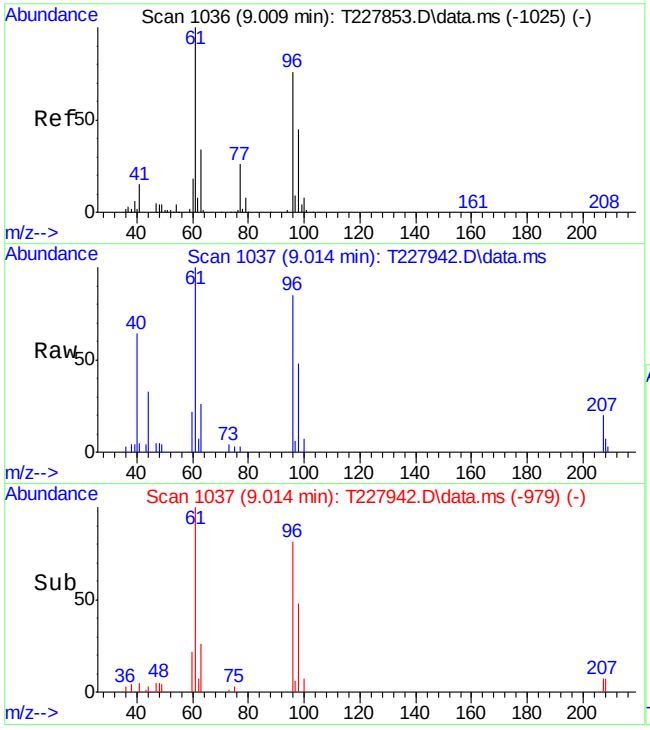
Data Path : C:\MSDChem\1\DATA\
Data File : T227942.D
Acq On : 13 Nov 2017 6:13 pm
Operator : CHELSEAS
Sample : jc55198-9
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 14 13:43:12 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



MT9358.M Tue Nov 14 13:46:06 2017 MSDT Page: 2

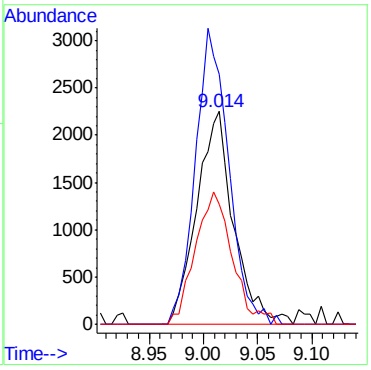
SGS ACCUTEST JC55198

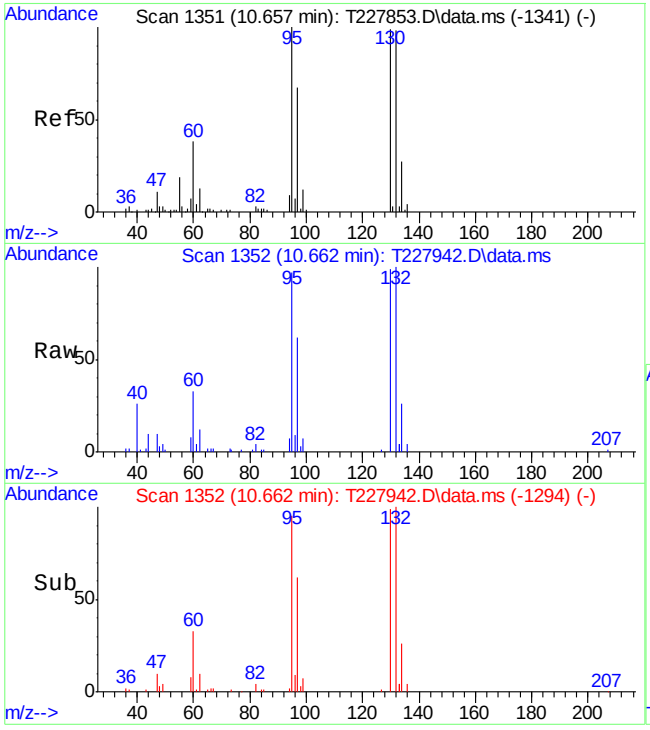


#36
cis-1,2-DICHLOROETHYLENE
Concen: 2.02 PPb
RT: 9.014 min Scan# 1037
Delta R.T. 0.005 min
Lab File: T227942.D
Acq: 13 Nov 2017 6:13 pm

Tgt Ion: 96 Resp: 5340

Ion	Ratio	Lower	Upper
96	100		
61	117.3	102.4	162.4
98	56.2	30.2	90.2

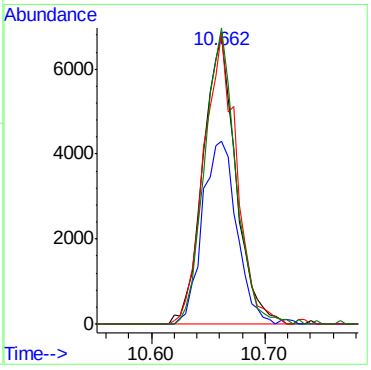




#56
TRICHLOROETHYLENE
Concen: 5.69 PPb
RT: 10.662 min Scan# 1352
Delta R.T. 0.005 min
Lab File: T227942.D
Acq: 13 Nov 2017 6:13 pm

Tgt Ion: 95 Resp: 13588

Ion	Ratio	Lower	Upper
95	100		
97	63.4	36.9	96.9
130	101.3	68.7	128.7
132	102.8	67.6	127.6



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227938.D
Acq On : 13 Nov 2017 4:12 pm
Operator : CHELSEAS
Sample : jc55198-10
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 14 13:40:59 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.428	65	89224	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.463	168	148934	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.320	114	223768	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.526	117	217269	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.068	152	140148	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.510	113	67909	33.08	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.27%			
50) 1,2-DICHLOROETHANE-d4	9.907	65	68068	31.76	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 105.87%			
67) TOLUENE-d8	11.947	98	278681	30.08	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.27%			
90) 4-BROMOFLUOROBENZENE	14.782	174	95930	28.62	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.40%			
Target Compounds						Qvalue

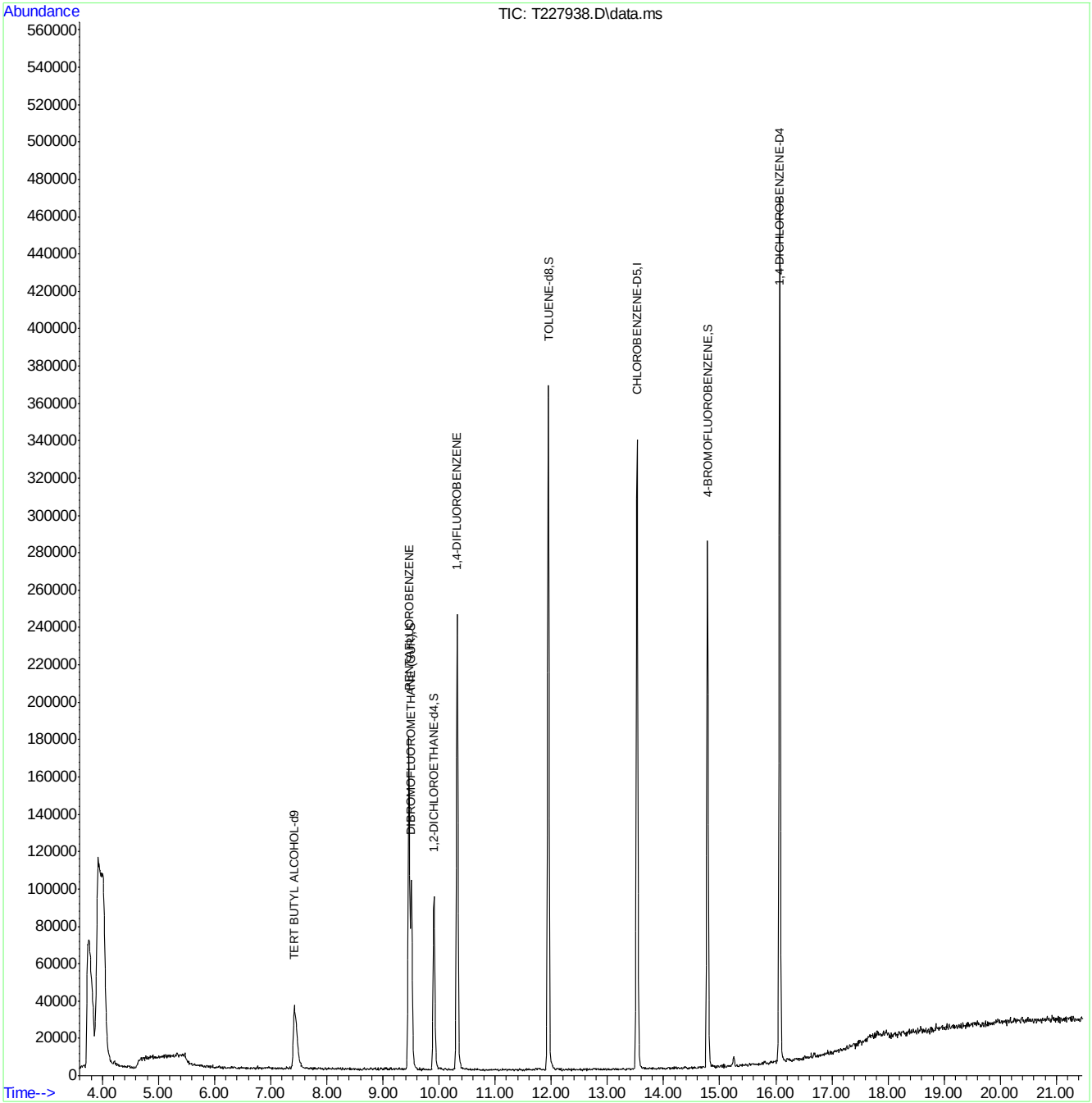
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC55198

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227938.D
Acq On : 13 Nov 2017 4:12 pm
Operator : CHELSEAS
Sample : jc55198-10
Misc : MS22132,VT9362,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 14 13:40:59 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



SGS ACCUTEST JC55198

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227927.D
Acq On : 13 Nov 2017 8:32 am
Operator : CHELSEAS
Sample : mb
Misc : MS21954,VT9362,W,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 14 13:35:19 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.427	65	89786	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.466	168	150682	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.324	114	220723	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.525	117	217061	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.072	152	134676	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.514	113	66499	32.02	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 106.73%			
50) 1,2-DICHLOROETHANE-d4	9.911	65	66052	31.25	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 104.17%			
67) TOLUENE-d8	11.946	98	276765	29.90	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.67%			
90) 4-BROMOFLUOROBENZENE	14.785	174	95081	29.52	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.40%			
Target Compounds						Qvalue
3) 1,4-DIOXANE	11.004	88	930	33.18	PPb	76

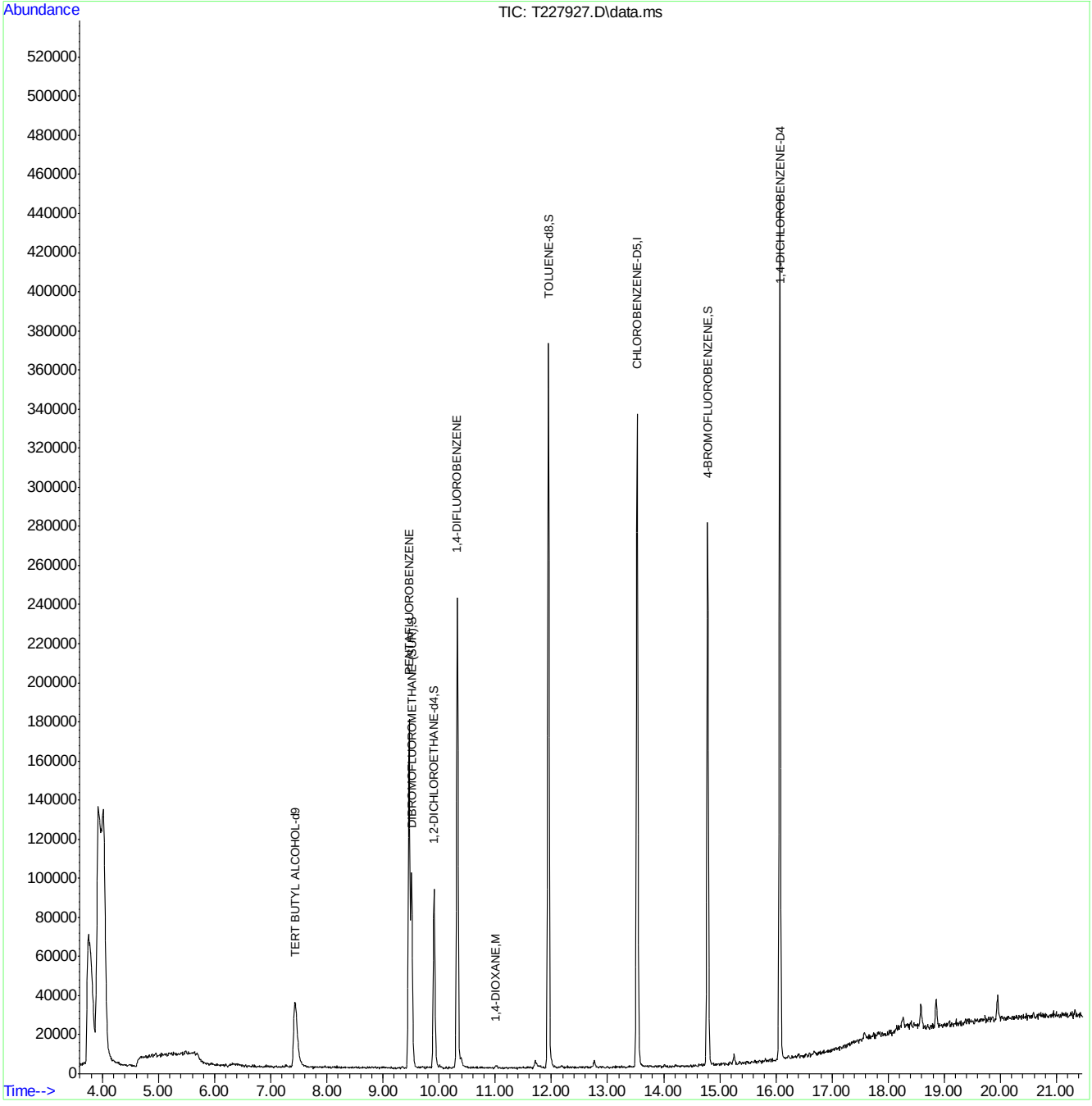
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC55198

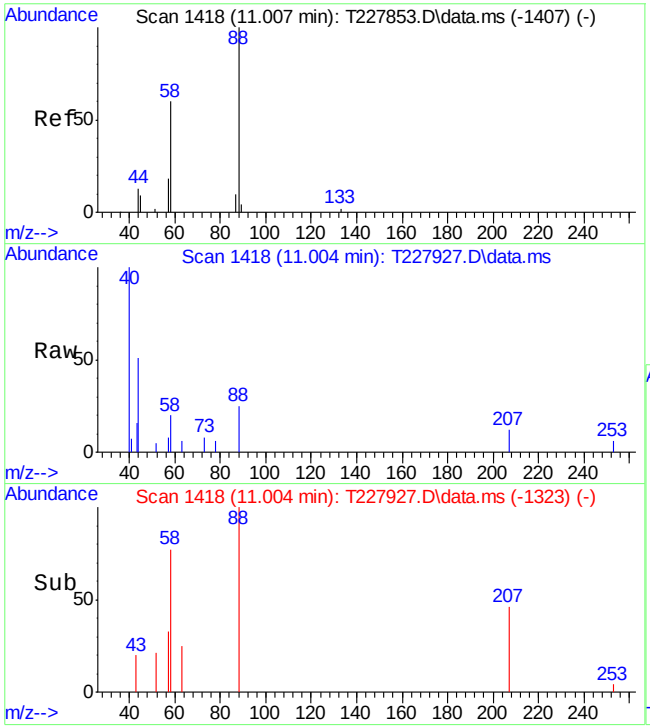
Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227927.D
Acq On : 13 Nov 2017 8:32 am
Operator : CHELSEAS
Sample : mb
Misc : MS21954,VT9362,W,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 14 13:35:19 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



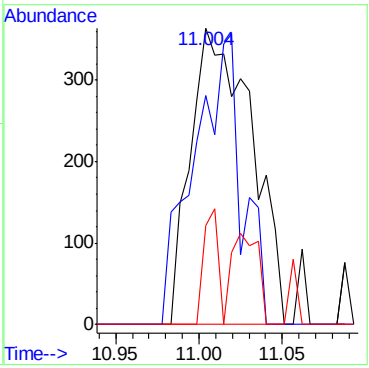
SGS ACCUTEST JC55198



#3
1,4-DIOXANE
Concen: 33.18 PPb
RT: 11.004 min Scan# 1418
Delta R.T. -0.003 min
Lab File: T227927.D
Acq: 13 Nov 2017 8:32 am

Tgt Ion: 88 Resp: 930

Ion	Ratio	Lower	Upper
88	100		
58	77.2	29.9	89.9
57	33.2	0.0	51.2



7.2.1

7

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
Analyst: JPM Run ID: MA43230
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:42	MA43230-STD1	1		B= 2.4938E-004, C= 4.2799E-002, R= 0.9997871
11:43	MA43230-STD2	1		STDB
11:45	MA43230-STD3	1		STDC
11:46	MA43230-STD4	1		STDD
11:47	MA43230-STD5	1		STDE
11:49	MA43230-STD6	1		STDF
11:55	MA43230-ICV1	1		
11:57	MA43230-ICB1	1		
11:59	MA43230-CCV1	1		
12:00	MA43230-CCB1	1		
12:02	MA43230-CRI1	1		
12:04	MP4239-MB1	1		
12:05	MP4239-B1	1		
12:07	MP4239-S1	1		
12:08	MP4239-S2	1		
12:10	JC55198-7A	1		
12:12	JC55198-8A	1		
12:13	JC55198-9A	1		
---------->	Last reportable sample/prep for job JC55198			
12:14	ZZZZZZ	1		
12:16	MA43230-CCV2	1		
12:17	MA43230-CCB2	1		
12:19	ZZZZZZ	1		
12:20	ZZZZZZ	1		
12:21	ZZZZZZ	1		
12:22	ZZZZZZ	1		
12:24	ZZZZZZ	1		
12:25	ZZZZZZ	1		
12:26	ZZZZZZ	1		
12:28	ZZZZZZ	1		
12:29	ZZZZZZ	1		
12:30	MA43230-CCV3	1		
12:32	MA43230-CCB3	1		
12:33	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
Analyst: JPM Run ID: MA43230
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:35	ZZZZZZ	1		
12:36	ZZZZZZ	1		
12:37	ZZZZZZ	1		
12:39	ZZZZZZ	1		
12:40	ZZZZZZ	1		
12:41	ZZZZZZ	1		
12:43	ZZZZZZ	1		
12:44	MA43230-CCV4	1		
12:45	MA43230-CCB4	1		
12:47	MP4241-B1	1		
12:48	MP4241-S1	1		
12:50	MP4241-S2	1		
12:52	JC54752-1	1		(sample used for QC only; not part of login JC55198)
12:53	ZZZZZZ	1		
12:55	ZZZZZZ	1		
12:56	ZZZZZZ	1		
12:57	ZZZZZZ	1		
12:59	ZZZZZZ	1		
13:00	MA43230-CCV5	1		
13:01	MA43230-CCB5	1		
13:03	ZZZZZZ	1		
13:04	ZZZZZZ	1		
13:06	ZZZZZZ	1		
13:07	ZZZZZZ	1		
13:08	ZZZZZZ	1		
13:09	ZZZZZZ	1		
13:12	ZZZZZZ	1		
13:14	ZZZZZZ	1		
13:16	ZZZZZZ	1		
13:17	MA43230-CCV6	1		
13:18	MA43230-CCB6	1		
13:20	ZZZZZZ	1		
13:21	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
Analyst: JPM Run ID: MA43230
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:23	ZZZZZZ	1		
13:27	MP4241-MB1	1		
13:29	ZZZZZZ	1		
13:44	MP4242-MB1	1		
13:46	MP4242-B1	1		
13:47	MP4242-S1	1		
13:49	MP4242-S2	1		
13:50	MA43230-CCV7	1		
13:52	MA43230-CCB7	1		
13:54	JC53967-2TA	1		(sample used for QC only; not part of login JC55198)
13:55	ZZZZZZ	1		
13:56	ZZZZZZ	1		
13:58	ZZZZZZ	1		
13:59	ZZZZZZ	1		
14:00	ZZZZZZ	1		
14:02	ZZZZZZ	1		
14:03	ZZZZZZ	1		
14:04	ZZZZZZ	1		
14:06	MA43230-CCV8	1		
14:07	MA43230-CCB8	1		
14:09	ZZZZZZ	1		
14:10	ZZZZZZ	1		
14:11	ZZZZZZ	1		
14:12	ZZZZZZ	1		
14:14	ZZZZZZ	1		
14:15	ZZZZZZ	1		
14:16	ZZZZZZ	1		
14:18	ZZZZZZ	1		
14:19	ZZZZZZ	1		
14:21	MA43230-CCV9	1		
14:22	MA43230-CCB9	1		
14:24	MP4243-MB1	1		
14:25	MP4243-B1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
Analyst: JPM Run ID: MA43230
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:26	MP4243-S1	1		Red
14:28	MP4243-S2	1		Red
14:30	JC55215-4	1		(sample used for QC only; not part of login JC55198)
14:32	ZZZZZZ	1		
14:33	MP4244-B1	1		
14:34	MP4244-S1	1		
14:36	MP4244-S2	1		
14:38	MA43230-CCV10	1		
14:39	MA43230-CCB10	1		
14:41	JC55033-1A	1		(sample used for QC only; not part of login JC55198)
14:42	MP4245-MB1	1		
14:44	MP4245-B1	1		
14:45	MP4245-S1	1		
14:47	MP4245-S2	1		
14:48	JC55127-1	1		(sample used for QC only; not part of login JC55198)
14:50	ZZZZZZ	1		
14:51	ZZZZZZ	1		
14:53	ZZZZZZ	1		
14:54	MA43230-CCV11	1		
14:55	MA43230-CCB11	1		
14:57	ZZZZZZ	1		
14:58	ZZZZZZ	1		
15:00	ZZZZZZ	1		
15:01	ZZZZZZ	1		
15:02	ZZZZZZ	20		
15:04	ZZZZZZ	10		
15:05	ZZZZZZ	1		
15:07	ZZZZZZ	1		
15:08	ZZZZZZ	1		
15:10	MA43230-CCV12	1		
15:11	MA43230-CCB12	1		
15:13	ZZZZZZ	1		
15:14	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
Analyst: JPM Run ID: MA43230
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:16	ZZZZZZ	1		
15:17	ZZZZZZ	1		
15:19	ZZZZZZ	1		
15:20	ZZZZZZ	1		
15:22	ZZZZZZ	1		
15:23	MP4244-MB1	1		
15:25	MA43230-CRI2	1		
15:26	MA43230-CCV13	1		
15:28	MA43230-CCB13	1		

----------> Last reportable CCB for job JC55198
Refer to raw data for calibration curve and standards.

8.1
8

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: result < RL Run ID: MA43230 Units: ug/l

Time:			11:57		12:00		12:17		12:32	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.075	-0.041	<0.20	-0.039	<0.20	-0.020	<0.20	-0.028	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: result < RL Run ID: MA43230 Units: ug/l

Time:			12:45		13:01		13:18		13:52	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.075	-0.028	<0.20	-0.029	<0.20	-0.031	<0.20	-0.016	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

8.1.1
8

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: result < RL Run ID: MA43230 Units: ug/l

Time:			14:07		14:22		14:39		14:55	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.075	-0.025	<0.20	-0.026	<0.20	-0.035	<0.20	-0.040	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

8.1.1
8

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: result < RL Run ID: MA43230 Units: ug/l

Time:			15:11		15:28	
Sample ID:			CCB12		CCB13	
Metal	RL	IDL	raw	final	raw	final
Mercury	0.20	.075	-0.022	<0.20	-0.024	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

8.1.1
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: 90 to 110 % Recovery Run ID: MA43230 Units: ug/l

Time:		11:55			11:59			12:16	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	3	2.9	96.7	2.5	2.6	104.0	2.5	2.6	104.0

(*) Outside of QC limits
(anr) Analyte not requested

8.1.2
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: 90 to 110 % Recovery Run ID: MA43230 Units: ug/l

Time:		12:30			12:44			13:00	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	2.5	2.5	100.0	2.5	2.4	96.0	2.5	2.5	100.0

(*) Outside of QC limits
(anr) Analyte not requested

8.1.2
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: 90 to 110 % Recovery Run ID: MA43230 Units: ug/l

Time:		13:17			13:50			14:06	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	2.5	2.5	100.0	2.5	2.4	96.0	2.5	2.4	96.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: 90 to 110 % Recovery Run ID: MA43230 Units: ug/l

Time:		14:21			14:38			14:54	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	2.5	2.4	96.0	2.5	2.4	96.0	2.5	2.4	96.0

(*) Outside of QC limits
(anr) Analyte not requested

8.1.2
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: 90 to 110 % Recovery Run ID: MA43230 Units: ug/l

Time:		15:10			15:26	
Sample ID:	CCV	CCV12		CCV	CCV13	
Metal	True	Results	% Rec	True	Results	% Rec
Mercury	2.5	2.5	100.0	2.5	2.4	96.0

(*) Outside of QC limits
(anr) Analyte not requested

8.1.2
8

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: H7111417W1.CSV Date Analyzed: 11/14/17 Methods: SW846 7470A
QC Limits: 70 to 130 % Recovery Run ID: MA43230 Units: ug/l

Time:			12:02		15:25	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Mercury	0.20		0.21	105.0	0.19	95.0

(*) Outside of QC limits
(anr) Analyte not requested

8.1.3
8

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:22	MA43233-STD1	1		STDA
11:27	MA43233-STD2	1		STDB
11:31	ZZZZZZ	1		
11:35	ZZZZZZ	1		
11:40	MA43233-ICV1	1		
11:52	MA43233-ICB1	1		
11:56	MA43233-ICCV1	1		
12:04	MA43233-CCB1	1		
12:11	MA43233-CRI1	1		
12:16	MA43233-CRID1	1		
12:20	MA43233-ICSA1	1		
12:24	MA43233-ICSAB1	1		
12:29	MA43233-HSTD1	1		
12:33	MA43233-HSTD2	1		
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	1		
12:46	ZZZZZZ	1		
12:50	MA43233-CCV1	1		
12:54	MA43233-CCB2	1		
12:59	MP4075-MB1	1		
13:03	MP4075-B1	1		
13:07	MP4075-S1	1		
13:11	MP4075-S2	1		
13:15	ZZZZZZ	1		
13:20	ZZZZZZ	5		
13:24	ZZZZZZ	1		
13:28	ZZZZZZ	1		
13:32	ZZZZZZ	1		
13:36	MA43233-CCV2	1		
13:40	MA43233-CCB3	1		
13:45	ZZZZZZ	1		
13:49	ZZZZZZ	1		
13:53	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:57	ZZZZZZ	1		
14:01	ZZZZZZ	1		
14:06	ZZZZZZ	1		
14:10	ZZZZZZ	1		
14:14	ZZZZZZ	1		
14:18	ZZZZZZ	1		
14:22	MA43233-CCV3	1		
14:26	MA43233-CCB4	1		
14:31	MA43233-CRID2	1		
14:35	MP4103-MB2	1		
14:39	MP4103-B2	1		
14:43	MP4103-S1	1		
14:47	MP4103-S2	1		
14:52	JC54576-3	1		(sample used for QC only; not part of login JC55198)
14:56	MP4103-SD1	5		
15:00	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	MA43233-CCV4	1		
15:13	MA43233-CCB5	1		
15:17	ZZZZZZ	1		
15:21	ZZZZZZ	1		
15:26	ZZZZZZ	1		
15:30	ZZZZZZ	1		
15:34	ZZZZZZ	1		
15:39	ZZZZZZ	1		
15:43	ZZZZZZ	1		
15:47	ZZZZZZ	1		
15:51	ZZZZZZ	1		
15:56	MA43233-CCV5	1		
16:00	MA43233-CCB6	1		
16:04	ZZZZZZ	1		
16:08	ZZZZZZ	1		
16:12	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:17	ZZZZZZ	1		
16:21	ZZZZZZ	1		
16:25	ZZZZZZ	1		
16:31	ZZZZZZ	1		
16:35	ZZZZZZ	1		
16:40	ZZZZZZ	1		
16:44	MA43233-CCV6	1		
16:48	MA43233-CCB7	1		
16:52	MP4222-MB1	1		
16:57	MP4222-MB2	1		
17:01	MP4222-B1	1		
17:05	MP4222-B2	1		
17:09	MP4222-B3	1		
17:13	MP4222-S1	1		
17:17	MP4222-S2	1		
17:21	JC55198-8A	1		
17:26	MP4222-SD1	5		
17:30	MA43233-CCV7	1		
17:34	MA43233-CCB8	1		
17:38	JC55198-7A	1		
17:43	JC55198-9A	1		
---------->	Last reportable sample/prep for job JC55198			
17:47	ZZZZZZ	1		
17:51	ZZZZZZ	2		
17:55	MP4219-MB1	5		
18:00	MP4219-B1	5		
18:04	MP4219-S1	5		
18:08	MP4219-S2	5		
18:12	JC53967-2TA	5		(sample used for QC only; not part of login JC55198)
18:17	MA43233-CCV8	1		
18:21	MA43233-CCB9	1		
18:26	MA43233-CRI2	1		
18:30	MA43233-CRID3	1		
18:34	MA43233-ICSA2	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

	Time	Sample Description	Dilution Factor	PS Recov	Comments
	18:39	MA43233-ICSAB2	1		
	18:43	MA43233-CCV9	1		
	18:47	MA43233-CCB10	1		
---------->	Last reportable CCB for job JC55198				
	18:51	ZZZZZZ	1		
	18:56	ZZZZZZ	1		
	19:00	ZZZZZZ	1		
	19:05	ZZZZZZ	1		
	19:09	ZZZZZZ	1		
	19:13	ZZZZZZ	1		
	19:18	ZZZZZZ	1		
	19:22	ZZZZZZ	1		
	19:26	ZZZZZZ	1		
	19:31	ZZZZZZ	1		
	19:35	MA43233-CCV10	1		
	19:39	MA43233-CCB11	1		
	19:44	MP4219-SD1	25		
	19:48	ZZZZZZ	5		
	19:52	ZZZZZZ	5		
	19:57	ZZZZZZ	5		
	20:01	ZZZZZZ	5		
	20:05	ZZZZZZ	5		
	20:10	ZZZZZZ	5		
	20:14	ZZZZZZ	5		
	20:18	MA43233-CCV11	1		
	20:23	MA43233-CCB12	1		
	20:27	ZZZZZZ	5		
	20:31	ZZZZZZ	5		
	20:36	ZZZZZZ	5		
	20:40	ZZZZZZ	5		
	20:44	ZZZZZZ	5		
	20:49	ZZZZZZ	5		
	20:53	ZZZZZZ	5		
	20:57	ZZZZZZ	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
21:02	ZZZZZZ	5		
21:06	MA43233-CCV12	1		
21:10	MA43233-CCB13	1		
21:14	ZZZZZZ	5		
21:19	ZZZZZZ	5		
21:23	MP4220-MB1	1		batch to releach for Al
21:27	MP4220-B1	1		
21:31	MP4220-S1	1		
21:35	MP4220-S2	1		
21:40	JC53110-2R	1		(sample used for QC only; not part of login JC55198)
21:44	MP4220-SD1	5		
21:48	ZZZZZZ	1		
21:52	MA43233-CCV13	1		
21:56	MA43233-CCB14	1		
22:01	MP4095-MB1	5		
22:05	MP4095-B1	5		
22:09	MP4095-S1	5		
22:14	MP4095-S2	5		
22:18	JC54632-1A	5		(sample used for QC only; not part of login JC55198)
22:22	MP4095-SD1	25		
22:26	ZZZZZZ	5		
22:31	ZZZZZZ	5		
22:35	ZZZZZZ	5		
22:40	MA43233-CCV14	1		
22:44	MA43233-CCB15	1		
22:48	ZZZZZZ	5		
22:52	ZZZZZZ	5		
22:57	ZZZZZZ	5		
23:01	ZZZZZZ	5		
23:06	ZZZZZZ	5		
23:10	ZZZZZZ	5		
23:14	ZZZZZZ	5		
23:19	ZZZZZZ	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
23:23	ZZZZZZ	5		
23:28	MA43233-CCV15	1		
23:32	MA43233-CCB16	1		
23:36	MA43233-CRI3	1		
23:40	MA43233-CRID4	1		
23:45	MA43233-CCV16	1		
23:49	MA43233-CCB17	1		
23:53	MA43233-ICSA3	1		
23:57	MA43233-ICSAB3	1		
00:02	MA43233-CCV17	1		
00:08	MA43233-CCB18	1		
00:12	ZZZZZZ	5		
00:17	ZZZZZZ	5		
00:21	ZZZZZZ	5		
00:26	ZZZZZZ	5		
00:30	ZZZZZZ	5		
00:34	MP4206-MB1	1		
00:39	MP4206-B1	1		
00:43	MP4206-S1	1		
00:47	MP4206-S2	1		
00:51	JC54949-12A	1		(sample used for QC only; not part of login JC55198)
00:55	MA43233-CCV18	1		
00:59	MA43233-CCB19	1		
01:04	MP4206-SD1	1		
01:08	ZZZZZZ	2		
01:12	ZZZZZZ	10		
01:16	ZZZZZZ	2		
01:21	ZZZZZZ	10		
01:25	ZZZZZZ	5		
01:29	ZZZZZZ	5		
01:34	ZZZZZZ	1		
01:38	ZZZZZZ	2		
01:43	ZZZZZZ	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
01:47	MA43233-CCV19	1		
01:51	MA43233-CCB20	1		
01:55	ZZZZZZ	1		
02:00	ZZZZZZ	1		
02:04	ZZZZZZ	3		
02:08	ZZZZZZ	5		
02:12	ZZZZZZ	1		
02:17	ZZZZZZ	1		
02:21	ZZZZZZ	1		
02:25	ZZZZZZ	1		
02:30	ZZZZZZ	1		
02:34	MA43233-CCV20	1		
02:38	MA43233-CCB21	1		
02:42	ZZZZZZ	1		
02:47	ZZZZZZ	1		
02:51	ZZZZZZ	1		
02:55	ZZZZZZ	1		
03:00	ZZZZZZ	1		
03:04	ZZZZZZ	1		
03:09	ZZZZZZ	1		
03:13	ZZZZZZ	1		
03:17	ZZZZZZ	1		
03:22	MA43233-CCV21	1		
03:26	MA43233-CCB22	1		
03:30	ZZZZZZ	1		
03:34	ZZZZZZ	1		
03:39	ZZZZZZ	1		
03:43	MA43233-CCV22	1		
03:47	MA43233-CCB23	1		
03:52	MA43233-CRI4	1		
03:56	MA43233-CRID5	1		
04:00	MA43233-CCV23	1		
04:04	MA43233-CCB24	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
04:09	MP4224-MB1	1		
04:13	MP4224-B1	1		
04:17	MP4224-S1	1		
04:21	MP4224-S2	1		
04:25	JC55004-7	1		(sample used for QC only; not part of login JC55198)
04:29	MP4224-SD1	5		
04:34	ZZZZZZ	1		
04:38	ZZZZZZ	1		
04:42	ZZZZZZ	1		
04:47	MA43233-CCV24	1		
04:51	MA43233-CCB25	1		
04:55	ZZZZZZ	1		
04:59	ZZZZZZ	1		
05:04	ZZZZZZ	1		
05:08	ZZZZZZ	1		
05:12	ZZZZZZ	1		
05:17	ZZZZZZ	1		
05:21	MP4225-MB1	1		
05:25	MP4225-B1	1		
05:29	MP4225-S1	1		
05:33	MP4225-S2	1		
05:37	MA43233-CCV25	1		
05:41	MA43233-CCB26	1		
05:46	JC55128-3	1		(sample used for QC only; not part of login JC55198)
05:50	MP4225-SD1	5		
05:54	ZZZZZZ	1		
05:59	ZZZZZZ	1		
06:03	ZZZZZZ	1		
06:07	ZZZZZZ	1		
06:11	ZZZZZZ	1		
06:16	ZZZZZZ	1		
06:20	ZZZZZZ	1		
06:25	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:29	MA43233-CCV26	1		
06:33	MA43233-CCB27	1		
06:37	ZZZZZZ	1		
06:42	MP4229-MB1	1		
06:46	MP4229-B1	1		
06:50	MP4229-S1	1		
06:54	MP4229-S2	1		
06:58	JC55149-12	1		(sample used for QC only; not part of login JC55198)
07:02	MP4229-SD1	5		
07:07	ZZZZZZ	1		
07:11	ZZZZZZ	1		
07:15	MA43233-CCV27	1		
07:19	MA43233-CCB28	1		
07:23	ZZZZZZ	1		
07:28	ZZZZZZ	1		
07:32	ZZZZZZ	1		
07:36	ZZZZZZ	1		
07:40	ZZZZZZ	1		
07:45	ZZZZZZ	1		
07:49	ZZZZZZ	1		
07:53	MA43233-CCV28	1		
07:57	MA43233-CCB29	1		
08:02	ZZZZZZ	1		
08:43	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:22	MA43233-STD1	3680 R	103800 R	18623 R	7927 R
11:27	MA43233-STD2	3420	96252	18284	6985
11:31	ZZZZZZ	3515	98349	18259	7202
11:35	ZZZZZZ	3660	102860	18413	7891
11:40	MA43233-ICV1	3514	98290	18188	7202
11:52	MA43233-ICB1	3656	103200	18477	7878
11:56	MA43233-ICCV1	3515	98835	18309	7212
12:04	MA43233-CCB1	3675	103360	18445	7911
12:11	MA43233-CRI1	3611	102130	18543	7694
12:16	MA43233-CRID1	3643	102520	18425	7823
12:20	MA43233-ICSA1	3207	90514	17609	6413
12:24	MA43233-ICSAB1	3222	90430	17484	6447
12:29	MA43233-HSTD1	3600	101930	18454	7706
12:33	MA43233-HSTD2	3292	92414	17716	6533
12:37	ZZZZZZ	3593	101740	18247	7860
12:42	ZZZZZZ	3567	103250	18462	7844
12:46	ZZZZZZ	3656	103280	18354	7879
12:50	MA43233-CCV1	3513	98341	18141	7211
12:54	MA43233-CCB2	3651	103350	18438	7876
12:59	MP4075-MB1	3625	102850	18351	7800
13:03	MP4075-B1	3509	99407	18131	7301
13:07	MP4075-S1	3659	102810	19095	7214
13:11	MP4075-S2	3657	102830	19042	7227
13:15	ZZZZZZ	3767	105310	19117	7517
13:20	ZZZZZZ	3706	104270	18563	7777
13:24	ZZZZZZ	3717	104040	18760	7508
13:28	ZZZZZZ	3647	100770	18686	7362
13:32	ZZZZZZ	3602	101860	18769	7249
13:36	MA43233-CCV2	3512	98803	18029	7211
13:40	MA43233-CCB3	3656	103350	18322	7904
13:45	ZZZZZZ	3729	104340	18773	7479
13:49	ZZZZZZ	3740	104790	18988	7449
13:53	ZZZZZZ	3701	102790	18898	7441

INTERNAL STANDARD SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:57	ZZZZZZ	3705	103370	18678	7399
14:01	ZZZZZZ	3730	104770	18886	7502
14:06	ZZZZZZ	3798	106140	19457	7501
14:10	ZZZZZZ	3770	106150	19310	7421
14:14	ZZZZZZ	3689	103180	18599	7600
14:18	ZZZZZZ	3724	104620	18847	7469
14:22	MA43233-CCV3	3494	98065	17890	7167
14:26	MA43233-CCB4	3654	103060	18138	7873
14:31	MA43233-CRID2	3638	103100	18213	7841
14:35	MP4103-MB2	3640	103480	18247	7844
14:39	MP4103-B2	3524	99635	18181	7307
14:43	MP4103-S1	3419	96780	17867	6939
14:47	MP4103-S2	3385	96962	17921	6901
14:52	JC54576-3	3454	98357	17913	7182
14:56	MP4103-SD1	3599	101690	18052	7655
15:00	ZZZZZZ	3454	98242	18054	7189
15:04	ZZZZZZ	3475	98435	18104	7126
15:09	MA43233-CCV4	3503	97925	17809	7192
15:13	MA43233-CCB5	3639	102690	17942	7860
15:17	ZZZZZZ	3633	103040	18250	7846
15:21	ZZZZZZ	3441	97754	17898	7139
15:26	ZZZZZZ	3428	97360	17928	7109
15:30	ZZZZZZ	3442	97836	17849	7157
15:34	ZZZZZZ	3447	98210	17921	7166
15:39	ZZZZZZ	3439	96542	17882	7154
15:43	ZZZZZZ	3439	97607	17848	7125
15:47	ZZZZZZ	3620	102230	18275	7526
15:51	ZZZZZZ	3524	100430	18032	7285
15:56	MA43233-CCV5	3497	98188	17828	7187
16:00	MA43233-CCB6	3650	102280	18115	7887
16:04	ZZZZZZ	3479	99548	18138	7175
16:08	ZZZZZZ	3613	101820	18177	7457
16:12	ZZZZZZ	3346	94543	17759	6756

INTERNAL STANDARD SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:17	ZZZZZZ	No results reported for the elements associated with this internal standard.			
16:21	ZZZZZZ	3616	102850	18148	7806
16:25	ZZZZZZ	3674	103930	18497	8000
16:31	ZZZZZZ	12769 !	318460 !	40753 !	26791 !
16:35	ZZZZZZ	3599	101670	18434	7643
16:40	ZZZZZZ	2722	76324	16865	5112 !
16:44	MA43233-CCV6	3468	97356	17672	7120
16:48	MA43233-CCB7	3616	102020	17823	7803
16:52	MP4222-MB1	3605	102330	17825	7770
16:57	MP4222-MB2	3605	102530	17910	7774
17:01	MP4222-B1	3516	99256	17820	7303
17:05	MP4222-B2	3535	96777	17887	7339
17:09	MP4222-B3	3521	99419	17746	7326
17:13	MP4222-S1	3487	98174	17835	7094
17:17	MP4222-S2	3428	96848	17588	6985
17:21	JC55198-8A	3487	98645	17770	7295
17:26	MP4222-SD1	3594	101320	17799	7661
17:30	MA43233-CCV7	3508	98477	17626	7206
17:34	MA43233-CCB8	3644	102400	17727	7870
17:38	JC55198-7A	3450	94379	17487	7178
17:43	JC55198-9A	3465	97802	17547	7247
17:47	ZZZZZZ	3598	101970	17711	7737
17:51	ZZZZZZ	3697	102880	18239	7453
17:55	MP4219-MB1	3490	96767	17241	7149
18:00	MP4219-B1	3462	96822	17418	7035
18:04	MP4219-S1	3420	95435	17465	6905
18:08	MP4219-S2	3404	95082	17409	6878
18:12	JC53967-2TA	3412	95284	17423	6904
18:17	MA43233-CCV8	3511	98010	17459	7208
18:21	MA43233-CCB9	3660	102720	17661	7897
18:26	MA43233-CRI2	3603	101190	17600	7688
18:30	MA43233-CRID3	3637	101880	17443	7824
18:34	MA43233-ICSA2	3236	90325	16821	6468

INTERNAL STANDARD SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:39	MA43233-ICSAB2	3205	89405	16610	6415
18:43	MA43233-CCV9	3510	97542	17265	7194
18:47	MA43233-CCB10	3653	102130	17356	7881
18:51	ZZZZZZ	3742	97978	17690	7172
18:56	ZZZZZZ	3656	102040	17411	7859
19:00	ZZZZZZ	3601	101580	17202	7748
19:05	ZZZZZZ	3664	102290	17337	7868
19:09	ZZZZZZ	3635	102010	17245	7834
19:13	ZZZZZZ	3660	102360	17345	7884
19:18	ZZZZZZ	3351	93483	16652	6876
19:22	ZZZZZZ	3371	94049	16815	6940
19:26	ZZZZZZ	3619	101700	17263	7812
19:31	ZZZZZZ	3697	103090	17443	7969
19:35	MA43233-CCV10	3504	97287	17051	7190
19:39	MA43233-CCB11	3670	102290	17319	7897
19:44	MP4219-SD1	3515	98136	17137	7318
19:48	ZZZZZZ	3462	95438	17015	7062
19:52	ZZZZZZ	3428	95268	17177	7010
19:57	ZZZZZZ	3410	93408	16957	6864
20:01	ZZZZZZ	3484	95857	17039	7107
20:05	ZZZZZZ	3343	92753	16783	6728
20:10	ZZZZZZ	3462	95445	16893	7068
20:14	ZZZZZZ	3432	94543	16938	6938
20:18	MA43233-CCV11	3498	97115	16906	7167
20:23	MA43233-CCB12	3649	101660	17100	7866
20:27	ZZZZZZ	3401	93460	16775	6860
20:31	ZZZZZZ	3368	93127	16754	6794
20:36	ZZZZZZ	3391	95178	17169	6882
20:40	ZZZZZZ	3481	96098	17045	7083
20:44	ZZZZZZ	3498	96364	17021	7145
20:49	ZZZZZZ	3463	93479	16889	7007
20:53	ZZZZZZ	3425	94821	16881	6963
20:57	ZZZZZZ	3480	95571	17036	7056

INTERNAL STANDARD SUMMARY

Login Number: JC55198
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File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
21:02	ZZZZZZ	3457	95585	16837	7018
21:06	MA43233-CCV12	3509	97376	16927	7194
21:10	MA43233-CCB13	3658	100900	17106	7872
21:14	ZZZZZZ	3406	93991	16870	6865
21:19	ZZZZZZ	3448	94939	16825	6951
21:23	MP4220-MB1	3648	102240	17239	7858
21:27	MP4220-B1	3544	98726	16855	7330
21:31	MP4220-S1	3524	96923	17117	7272
21:35	MP4220-S2	3521	98191	17021	7274
21:40	JC53110-2R	3634	101070	17147	7656
21:44	MP4220-SD1	3654	101810	17094	7830
21:48	ZZZZZZ	3593	100480	17123	7602
21:52	MA43233-CCV13	3522	97258	16888	7211
21:56	MA43233-CCB14	3660	102040	17216	7899
22:01	MP4095-MB1	3443	93894	16813	6947
22:05	MP4095-B1	3455	95340	16901	6953
22:09	MP4095-S1	3458	94659	16840	6940
22:14	MP4095-S2	3457	94631	16712	6934
22:18	JC54632-1A	3442	94081	16830	6968
22:22	MP4095-SD1	3555	98967	16970	7425
22:26	ZZZZZZ	3413	94507	16717	6907
22:31	ZZZZZZ	3457	94226	16638	6981
22:35	ZZZZZZ	3427	94227	16634	6930
22:40	MA43233-CCV14	3516	97091	16802	7206
22:44	MA43233-CCB15	3668	101700	16884	7900
22:48	ZZZZZZ	3436	93979	16639	6960
22:52	ZZZZZZ	3437	94121	16370	6945
22:57	ZZZZZZ	3437	94011	16675	6931
23:01	ZZZZZZ	3430	94092	16675	6940
23:06	ZZZZZZ	3443	94092	16645	6958
23:10	ZZZZZZ	3447	94177	16589	6970
23:14	ZZZZZZ	3442	94039	16656	6961
23:19	ZZZZZZ	3433	94049	16662	6940

INTERNAL STANDARD SUMMARY

Login Number: JC55198
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Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
23:23	ZZZZZZ	3442	93956	16707	6951
23:28	MA43233-CCV15	3508	96992	16780	7209
23:32	MA43233-CCB16	3662	102110	16897	7894
23:36	MA43233-CRI3	3610	100500	16728	7702
23:40	MA43233-CRID4	3640	101450	16867	7836
23:45	MA43233-CCV16	3487	96804	16596	7160
23:49	MA43233-CCB17	3656	101910	16891	7905
23:53	MA43233-ICSA3	3236	89447	16050	6465
23:57	MA43233-ICSAB3	3229	89459	15953	6469
00:02	MA43233-CCV17	3489	96992	16545	7161
00:08	MA43233-CCB18	3669	101650	16900	7913
00:12	ZZZZZZ	3447	94086	16623	6982
00:17	ZZZZZZ	3454	94688	16541	7004
00:21	ZZZZZZ	3438	94309	16585	6946
00:26	ZZZZZZ	3455	93944	16505	6988
00:30	ZZZZZZ	3371	93553	16467	6817
00:34	MP4206-MB1	3641	101660	16886	7862
00:39	MP4206-B1	3524	97745	16771	7306
00:43	MP4206-S1	3329	93225	16388	6784
00:47	MP4206-S2	3326	93096	16349	6772
00:51	JC54949-12A	3335	93712	16452	6914
00:55	MA43233-CCV18	3498	97146	16547	7185
00:59	MA43233-CCB19	3671	101180	16892	7911
01:04	MP4206-SD1	3557	98824	16646	7530
01:08	ZZZZZZ	3151	96217	16530	7133
01:12	ZZZZZZ	3537	100050	16749	7635
01:16	ZZZZZZ	3121	96339	16540	7088
01:21	ZZZZZZ	3524	99892	16740	7608
01:25	ZZZZZZ	3419	94419	16104	6988
01:29	ZZZZZZ	3432	95910	16419	7096
01:34	ZZZZZZ	3323	92679	16279	6616
01:38	ZZZZZZ	3430	95806	16485	6960
01:43	ZZZZZZ	3466	96021	16509	7188

INTERNAL STANDARD SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
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File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
01:47	MA43233-CCV19	3516	97030	16484	7225
01:51	MA43233-CCB20	3660	101640	16678	7918
01:55	ZZZZZZ	3621	101510	16741	7812
02:00	ZZZZZZ	3626	101200	16685	7813
02:04	ZZZZZZ	3506	97742	16665	7367
02:08	ZZZZZZ	3426	95229	16507	7023
02:12	ZZZZZZ	3649	101060	16969	7884
02:17	ZZZZZZ	3634	102070	16872	7846
02:21	ZZZZZZ	3548	97704	16135	7424
02:25	ZZZZZZ	3583	99799	16764	7565
02:30	ZZZZZZ	3566	99490	16867	7487
02:34	MA43233-CCV20	3511	96843	16273	7209
02:38	MA43233-CCB21	3654	101640	16799	7910
02:42	ZZZZZZ	3381	94477	16326	6920
02:47	ZZZZZZ	3416	93699	16491	6923
02:51	ZZZZZZ	3447	94797	16521	6988
02:55	ZZZZZZ	3220	90125	16128	6490
03:00	ZZZZZZ	3407	93716	16409	6928
03:04	ZZZZZZ	3439	94392	16372	6991
03:09	ZZZZZZ	3200	88652	15892	6459
03:13	ZZZZZZ	3461	95818	16544	7087
03:17	ZZZZZZ	3334	91709	16232	6682
03:22	MA43233-CCV21	3518	96992	16472	7230
03:26	MA43233-CCB22	3656	99846	16669	7921
03:30	ZZZZZZ	3470	94955	16510	7104
03:34	ZZZZZZ	3326	90945	16228	6652
03:39	ZZZZZZ	3326	92684	16124	6798
03:43	MA43233-CCV22	3508	96886	16428	7227
03:47	MA43233-CCB23	3667	99975	16618	7934
03:52	MA43233-CRI4	3613	100010	16517	7731
03:56	MA43233-CRID5	3606	100820	16517	7780
04:00	MA43233-CCV23	3516	96796	16353	7227
04:04	MA43233-CCB24	3667	101660	16541	7923

INTERNAL STANDARD SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
04:09	MP4224-MB1	3730	103810	17106	8137
04:13	MP4224-B1	3614	99945	16960	7516
04:17	MP4224-S1	3577	99413	17017	7413
04:21	MP4224-S2	3586	99523	16900	7427
04:25	JC55004-7	3687	102480	17119	7902
04:29	MP4224-SD1	3659	101420	16677	7903
04:34	ZZZZZZ	3683	100390	17130	7866
04:38	ZZZZZZ	3693	102180	17120	7911
04:42	ZZZZZZ	3671	102040	17131	7850
04:47	MA43233-CCV24	3488	96152	16177	7179
04:51	MA43233-CCB25	3650	100670	16556	7903
04:55	ZZZZZZ	3582	99251	17057	7414
04:59	ZZZZZZ	3673	101810	16980	7845
05:04	ZZZZZZ	3591	98946	16917	7427
05:08	ZZZZZZ	3673	101780	16985	7844
05:12	ZZZZZZ	3572	98683	16825	7394
05:17	ZZZZZZ	3475	96400	16843	7109
05:21	MP4225-MB1	3725	103240	17050	8132
05:25	MP4225-B1	3596	99799	16880	7503
05:29	MP4225-S1	3577	99338	16818	7437
05:33	MP4225-S2	3585	99329	16878	7456
05:37	MA43233-CCV25	3489	96223	16313	7195
05:41	MA43233-CCB26	3661	101840	16461	7917
05:46	JC55128-3	3694	102820	17076	7941
05:50	MP4225-SD1	3665	101090	16544	7917
05:54	ZZZZZZ	3697	103750	17060	8055
05:59	ZZZZZZ	3661	101440	17127	7744
06:03	ZZZZZZ	3675	102450	17099	7904
06:07	ZZZZZZ	3665	101380	17021	7760
06:11	ZZZZZZ	3067	85250	15884	6083
06:16	ZZZZZZ	3493	95666	16745	7087
06:20	ZZZZZZ	3363	93376	16697	6765
06:25	ZZZZZZ	3514	97391	16903	7204

INTERNAL STANDARD SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
Analyst: GT Run ID: MA43233
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:29	MA43233-CCV26	3489	96239	16160	7188
06:33	MA43233-CCB27	3653	101340	16400	7923
06:37	ZZZZZZ	3467	93375	16657	7026
06:42	MP4229-MB1	3726	103140	16828	8120
06:46	MP4229-B1	3596	99918	16783	7522
06:50	MP4229-S1	3559	99133	16891	7356
06:54	MP4229-S2	3558	98885	16939	7352
06:58	JC55149-12	3664	100910	17081	7664
07:02	MP4229-SD1	3613	100200	16308	7755
07:07	ZZZZZZ	3706	102250	16864	7849
07:11	ZZZZZZ	3551	98024	16542	7457
07:15	MA43233-CCV27	3468	95538	15989	7160
07:19	MA43233-CCB28	3639	100710	16174	7884
07:23	ZZZZZZ	3562	98526	16809	7459
07:28	ZZZZZZ	3522	97866	16645	7377
07:32	ZZZZZZ	3594	99359	16709	7557
07:36	ZZZZZZ	3558	98421	16615	7475
07:40	ZZZZZZ	3545	98645	16572	7476
07:45	ZZZZZZ	3563	98445	16572	7472
07:49	ZZZZZZ	2781	78352	14726	5608
07:53	MA43233-CCV28	3485	95708	15934	7192
07:57	MA43233-CCB29	3615	99830	16080	7855
08:02	ZZZZZZ	3629	100330	16103	7875
08:43	ZZZZZZ	3774	104270	17014	8272

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43233 Units: ug/l

Time:			11:52		12:04		12:54		13:40	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2	anr							
Arsenic	3.0	1.6	anr							
Barium	200	.3	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.5								
Boron	100	1.1								
Cadmium	3.0	.4	anr							
Calcium	2000	3.5	anr							
Chromium	10	.9	anr							
Cobalt	50	.4								
Copper	10	.8	-0.50	<10	-0.50	<10	-0.30	<10	-0.10	<10
Iron	100	2.8	-0.90	<100	-1.0	<100	2.0	<100	2.1	<100
Lead	3.0	2.2	anr							
Lithium	50	1.9								
Magnesium	2000	24	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3	anr							
Nickel	10	.5	anr							
Phosphorus	50	1.4								
Potassium	2000	44	anr							
Selenium	10	2.6	anr							
Silicon	200	1.6								
Silver	10	1	-0.60	<10	0.40	<10	-0.10	<10	0.40	<10
Sodium	2000	9.7	anr							
Strontium	10	.1								
Sulfur	50	3.6								
Thallium	2.0	1.5	anr							
Tin	10	.9								
Titanium	10	.7								
Tungsten	50	1.4								
Vanadium	50	.8	anr							
Zinc	20	.4	-0.10	<20	0.10	<20	0.10	<20	0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43233 Units: ug/l

Time: / Sample ID:			11:52 ICB1		12:04 CCB1		12:54 CCB2		13:40 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43233 Units: ug/l

Time: / Sample ID:			14:26 CCB4		15:13 CCB5		16:00 CCB6		16:48 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2	anr							
Arsenic	3.0	1.6	anr							
Barium	200	.3	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.5								
Boron	100	1.1								
Cadmium	3.0	.4	anr							
Calcium	2000	3.5	anr							
Chromium	10	.9	anr							
Cobalt	50	.4								
Copper	10	.8	-0.30	<10	-0.60	<10	0.0	<10	-0.30	<10
Iron	100	2.8	-0.10	<100	-2.0	<100	-2.3	<100	-0.90	<100
Lead	3.0	2.2	anr							
Lithium	50	1.9								
Magnesium	2000	24	anr							
Manganese	15	.2	anr							
Molybdenum	20	.3	anr							
Nickel	10	.5	anr							
Phosphorus	50	1.4								
Potassium	2000	44	anr							
Selenium	10	2.6	anr							
Silicon	200	1.6								
Silver	10	1	-0.20	<10	-0.40	<10	-0.40	<10	-0.30	<10
Sodium	2000	9.7	anr							
Strontium	10	.1								
Sulfur	50	3.6								
Thallium	2.0	1.5	anr							
Tin	10	.9								
Titanium	10	.7								
Tungsten	50	1.4								
Vanadium	50	.8	anr							
Zinc	20	.4	0.0	<20	-0.10	<20	0.0	<20	0.70	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43233 Units: ug/l

Time: / Sample ID:			14:26 CCB4		15:13 CCB5		16:00 CCB6		16:48 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

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JC55198

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43233 Units: ug/l

Time: / Sample ID:			17:34 CCB8		18:21 CCB9		18:47 CCB10	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	16	anr					
Antimony	6.0	2	anr					
Arsenic	3.0	1.6	anr					
Barium	200	.3	anr					
Beryllium	1.0	.1	anr					
Bismuth	20	3.5						
Boron	100	1.1						
Cadmium	3.0	.4	anr					
Calcium	2000	3.5	anr					
Chromium	10	.9	anr					
Cobalt	50	.4						
Copper	10	.8	-0.20	<10	-0.40	<10	-0.70	<10
Iron	100	2.8	-0.70	<100	0.60	<100	-1.0	<100
Lead	3.0	2.2	anr					
Lithium	50	1.9						
Magnesium	2000	24	anr					
Manganese	15	.2	anr					
Molybdenum	20	.3	anr					
Nickel	10	.5	anr					
Phosphorus	50	1.4						
Potassium	2000	44	anr					
Selenium	10	2.6	anr					
Silicon	200	1.6						
Silver	10	1	-0.60	<10	-0.10	<10	-0.10	<10
Sodium	2000	9.7	anr					
Strontium	10	.1						
Sulfur	50	3.6						
Thallium	2.0	1.5	anr					
Tin	10	.9						
Titanium	10	.7						
Tungsten	50	1.4						
Vanadium	50	.8	anr					
Zinc	20	.4	1.1	<20	1.3	<20	1.0	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43233 Units: ug/l

Time:			17:34		18:21		18:47	
Sample ID:			CCB8		CCB9		CCB10	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zirconium	10	.4						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		11:56	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt			
Copper	2000	1960	98.0
Iron	40000	40700	101.8
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	252	100.8
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2030	101.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		11:56	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested

8.2.3
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		11:40			12:50			13:36	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt									
Copper	2000	1970	98.5	2000	1960	98.0	2000	1970	98.5
Iron	40000	41100	102.8	40000	40700	101.8	40000	40900	102.3
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	251	100.4	250	253	101.2	250	252	100.8
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2030	101.5	2000	2030	101.5	2000	2020	101.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		11:40			12:50			13:36	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

8.2.4
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ACCUTEST
JC55198

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		14:22			15:09			15:56	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt									
Copper	2000	1970	98.5	2000	1970	98.5	2000	1970	98.5
Iron	40000	41100	102.8	40000	41000	102.5	40000	41000	102.5
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	253	101.2	250	254	101.6	250	253	101.2
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2030	101.5	2000	2020	101.0	2000	2020	101.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		14:22			15:09			15:56	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		16:44			17:30			18:17	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt									
Copper	2000	1990	99.5	2000	1970	98.5	2000	1970	98.5
Iron	40000	41100	102.8	40000	40500	101.3	40000	40600	101.5
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	256	102.4	250	253	101.2	250	254	101.6
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2040	102.0	2000	2030	101.5	2000	2050	102.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		16:44			17:30			18:17	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

8.2.4
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		18:43	
Sample ID:	CCV	CCV9	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt			
Copper	2000	1990	99.5
Iron	40000	40800	102.0
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	255	102.0
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2050	102.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43233 Units: ug/l

Time:		18:43	
Sample ID:	CCV	CCV9	
Metal	True	Results	% Rec
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

8.2.4
8

HIGH STANDARD CHECK SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA43233 Units: ug/l

Time:		12:29			12:33	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	5000	5050	101.0			
Iron				150000	147000	98.0
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	630	630	100.8			
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	5000	5150	103.0			

HIGH STANDARD CHECK SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA43233 Units: ug/l

Time:		12:29			12:33	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

8.2.5 8

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA43233 Units: ug/l

Time:				12:11		12:16		14:31	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0						
Copper	10		2.0	10.0	100.0				
Iron	100	500		111	111.0				
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	5.0	100.0				
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	22.3	111.5	11.3	113.0	11.7	117.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA43233 Units: ug/l

Time:				12:11		12:16		14:31	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA43233 Units: ug/l

Time:				18:26		18:30	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr			
Antimony	6.0	20	3.0	anr			
Arsenic	8.0	20	3.0	anr			
Barium	200		4.0	anr			
Beryllium	2.0		1.0	anr			
Bismuth	20						
Boron	100		10				
Cadmium	3.0		1.0	anr			
Calcium	5000	2000	1000	anr			
Chromium	10		2.0	anr			
Cobalt	50		3.0				
Copper	10		2.0	9.8	98.0		
Iron	100	500		105	105.0		
Lead	3.0	20	2.5	anr			
Lithium	50						
Magnesium	5000	2000	100	anr			
Manganese	15		3.0	anr			
Molybdenum	20			anr			
Nickel	10		4.0	anr			
Phosphorus	50						
Potassium	5000		2000	anr			
Selenium	10	20	5.0	anr			
Silicon	200						
Silver	5.0		2.0	4.5	90.0		
Sodium	5000		1000	anr			
Strontium	10						
Sulfur	50						
Thallium	10		2.0	anr			
Tin	10						
Titanium	10						
Tungsten	50						
Vanadium	50		2.0	anr			
Zinc	20		10	21.3	106.5	11.0	110.0

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LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA43233 Units: ug/l

Time:				18:26		18:30	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec
Zirconium	10						

(*) Outside of QC limits
(anr) Analyte not requested

8.2.6

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SGS ACCUTEST
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JC55198

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA43233 Units: ug/l

Time:			12:20		12:24		18:34		18:39	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	532000	106.4	529000	105.8	535000	107.0	539000	107.8
Antimony		1000	-6.7		1050	105.0	-6.7		1060	106.0
Arsenic		1000	-0.20		1100	110.0	1.4		1110	111.0
Barium		500	-0.70		540	108.0	-0.40		554	110.8
Beryllium		500	0.30		521	104.2	0.30		524	104.8
Bismuth		500	3.2		538	107.6	3.9		544	108.8
Boron		500	-1.8		523	104.6	-3.2		527	105.4
Cadmium		1000	0.30		1080	108.0	0.20		1090	109.0
Calcium	400000	400000	420000	105.0	412000	103.0	415000	103.8	418000	104.5
Chromium		500	2.1		502	100.4	1.7		512	102.4
Cobalt		500	0.80		504	100.8	0.50		509	101.8
Copper		500	2.4		529	105.8	1.6		538	107.6
Iron	200000	200000	206000	103.0	205000	102.5	205000	102.5	206000	103.0
Lead		1000	1.2		1000	100.0	4.2		1020	102.0
Lithium		500	-19		525	105.0	-21		531	106.2
Magnesium	500000	500000	525000	105.0	544000	108.8	528000	105.6	554000	110.8
Manganese		500	0.60		523	104.6	-0.30		535	107.0
Molybdenum		500	-0.80		509	101.8	-0.90		519	103.8
Nickel		1000	-0.20		1010	101.0	0.0		1020	102.0
Phosphorus		500	-9.4		525	105.0	-7.6		536	107.2
Potassium			-400		-410		-390		-460	
Selenium		1000	0.10		1050	105.0	5.2		1060	106.0
Silicon		500	-3.2		546	109.2	-6.3		547	109.4
Silver		1000	5.5		1100	110.0	3.0		1120	112.0
Sodium			21.6		44.5		163		138	
Strontium		500	-0.70		562	112.4	-0.50		572	114.4
Sulfur		500	-18		524	104.8	-19		532	106.4
Thallium		1000	1.9		1020	102.0	-0.50		1040	104.0
Tin		500	-2.6		478	95.6	-1.6		485	97.0
Titanium		500	0.0		525	105.0	-0.40		535	107.0
Tungsten		500	-0.20		499	99.8	1.2		511	102.2
Vanadium		500	-1.5		511	102.2	-0.90		523	104.6
Zinc		1000	-0.10		989	98.9	0.0		1010	101.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: SE111417M1.ICP Date Analyzed: 11/14/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA43233 Units: ug/l

Time:			12:20		12:24		18:34		18:39	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium		500	4.5		527	105.4	3.8		537	107.4

(*) Outside of QC limits
(anr) Analyte not requested

8.2.7
8

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JC55198

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:				11/14/17		11/14/17	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Aluminum	200	16	33				
Antimony	6.0	2	4.3				
Arsenic	3.0	1.6	2.7				
Barium	200	.3	1.3				
Beryllium	1.0	.1	.4				
Bismuth	20	3.5	5				
Boron	100	1.1	13				
Cadmium	3.0	.4	.7				
Calcium	5000	3.5	29				
Chromium	10	.9	.85				
Cobalt	50	.4	.72				
Copper	10	.8	3.2	0.0	<10	-0.60	<10
Iron	100	2.8	32	3.1	<100	3.1	<100
Lead	3.0	2.2	2.6				
Lithium	50	1.9	15				
Magnesium	5000	24	64				
Manganese	15	.2	.42				
Molybdenum	20	.3	1.4				
Nickel	10	.5	1.3				
Phosphorus	50	1.4	13				
Potassium	10000	44	230				
Selenium	10	2.6	6.6				
Silicon	200	1.6	45				
Silver	10	1	3.1	-0.50	<10	-0.50	<10
Sodium	10000	9.7	130				
Strontium	10	.1	.3				
Sulfur	50	3.6	15				
Thallium	2.0	1.5	1.6				
Tin	10	.9	2.4				
Titanium	10	.7	1.8				
Tungsten	50	1.4	14				
Vanadium	50	.8	1.3				
Zinc	20	.4	4	0.40	<20	0.80	<20

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date:				11/14/17		11/14/17	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Zirconium	10	.4	2				

Associated samples MP4222: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/14/17

Metal	JC55198-8A Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	anr				
Beryllium					
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper	0.90	1940	2000	97.0	75-125
Iron	249	25800	25000	102.2	75-125
Lead	anr				
Lithium					
Magnesium					
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	0.0	251	250	100.4	75-125
Sodium	anr				
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	2.1	1960	2000	97.9	75-125

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/14/17

Metal	JC55198-8A Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP4222: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/14/17

Metal	JC55198-8A Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	0.90	2020	2000	101.0	4.0	20
Iron	249	26700	25000	105.8	3.4	20
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	0.0	262	250	104.8	4.3	20
Sodium	anr					
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	2.1	2040	2000	101.9	4.0	20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/14/17

Metal	JC55198-8A Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP4222: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:			11/14/17					11/14/17	
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSD Result	Spikelot MPSPK2	% Rec	BSD RPD	QC Limit
Aluminum									
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	1980	2000	99.0	80-120	1980	2000	99.0	3.6	20
Iron	26200	25000	104.8	80-120	25600	25000	102.4	1.6	20
Lead	anr								
Lithium									
Magnesium									
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	254	250	101.6	80-120	255	250	102.0	4.0	20
Sodium	anr								
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									
Zinc	2020	2000	101.0	80-120	1970	2000	98.5	0.5	20

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/14/17 11/14/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSD Result	Spikelot MPSPK2	% Rec	BSD RPD	QC Limit
Zirconium									

Associated samples MP4222: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.3.3

8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/14/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	1910	2000	95.5	80-120
Iron	25200	25000	100.8	80-120
Lead	anr			
Lithium				
Magnesium				
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	245	250	98.0	80-120
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	1960	2000	98.0	80-120

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/14/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP4222: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.3.3

8

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/14/17

Metal	JC55198-8A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	0.900	0.00	100.0(a)	0-10
Iron	249	271	8.7	0-10
Lead	anr			
Lithium				
Magnesium				
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	2.10	4.00	90.5 (a)	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4222 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/14/17

	JC55198-8A		QC
Metal	Original SDL 1:5	%DIF	Limits
Zirconium			

Associated samples MP4222: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

8.3.4

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BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4239 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/14/17

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.075	.083	0.045	<0.20

Associated samples MP4239: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4239
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 11/14/17

Metal	JC55198-7A Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0	2.0	2	100.0	75-125

Associated samples MP4239: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

8.4.2
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4239 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/14/17

Metal	JC55198-7A Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.0	1.8	2	90.0	10.5	20

Associated samples MP4239: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

QC Batch ID: MP4239
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 11/14/17

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	2.1	2	105.0	80-120

Associated samples MP4239: JC55198-7A, JC55198-8A, JC55198-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.4.3

8

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide	GP9298/GN72582	0.010	0.0	mg/l	0.0833	0.0897	107.7	90-110%
HEM Oil and Grease	GP9291/GN72554	5.0	0.0	mg/l	40.27	34.3	85.2	78-114%
Solids, Total Suspended	GN72524	4.0	0.0	mg/l				

Associated Samples:
Batch GP9291: JC55198-7A, JC55198-8A, JC55198-9A
Batch GP9298: JC55198-7A, JC55198-8A, JC55198-9A
Batch GN72524: JC55198-7A, JC55198-8A, JC55198-9A
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Cyanide	GP9298/GN72582	JC55198-7A	mg/l	0.0	0.0	0.0	0-32%
HEM Oil and Grease	GP9291/GN72554	JC55198-7A	mg/l	0.0	0.0	0.0	0-18%
Solids, Total Suspended	GN72524	JC55135-2	mg/l	4540	4560	0.4	0-17%

Associated Samples:
Batch GP9291: JC55198-7A, JC55198-8A, JC55198-9A
Batch GP9298: JC55198-7A, JC55198-8A, JC55198-9A
Batch GN72524: JC55198-7A, JC55198-8A, JC55198-9A
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Cyanide	GP9298/GN72582	JC55198-7A	mg/l	0.0	0.0833	0.082	98.4	90-110%
Cyanide	GP9298/GN72582	JC55198-8A	mg/l	0.0	0.0833	0.080	96.0	90-110%
HEM Oil and Grease	GP9291/GN72554	JC55198-9A	mg/l	0.0	40.27	15.9	39.5N(a)	78-114%

Associated Samples:
Batch GP9291: JC55198-7A, JC55198-8A, JC55198-9A
Batch GP9298: JC55198-7A, JC55198-8A, JC55198-9A
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: E111417W1.CN Date Analyzed: 11/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Analyst: BM Run ID: GN72582
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:16	GN72582-STD1	1		STDA
13:17	GN72582-STD2	1		STDB
13:19	GN72582-STD3	1		STDC
13:20	GN72582-STD4	1		STDD
13:22	GN72582-STD5	1		STDE
13:23	GN72582-STD6	1		STDF
13:24	GN72582-STD7	1		STDG
13:26	GN72582-ICV1	1		
13:27	GN72582-ICB1	1		
13:28	GN72582-CCV1	1		
13:30	GN72582-CCB1	1		
13:31	GP9276-MB1	1		
13:32	GP9276-B1	1		
13:34	GP9276-D1	1		
13:35	JC54516-2	1		(sample used for QC only; not part of login JC55198)
13:36	ZZZZZZ	1		
13:38	ZZZZZZ	1		
13:39	ZZZZZZ	1		
13:41	ZZZZZZ	1		
13:42	ZZZZZZ	1		
13:43	ZZZZZZ	1		
13:45	GN72582-CCV2	1		
13:46	GN72582-CCB2	1		
13:47	ZZZZZZ	1		
13:49	ZZZZZZ	1		
13:50	ZZZZZZ	1		
13:51	ZZZZZZ	1		
13:53	ZZZZZZ	1		
13:54	ZZZZZZ	1		
13:56	ZZZZZZ	1		
13:57	ZZZZZZ	1		
13:58	ZZZZZZ	1		
14:00	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: E111417W1.CN Date Analyzed: 11/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Analyst: BM Run ID: GN72582
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:01	GN72582-CCV3	1		
14:02	GN72582-CCB3	1		
14:04	ZZZZZZ	1		
14:05	ZZZZZZ	1		
14:06	ZZZZZZ	1		
14:08	GP9299-MB1	1		
14:09	GP9299-B1	1		
14:11	GP9299-S1	1		
14:12	GP9299-S2	1		
14:13	GP9299-D1	1		
14:15	D99853-5	1		(sample used for QC only; not part of login JC55198)
14:16	D99853-6	1		(sample used for QC only; not part of login JC55198)
14:17	GN72582-CCV4	1		
14:19	GN72582-CCB4	1		
14:20	ZZZZZZ	1		
14:21	ZZZZZZ	1		
14:23	ZZZZZZ	1		
14:24	ZZZZZZ	1		
14:25	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:28	ZZZZZZ	1		
14:30	ZZZZZZ	1		
14:31	ZZZZZZ	1		
14:32	ZZZZZZ	1		
14:34	GN72582-CCV5	1		
14:35	GN72582-CCB5	1		
14:36	ZZZZZZ	1		
14:38	ZZZZZZ	1		
14:39	GP9298-MB1	1		
14:40	GP9298-B1	1		
14:42	GP9298-S1	1		
14:43	GP9298-S2	1		
14:45	GP9298-D1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: E111417W1.CN Date Analyzed: 11/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Analyst: BM Run ID: GN72582
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:46	ZZZZZZ	1		
14:47	ZZZZZZ	1		
14:49	JC55198-7A	1		
14:50	GN72582-CCV6	1		
14:51	GN72582-CCB6	1		
14:53	JC55198-8A	1		
14:54	JC55198-9A	1		
14:55	ZZZZZZ	1		
14:57	ZZZZZZ	1		
14:58	ZZZZZZ	1		
15:00	ZZZZZZ	1		
15:01	ZZZZZZ	1		
15:02	ZZZZZZ	1		
15:05	GN72582-CCV7	1		
15:07	GN72582-CCB7	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC55198
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

File ID: E111417W1.CN Date Analyzed: 11/14/17 Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT, SW846 CHAP
Run ID: GN72582 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN72582-ICV1	Cyanide	0.33	0.010	0.0058	.3	110.0	90-110
GN72582-ICB1	Cyanide	-0.0097	0.010	0.0058			
GN72582-CCV1	Cyanide	0.41	0.010	0.0058	.4	102.5	90-110
GN72582-CCB1	Cyanide	-0.0082	0.010	0.0058			
GN72582-CCV2	Cyanide	0.41	0.010	0.0058	.4	102.5	90-110
GN72582-CCB2	Cyanide	0.0058 U	0.010	0.0058			
GN72582-CCV3	Cyanide	0.41	0.010	0.0058	.4	102.5	90-110
GN72582-CCB3	Cyanide	-0.0078	0.010	0.0058			
GN72582-CCV4	Cyanide	0.41	0.010	0.0058	.4	102.5	90-110
GN72582-CCB4	Cyanide	0.0058 U	0.010	0.0058			
GN72582-CCV5	Cyanide	0.41	0.010	0.0058	.4	102.5	90-110
GN72582-CCB5	Cyanide	-0.0064	0.010	0.0058			
GN72582-CCV6	Cyanide	0.41	0.010	0.0058	.4	102.5	90-110
GN72582-CCB6	Cyanide	-0.0065	0.010	0.0058			
GN72582-CCV7	Cyanide	0.41	0.010	0.0058	.4	102.5	90-110
GN72582-CCB7	Cyanide	0.0058 U	0.010	0.0058			

(!) Outside of QC limits

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Automated Report

Technical Report for

United Technologies Corporation

SECORINI: Zanesville OH, Monthly

182602727

SGS Accutest Job Number: JC56672

Sampling Date: 12/04/17

Report to:

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Indianapolis, IN 46268
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ATTN: Susan Hall

Total number of pages in report: **190**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Sample Summary

United Technologies Corporation

Job No: JC56672

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC56672-1	12/04/17	13:30	EC	12/06/17	AQ	Ground Water	I-1
JC56672-2	12/04/17	13:35	EC	12/06/17	AQ	Ground Water	I-2
JC56672-3	12/04/17	13:40	EC	12/06/17	AQ	Ground Water	I-3
JC56672-4	12/04/17	13:45	EC	12/06/17	AQ	Ground Water	I-4
JC56672-5	12/04/17	13:50	EC	12/06/17	AQ	Influent	INFLUENT
JC56672-6	12/04/17	13:55	EC	12/06/17	AQ	Effluent	EFFLUENT
JC56672-7	12/04/17	14:10	EC	12/06/17	AQ	Ground Water	RIVOUT
JC56672-7A	12/04/17	14:10	EC	12/06/17	AQ	Ground Water	RIVOUT
JC56672-8	12/04/17	14:25	EC	12/06/17	AQ	Ground Water	W-6 OUT
JC56672-8A	12/04/17	14:25	EC	12/06/17	AQ	Ground Water	W-6 OUT
JC56672-9	12/04/17	14:40	EC	12/06/17	AQ	Ground Water	W-12 OUT
JC56672-9A	12/04/17	14:40	EC	12/06/17	AQ	Ground Water	W-12 OUT
JC56672-10	12/04/17	14:40	EC	12/06/17	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	United Technologies Corporation	**Job No**	JC56672
Site:	SECORINI: Zanesville OH, Monthly	**Report Date**	12/15/2017 10:16:08 A

On 12/06/2017, 9 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 2.5 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC56672 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method EPA 624

Matrix: AQ **Batch ID:** VN11228

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC56694-4DUP, JC56694-5MS were used as the QC samples indicated.

Matrix: AQ **Batch ID:** VN11229

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC56766-3MS, JC56766-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Trichloroethene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Metals Analysis By Method EPA 200.7

Matrix: AQ **Batch ID:** MP4623

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC56256-1MS, JC56256-1MSD, JC56256-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Copper, Iron, Silver, Zinc are outside control limits for sample MP4623-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method EPA 245.1

Matrix: AQ **Batch ID:** MP4662

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC56672-7AMS, JC56672-7AMSD were used as the QC samples for metals.

General Chemistry By Method EPA 1664A

Matrix:	AQ	Batch ID:	GP9794

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC56702-1DUP, JC56612-1MS were used as the QC samples for HEM Oil and Grease.
- Matrix Spike Recovery(s) for HEM Oil and Grease are outside control limits. Spike recovery indicates possible matrix interference.
- RPD(s) for Duplicate for HEM Oil and Grease are outside control limits for sample GP9794-D1. RPD acceptable due to low duplicate and sample concentrations.

General Chemistry By Method EPA 335.4/LACHAT

Matrix:	AQ	Batch ID:	GP9806

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC56344-20DUP, JC56344-20MS were used as the QC samples for Cyanide.
- Matrix Spike Recovery(s) for Cyanide are outside control limits. Spike recovery indicates possible matrix interference.

General Chemistry By Method SM2540 D-11

Matrix:	AQ	Batch ID:	GN73566

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC56665-1DUP were used as the QC samples for Solids, Total Suspended.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC56672
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 12/04/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC56672-1	**I-1**					
cis-1,2-Dichloroethene		33.8	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		34.3	1.0		ug/l	EPA 624
Trichloroethene		96.3	1.0		ug/l	EPA 624
JC56672-2	**I-2**					
cis-1,2-Dichloroethene		8.3	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		8.3	1.0		ug/l	EPA 624
Trichloroethene		19.2	1.0		ug/l	EPA 624
JC56672-3	**I-3**					
Trichloroethene		9.6	1.0		ug/l	EPA 624
JC56672-4	**I-4**					
cis-1,2-Dichloroethene		103	1.0		ug/l	EPA 624
trans-1,2-Dichloroethene		1.1	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		104	1.0		ug/l	EPA 624
Trichloroethene		196	10		ug/l	EPA 624
JC56672-5	**INFLUENT**					
cis-1,2-Dichloroethene		21.9	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		21.9	1.0		ug/l	EPA 624
Trichloroethene		62.4	1.0		ug/l	EPA 624
JC56672-6	**EFFLUENT**					
cis-1,2-Dichloroethene		2.3	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		2.3	1.0		ug/l	EPA 624
Trichloroethene		3.2	1.0		ug/l	EPA 624
JC56672-7	**RIVOUT**					
cis-1,2-Dichloroethene		2.0	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		2.0	1.0		ug/l	EPA 624
Trichloroethene		2.4	1.0		ug/l	EPA 624
JC56672-7A	**RIVOUT**					
Iron		2070	100		ug/l	EPA 200.7
Solids, Total Suspended		6.0	4.0		mg/l	SM2540 D-11

Summary of Hits

Job Number: JC56672
Account: United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Collected: 12/04/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC56672-8	**W-6 OUT**					
cis-1,2-Dichloroethene		8.0	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		8.0	1.0		ug/l	EPA 624
Trichloroethene		4.8	1.0		ug/l	EPA 624
JC56672-8A	**W-6 OUT**					
Iron		351	100		ug/l	EPA 200.7
JC56672-9	**W-12 OUT**					
cis-1,2-Dichloroethene		1.7	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		1.7	1.0		ug/l	EPA 624
Trichloroethene		6.1	1.0		ug/l	EPA 624
JC56672-9A	**W-12 OUT**					
Iron		227	100		ug/l	EPA 200.7
JC56672-10	**TRIP BLANK**					

No hits reported in this sample.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID: I-1
Lab Sample ID: JC56672-1
Matrix: AQ - Ground Water
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 12/04/17
Date Received: 12/06/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266463.D	1	12/07/17 20:46	CSF	n/a	n/a	VN11228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	33.8	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	34.3	1.0	ug/l	
79-01-6	Trichloroethene	96.3	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	111%		76-122%
2037-26-5	Toluene-D8 (SUR)	91%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	110%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: I-2
Lab Sample ID: JC56672-2
Matrix: AQ - Ground Water
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 12/04/17
Date Received: 12/06/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266464.D	1	12/07/17 21:15	CSF	n/a	n/a	VN11228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	8.3	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	8.3	1.0	ug/l	
79-01-6	Trichloroethene	19.2	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%		76-122%
2037-26-5	Toluene-D8 (SUR)	95%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	109%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: I-3
Lab Sample ID: JC56672-3
Matrix: AQ - Ground Water
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 12/04/17
Date Received: 12/06/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266465.D	1	12/07/17 21:45	CSF	n/a	n/a	VN11228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	9.6	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%		76-122%
2037-26-5	Toluene-D8 (SUR)	94%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	112%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	I-4		
Lab Sample ID:	JC56672-4	**Date Sampled:**	12/04/17
Matrix:	AQ - Ground Water	**Date Received:**	12/06/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266466.D	1	12/07/17 22:14	CSF	n/a	n/a	VN11228
Run #2	N266480.D	10	12/08/17 11:52	CSF	n/a	n/a	VN11229

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	103	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.1	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	104	1.0	ug/l	
79-01-6	Trichloroethene	196 [a]	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%	111%	76-122%
2037-26-5	Toluene-D8 (SUR)	95%	92%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%	101%	80-120%
1868-53-7	Dibromofluoromethane (S)	109%	113%	80-120%

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: INFLUENT
Lab Sample ID: JC56672-5
Matrix: AQ - Influent
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 12/04/17
Date Received: 12/06/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266467.D	1	12/07/17 22:43	CSF	n/a	n/a	VN11228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	21.9	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	21.9	1.0	ug/l	
79-01-6	Trichloroethene	62.4	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%		76-122%
2037-26-5	Toluene-D8 (SUR)	97%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	104%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: EFFLUENT
Lab Sample ID: JC56672-6
Matrix: AQ - Effluent
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 12/04/17
Date Received: 12/06/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266468.D	1	12/07/17 23:12	CSF	n/a	n/a	VN11228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.3	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.3	1.0	ug/l	
79-01-6	Trichloroethene	3.2	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%		76-122%
2037-26-5	Toluene-D8 (SUR)	95%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	113%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: RIVOUT
Lab Sample ID: JC56672-7
Matrix: AQ - Ground Water
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 12/04/17
Date Received: 12/06/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266469.D	1	12/07/17 23:42	CSF	n/a	n/a	VN11228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	2.0	1.0	ug/l	
79-01-6	Trichloroethene	2.4	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	109%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	96%		80-120%
1868-53-7	Dibromofluoromethane (S)	117%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RIVOUT
Lab Sample ID: JC56672-7A
Matrix: AQ - Ground Water
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 12/04/17
Date Received: 12/06/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Iron	2070	100	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	12/08/17	12/08/17	JA	EPA 245.1 [2]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA43352
(2) Instrument QC Batch: MA43357
(3) Prep QC Batch: MP4623
(4) Prep QC Batch: MP4662

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RIVOUT		
Lab Sample ID:	JC56672-7A	**Date Sampled:**	12/04/17
Matrix:	AQ - Ground Water	**Date Received:**	12/06/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	12/07/17 15:09	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.5	5.5	mg/l	1	12/07/17 11:45	TT	EPA 1664A
Solids, Total Suspended	6.0	4.0	mg/l	1	12/06/17 22:47	SA	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC56672-8	**Date Sampled:**	12/04/17
Matrix:	AQ - Ground Water	**Date Received:**	12/06/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266470.D	1	12/08/17 00:11	CSF	n/a	n/a	VN11228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	8.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	8.0	1.0	ug/l	
79-01-6	Trichloroethene	4.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	111%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	114%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC56672-8A	**Date Sampled:**	12/04/17
Matrix:	AQ - Ground Water	**Date Received:**	12/06/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Iron	351	100	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	12/08/17	12/08/17	JA	EPA 245.1 [2]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA43352
(2) Instrument QC Batch: MA43357
(3) Prep QC Batch: MP4623
(4) Prep QC Batch: MP4662

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-6 OUT		
Lab Sample ID:	JC56672-8A	**Date Sampled:**	12/04/17
Matrix:	AQ - Ground Water	**Date Received:**	12/06/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	12/07/17 15:10	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.3	5.3	mg/l	1	12/07/17 11:45	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	12/06/17 22:47	SA	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC56672-9	**Date Sampled:**	12/04/17
Matrix:	AQ - Ground Water	**Date Received:**	12/06/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville OH, Monthly		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266471.D	1	12/08/17 00:41	CSF	n/a	n/a	VN11228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	1.7	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	1.7	1.0	ug/l	
79-01-6	Trichloroethene	6.1	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	120%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	95%		80-120%
1868-53-7	Dibromofluoromethane (S)	116%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC56672-9A	**Date Sampled:**	12/04/17
Matrix:	AQ - Ground Water	**Date Received:**	12/06/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Copper	< 10	10	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Iron	227	100	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	12/08/17	12/08/17	JA	EPA 245.1 [2]	EPA 245.1 [4]
Silver	< 10	10	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	12/07/17	12/07/17	ND	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA43352
(2) Instrument QC Batch: MA43357
(3) Prep QC Batch: MP4623
(4) Prep QC Batch: MP4662

RL = Reporting Limit

Report of Analysis

Client Sample ID:	W-12 OUT		
Lab Sample ID:	JC56672-9A	**Date Sampled:**	12/04/17
Matrix:	AQ - Ground Water	**Date Received:**	12/06/17
		Percent Solids:	n/a
Project:	SECORINI: Zanesville OH, Monthly		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	12/07/17 15:14	BM	EPA 335.4/LACHAT
HEM Oil and Grease	< 5.2	5.2	mg/l	1	12/07/17 11:45	TT	EPA 1664A
Solids, Total Suspended	< 4.0	4.0	mg/l	1	12/06/17 22:47	SA	SM2540 D-11

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID: TRIP BLANK
Lab Sample ID: JC56672-10
Matrix: AQ - Trip Blank Water
Method: EPA 624
Project: SECORINI: Zanesville OH, Monthly

Date Sampled: 12/04/17
Date Received: 12/06/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266460.D	1	12/07/17 19:18	CSF	n/a	n/a	VN11228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%		80-120%
1868-53-7	Dibromofluoromethane (S)	111%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SGS ACCUTEST

GW WTB

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # 712506934 0773 | Bottle Order Control #
SGS Accutest Quote # | SGS Accutest Job # JC56672

Client / Reporting Information

Company Name: STANTEC
Street Address: 8770 Guion R.D. Suite B
City: Indianapolis State: IN Zip: 46268
Project Contact: Susan.Hall@Stantec.com E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

Project Information

Project Name: UIC - ZANESville monthly Sampling
Street: 2200 Linden Ave.
City: Linden State: ZANESVILLE OH
Project #
Client Purchase Order #
Project Manager: Kelly Names

Billing Information (if different from Report to)

Company Name
Street Address
City State Zip
Attention:

Requested Analysis (see TEST CODE sheet)

VOA TEE, VOA+BOD, MNST DCE, MNST+BOD, MNST
Metals (Ag, Cu, Fe, Mg, Zn)
CN
TSS
O&G 1664
4 VOA @ 12/6/17 CC

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/OI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	LAB USE ONLY
1	I-1		10-4-17	13:30	E.C	GW	3	3								
2	I-2	•		13:35	E.C	GW	4	4								
3	I-3			13:40	E.C	GW	3	3								L35
4	I-4			13:45	E.C	GW	3	3								A38
5	INFLUENT			13:50	E.C	GW	3	3								G18
6	EFFLUENT			13:55	E.C	GW	3	3								G22 T8
7	Rivout			14:10	E.C	GW	9	5	1	1		2				V379
8	W-6			14:25	E.C	GW	9	5	1	1		2				
9	W-12	"	↓	14:40	E.C	GW	9	5	1	1		2				
10	TRIP Blank					TB	2	2								

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [x] 5 Day RUSH
- [ ] 3 Day RUSH
- [x] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Approved By (SGS Accutest PM): / Date:

INITIAL ASESSMENT JB 12/6

LABEL VERIFICATION

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULL T1 (Level 3+4)
- [x] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

RUSH VOC's
Rivout PH = 8.22
W-6 PH = 7.75
W-12 PH = 7.82
Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	ERIC cash	12-4-17 15:00	FEDEX	FEDEX	12/6/17 945	
2						
3						
4						
5						

Custody Seal # 662 [x] Intact [ ] Not intact | Preserved where applicable | On Ice | Cooler Temp. 1.6 0C

Form:SM088-01CRev.Date:9/13/16

SGS Accutest Sample Receipt Summary

Job Number: JC56672 **Client:** _____ **Project:** _____

Date / Time Received: 12/6/2017 9:45:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.6);

Cooler Temps (Corrected) °C: Cooler 1: (2.5);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC56672: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56672

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56672-1	Collected: 04-DEC-17 13:30 By: EC		Received: 06-DEC-17 By: DG			
I-1						
JC56672-1	EPA 624	07-DEC-17 20:46	CSF			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC56672-2	Collected: 04-DEC-17 13:35 By: EC		Received: 06-DEC-17 By: DG			
I-2						
JC56672-2	EPA 624	07-DEC-17 21:15	CSF			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC56672-3	Collected: 04-DEC-17 13:40 By: EC		Received: 06-DEC-17 By: DG			
I-3						
JC56672-3	EPA 624	07-DEC-17 21:45	CSF			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC56672-4	Collected: 04-DEC-17 13:45 By: EC		Received: 06-DEC-17 By: DG			
I-4						
JC56672-4	EPA 624	07-DEC-17 22:14	CSF			V624DCE, VMS+ 12DCE, VMS+ T12DCE
JC56672-4	EPA 624	08-DEC-17 11:52	CSF			VMS+ TCE
JC56672-5	Collected: 04-DEC-17 13:50 By: EC		Received: 06-DEC-17 By: DG			
INFLUENT						
JC56672-5	EPA 624	07-DEC-17 22:43	CSF			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC56672-6	Collected: 04-DEC-17 13:55 By: EC		Received: 06-DEC-17 By: DG			
EFFLUENT						
JC56672-6	EPA 624	07-DEC-17 23:12	CSF			V624DCE, VMS+ 12DCE, VMS+ T12DCE, VMS+ TCE
JC56672-7	Collected: 04-DEC-17 14:10 By: EC		Received: 06-DEC-17 By: DG			
RIVOUT						

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56672

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56672-7	EPA 624	07-DEC-17 23:42	CSF			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC56672-8 W-6 OUT	Collected: 04-DEC-17 14:25 By: EC		Received: 06-DEC-17 By: DG			
JC56672-8	EPA 624	08-DEC-17 00:11	CSF			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC56672-9 W-12 OUT	Collected: 04-DEC-17 14:40 By: EC		Received: 06-DEC-17 By: DG			
JC56672-9	EPA 624	08-DEC-17 00:41	CSF			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC56672-10 TRIP BLANK	Collected: 04-DEC-17 14:40 By: EC		Received: 06-DEC-17 By: DG			
JC56672-10	EPA 624	07-DEC-17 19:18	CSF			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE
JC56672-7A RIVOUT	Collected: 04-DEC-17 14:10 By: EC		Received: 06-DEC-17 By: DG			
JC56672-7A	SM2540 D-11	06-DEC-17 22:47	SA			TSS
JC56672-7A	EPA 1664A	07-DEC-17 11:45	TT	07-DEC-17	TT	OG1664
JC56672-7A	EPA 335.4/LACHAT	07-DEC-17 15:09	BM	07-DEC-17	TG	CN
JC56672-7A	EPA 200.7	07-DEC-17 17:07	ND	07-DEC-17	DP	AG,CU,FE,ZN
JC56672-7A	EPA 245.1	08-DEC-17 09:58	JA	08-DEC-17	JA	HG
JC56672-8A W-6 OUT	Collected: 04-DEC-17 14:25 By: EC		Received: 06-DEC-17 By: DG			
JC56672-8A	SM2540 D-11	06-DEC-17 22:47	SA			TSS
JC56672-8A	EPA 1664A	07-DEC-17 11:45	TT	07-DEC-17	TT	OG1664
JC56672-8A	EPA 335.4/LACHAT	07-DEC-17 15:10	BM	07-DEC-17	TG	CN
JC56672-8A	EPA 200.7	07-DEC-17 17:10	ND	07-DEC-17	DP	AG,CU,FE,ZN
JC56672-8A	EPA 245.1	08-DEC-17 10:00	JA	08-DEC-17	JA	HG

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56672

SECORINI: Zanesville OH, Monthly
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56672-9A	Collected: 04-DEC-17 14:40 By: EC W-12 OUT		Received: 06-DEC-17 By: DG			
JC56672-9A	SM2540 D-11	06-DEC-17 22:47	SA			TSS
JC56672-9A	EPA 1664A	07-DEC-17 11:45	TT	07-DEC-17	TT	OG1664
JC56672-9A	EPA 335.4/LACHAT	07-DEC-17 15:14	BM	07-DEC-17	TG	CN
JC56672-9A	EPA 200.7	07-DEC-17 17:13	ND	07-DEC-17	DP	AG,CU,FE,ZN
JC56672-9A	EPA 245.1	08-DEC-17 10:02	JA	08-DEC-17	JA	HG

SGS Accutest Internal Chain of Custody

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 12/06/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56672-1.3	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-1.3	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-1.3	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument
JC56672-1.3	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage
JC56672-2.3	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-2.3	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-2.3	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument
JC56672-2.3	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage
JC56672-3.2	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-3.2	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-3.2	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument
JC56672-3.2	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage
JC56672-4.1	Secured Storage	Chelsea San Filippo	12/08/17 16:53	Retrieve from Storage
JC56672-4.1	Chelsea San Filippo	Secured Storage	12/11/17 08:07	Return to Storage
JC56672-4.3	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-4.3	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-4.3	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument
JC56672-4.3	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage
JC56672-5.3	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-5.3	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-5.3	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument
JC56672-5.3	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage
JC56672-6.3	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-6.3	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-6.3	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument
JC56672-6.3	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage
JC56672-7.2	Secured Storage	Sahara Feliciano	12/06/17 17:20	Retrieve from Storage
JC56672-7.2	Sahara Feliciano	Secured Staging Area	12/06/17 17:20	Return to Storage
JC56672-7.2	Secured Staging Area	Tyrus Takacs	12/07/17 08:49	Retrieve from Storage
JC56672-7.2	Tyrus Takacs		12/07/17 11:21	Depleted
JC56672-7.3	Secured Storage	Jennifer Voitovitch	12/06/17 17:50	Retrieve from Storage
JC56672-7.3	Jennifer Voitovitch	Secured Staging Area	12/06/17 17:50	Return to Storage
JC56672-7.3	Secured Staging Area	Deval Patel	12/07/17 09:56	Retrieve from Storage
JC56672-7.3	Deval Patel	Secured Storage	12/07/17 10:57	Return to Storage
JC56672-7.3	Secured Storage	Jessica Adametz	12/08/17 06:52	Retrieve from Storage
JC56672-7.3	Jessica Adametz	Deval Patel	12/08/17 09:58	Custody Transfer

SGS Accutest Internal Chain of Custody

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 12/06/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56672-7.3	Deval Patel	Secured Storage	12/08/17 11:04	Return to Storage
JC56672-7.3.1	Deval Patel	Metals Digestion	12/07/17 10:52	Digestate from JC56672-7.3
JC56672-7.3.1	Metals Digestion	Deval Patel	12/07/17 10:52	Digestate from JC56672-7.3
JC56672-7.3.1	Deval Patel	Metals Digestate Storage	12/07/17 10:52	Return to Storage
JC56672-7.4	Secured Storage	Todd Shoemaker	12/06/17 14:42	Retrieve from Storage
JC56672-7.4	Todd Shoemaker	Secured Staging Area	12/06/17 14:43	Return to Storage
JC56672-7.4	Secured Staging Area	Sarah Asraf	12/06/17 17:00	Retrieve from Storage
JC56672-7.4	Sarah Asraf		12/06/17 23:59	Depleted
JC56672-7.6	Secured Storage	Jennifer Voitovitch	12/06/17 17:29	Retrieve from Storage
JC56672-7.6	Jennifer Voitovitch	Secured Staging Area	12/06/17 17:30	Return to Storage
JC56672-7.6	Secured Staging Area	Thomas Gabriel	12/07/17 08:15	Retrieve from Storage
JC56672-7.6	Thomas Gabriel	Secured Storage	12/07/17 16:28	Return to Storage
JC56672-7.9	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-7.9	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-7.9	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument
JC56672-7.9	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage
JC56672-8.1	Secured Storage	Sahara Feliciano	12/06/17 17:20	Retrieve from Storage
JC56672-8.1	Sahara Feliciano	Secured Staging Area	12/06/17 17:20	Return to Storage
JC56672-8.1	Secured Staging Area	Tyrus Takacs	12/07/17 08:49	Retrieve from Storage
JC56672-8.1	Tyrus Takacs		12/07/17 11:21	Depleted
JC56672-8.3	Secured Storage	Jennifer Voitovitch	12/06/17 17:50	Retrieve from Storage
JC56672-8.3	Jennifer Voitovitch	Secured Staging Area	12/06/17 17:50	Return to Storage
JC56672-8.3	Secured Staging Area	Deval Patel	12/07/17 09:56	Retrieve from Storage
JC56672-8.3	Deval Patel	Secured Storage	12/07/17 10:57	Return to Storage
JC56672-8.3	Secured Storage	Jessica Adametz	12/08/17 06:52	Retrieve from Storage
JC56672-8.3	Jessica Adametz	Deval Patel	12/08/17 09:58	Custody Transfer
JC56672-8.3	Deval Patel	Secured Storage	12/08/17 11:04	Return to Storage
JC56672-8.3.1	Deval Patel	Metals Digestion	12/07/17 10:52	Digestate from JC56672-8.3
JC56672-8.3.1	Metals Digestion	Deval Patel	12/07/17 10:52	Digestate from JC56672-8.3
JC56672-8.3.1	Deval Patel	Metals Digestate Storage	12/07/17 10:52	Return to Storage
JC56672-8.5	Secured Storage	Todd Shoemaker	12/06/17 14:42	Retrieve from Storage
JC56672-8.5	Todd Shoemaker	Secured Staging Area	12/06/17 14:43	Return to Storage
JC56672-8.5	Secured Staging Area	Sarah Asraf	12/06/17 17:00	Retrieve from Storage
JC56672-8.5	Sarah Asraf		12/06/17 23:59	Depleted
JC56672-8.6	Secured Storage	Jennifer Voitovitch	12/06/17 17:29	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 12/06/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56672-8.6	Jennifer Voitovitch	Secured Staging Area	12/06/17 17:30	Return to Storage
JC56672-8.6	Secured Staging Area	Thomas Gabriel	12/07/17 08:15	Retrieve from Storage
JC56672-8.6	Thomas Gabriel	Secured Storage	12/07/17 16:28	Return to Storage
JC56672-8.8	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-8.8	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-8.8	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument
JC56672-8.8	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage
JC56672-9.2	Secured Storage	Sahara Feliciano	12/06/17 17:20	Retrieve from Storage
JC56672-9.2	Sahara Feliciano	Secured Staging Area	12/06/17 17:20	Return to Storage
JC56672-9.2	Secured Staging Area	Tyrus Takacs	12/07/17 08:49	Retrieve from Storage
JC56672-9.2	Tyrus Takacs		12/07/17 11:21	Depleted
JC56672-9.3	Secured Storage	Jennifer Voitovitch	12/06/17 17:50	Retrieve from Storage
JC56672-9.3	Jennifer Voitovitch	Secured Staging Area	12/06/17 17:50	Return to Storage
JC56672-9.3	Secured Staging Area	Deval Patel	12/07/17 09:56	Retrieve from Storage
JC56672-9.3	Deval Patel	Secured Storage	12/07/17 10:57	Return to Storage
JC56672-9.3	Secured Storage	Jessica Adametz	12/08/17 06:52	Retrieve from Storage
JC56672-9.3	Jessica Adametz	Deval Patel	12/08/17 09:58	Custody Transfer
JC56672-9.3	Deval Patel	Secured Storage	12/08/17 11:04	Return to Storage
JC56672-9.3.1	Deval Patel	Metals Digestion	12/07/17 10:52	Digestate from JC56672-9.3
JC56672-9.3.1	Metals Digestion	Deval Patel	12/07/17 10:52	Digestate from JC56672-9.3
JC56672-9.3.1	Deval Patel	Metals Digestate Storage	12/07/17 10:52	Return to Storage
JC56672-9.4	Secured Storage	Todd Shoemaker	12/06/17 14:42	Retrieve from Storage
JC56672-9.4	Todd Shoemaker	Secured Staging Area	12/06/17 14:43	Return to Storage
JC56672-9.4	Secured Staging Area	Sarah Asraf	12/06/17 17:00	Retrieve from Storage
JC56672-9.4	Sarah Asraf		12/06/17 23:59	Depleted
JC56672-9.6	Secured Storage	Jennifer Voitovitch	12/06/17 17:29	Retrieve from Storage
JC56672-9.6	Jennifer Voitovitch	Secured Staging Area	12/06/17 17:30	Return to Storage
JC56672-9.6	Secured Staging Area	Thomas Gabriel	12/07/17 08:15	Retrieve from Storage
JC56672-9.6	Thomas Gabriel	Secured Storage	12/07/17 16:28	Return to Storage
JC56672-9.7	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-9.7	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-9.7	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument
JC56672-9.7	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage
JC56672-10.2	Secured Storage	Chelsea San Filippo	12/07/17 16:09	Retrieve from Storage
JC56672-10.2	Chelsea San Filippo	GCMSN	12/07/17 16:09	Load on Instrument
JC56672-10.2	GCMSN	Chelsea San Filippo	12/08/17 10:29	Unload from Instrument

SGS Accutest Internal Chain of Custody

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly
Received: 12/06/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56672-10.2	Chelsea San Filippo	Secured Storage	12/08/17 10:29	Return to Storage

MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11228-MB	N266444.D	1	12/07/17	CSF	n/a	n/a	VN11228

The QC reported here applies to the following samples: **Method:** EPA 624

JC56672-1, JC56672-2, JC56672-3, JC56672-4, JC56672-5, JC56672-6, JC56672-7, JC56672-8, JC56672-9, JC56672-10

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	117%	76-122%
2037-26-5	Toluene-D8 (SUR)	94%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%	80-120%
1868-53-7	Dibromofluoromethane (S)	119%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.40	200	ug/l	J
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11229-MB	N266476.D	1	12/08/17	CSF	n/a	n/a	VN11229

The QC reported here applies to the following samples: **Method:** EPA 624

JC56672-4

CAS No.	Compound	Result	RL	Units	Q
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	113%	76-122%
2037-26-5	Toluene-D8 (SUR)	94%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%	80-120%
1868-53-7	Dibromofluoromethane (S)	112%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.40	210	ug/l	J
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11229-BS	N266477.D	1	12/08/17	CSF	n/a	n/a	VN11229

The QC reported here applies to the following samples: **Method:** EPA 624

JC56672-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
79-01-6	Trichloroethene	20	19.2	96	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	105%	76-122%
2037-26-5	Toluene-D8 (SUR)	97%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	106%	80-120%
1868-53-7	Dibromofluoromethane (S)	106%	80-120%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11228-BS	N266445.D	1	12/07/17	CSF	n/a	n/a	VN11228
VN11228-BSD	N266457.D	1	12/07/17	CSF	n/a	n/a	VN11228

The QC reported here applies to the following samples: **Method:** EPA 624

JC56672-1, JC56672-2, JC56672-3, JC56672-4, JC56672-5, JC56672-6, JC56672-7, JC56672-8, JC56672-9, JC56672-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	20	19.5	98	19.1	96	2	72-115/10
156-60-5	trans-1,2-Dichloroethene	20	19.2	96	19.2	96	0	70-121/10
540-59-0	1,2-Dichloroethene (total)	40	38.7	97	38.3	96	1	72-117/10
79-01-6	Trichloroethene	20	19.7	99	20.2	101	3	78-117/10

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%	109%	76-122%
2037-26-5	Toluene-D8 (SUR)	97%	98%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%	102%	80-120%
1868-53-7	Dibromofluoromethane (S)	104%	107%	80-120%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC56694-5MS	N266456.D	1	12/07/17	CSF	n/a	n/a	VN11228
JC56694-5 [a]	N266451.D	1	12/07/17	CSF	n/a	n/a	VN11228

The QC reported here applies to the following samples: **Method:** EPA 624

JC56672-1, JC56672-2, JC56672-3, JC56672-4, JC56672-5, JC56672-6, JC56672-7, JC56672-8, JC56672-9, JC56672-10

CAS No.	Compound	JC56694-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
156-59-2	cis-1,2-Dichloroethene	ND		20	22.9	115	50-134
156-60-5	trans-1,2-Dichloroethene	ND		20	23.7	119	63-129
540-59-0	1,2-Dichloroethene (total)	ND		40	46.6	117	48-138
79-01-6	Trichloroethene	ND		20	24.4	122	46-145

CAS No.	Surrogate Recoveries	MS	JC56694-5	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	109%	115%	76-122%
2037-26-5	Toluene-D8 (SUR)	99%	91%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%	98%	80-120%
1868-53-7	Dibromofluoromethane (S)	107%	118%	80-120%

(a) (pH= 6) Sample is not acid preserved per method/client criteria. Sample analyzed within 3 days holding time as required for acrolein and acrylonitrile. Other compounds within 7 days as required by the method.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC56766-3MS	N266491.D	5	12/08/17	CSF	n/a	n/a	VN11229
JC56766-3MSD	N266492.D	5	12/08/17	CSF	n/a	n/a	VN11229
JC56766-3	N266494.D	5	12/08/17	CSF	n/a	n/a	VN11229

The QC reported here applies to the following samples: **Method:** EPA 624

JC56672-4

CAS No.	Compound	JC56766-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
79-01-6	Trichloroethene	1000	E	100	945	-55* [a]	100	907	-93* [a]	4	46-145/12

CAS No.	Surrogate Recoveries	MS	MSD	JC56766-3	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%	111%	116%	76-122%
2037-26-5	Toluene-D8 (SUR)	98%	97%	95%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	103%	100%	80-120%
1868-53-7	Dibromofluoromethane (S)	107%	109%	113%	80-120%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC56694-4DUP	N266459.D	1	12/07/17	CSF	n/a	n/a	VN11228
JC56694-4 [a]	N266450.D	1	12/07/17	CSF	n/a	n/a	VN11228

The QC reported here applies to the following samples: **Method:** EPA 624

JC56672-1, JC56672-2, JC56672-3, JC56672-4, JC56672-5, JC56672-6, JC56672-7, JC56672-8, JC56672-9, JC56672-10

CAS No.	Compound	JC56694-4 ug/l	Q	DUP ug/l	Q	RPD	Limits
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	22
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	14
540-59-0	1,2-Dichloroethene (total)	ND		ND		nc	22
79-01-6	Trichloroethene	ND		ND		nc	18

CAS No.	Surrogate Recoveries	DUP	JC56694-4	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%	116%	76-122%
2037-26-5	Toluene-D8 (SUR)	94%	93%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%	100%	80-120%
1868-53-7	Dibromofluoromethane (S)	111%	118%	80-120%

(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 3 days holding time as required for acrolein and acrylonitrile. Other compounds within 7 days as required by the method.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VN11221-BFB	**Injection Date:**	11/30/17
Lab File ID:	N266321.D	**Injection Time:**	18:21
Instrument ID:	GCMSN		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	14190	15.7		Pass
75	30.0 - 60.0% of mass 95	45477	50.2		Pass
95	Base peak, 100% relative abundance	90506	100.0		Pass
96	5.0 - 9.0% of mass 95	6478	7.16		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	82157	90.8		Pass
175	5.0 - 9.0% of mass 174	6550	7.24	(7.97) [a]	Pass
176	95.0 - 101.0% of mass 174	79565	87.9	(96.8) [a]	Pass
177	5.0 - 9.0% of mass 176	5248	5.80	(6.60) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11221-IC11221	N266322.D	11/30/17	19:36	01:15	Initial cal 0.5
VN11221-IC11221	N266323.D	11/30/17	20:10	01:49	Initial cal 0.2
VN11221-IC11221	N266324.D	11/30/17	20:39	02:18	Initial cal 1
VN11221-IC11221	N266325.D	11/30/17	21:08	02:47	Initial cal 2
VN11221-IC11221	N266326.D	11/30/17	21:38	03:17	Initial cal 5
VN11221-ICC11221	N266327.D	11/30/17	22:07	03:46	Initial cal 20
VN11221-IC11221	N266328.D	11/30/17	22:36	04:15	Initial cal 50
VN11221-IC11221	N266329.D	11/30/17	23:06	04:45	Initial cal 100
VN11221-IC11221	N266330.D	11/30/17	23:36	05:15	Initial cal 200
VN11221-ICV11221	N266333.D	12/01/17	01:04	06:43	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VN11223-BFB	**Injection Date:**	12/04/17
Lab File ID:	N266343.D	**Injection Time:**	14:36
Instrument ID:	GCMSN		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	14951	17.1		Pass
75	30.0 - 60.0% of mass 95	44850	51.2		Pass
95	Base peak, 100% relative abundance	87661	100.0		Pass
96	5.0 - 9.0% of mass 95	5856	6.68		Pass
173	Less than 2.0% of mass 174	539	0.61	(0.69) [a]	Pass
174	50.0 - 120.0% of mass 95	78381	89.4		Pass
175	5.0 - 9.0% of mass 174	6875	7.84	(8.77) [a]	Pass
176	95.0 - 101.0% of mass 174	77560	88.5	(99.0) [a]	Pass
177	5.0 - 9.0% of mass 176	5162	5.89	(6.66) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11223-IC11221	N266344.D	12/04/17	16:53	02:17	Initial cal 0.5
VN11223-IC11221	N266345.D	12/04/17	17:22	02:46	Initial cal 1
VN11223-IC11221	N266346.D	12/04/17	17:51	03:15	Initial cal 2
VN11223-IC11221	N266347.D	12/04/17	18:20	03:44	Initial cal 5
VN11223-IC11221	N266348.D	12/04/17	18:49	04:13	Initial cal 20
VN11223-IC11221	N266349.D	12/04/17	19:19	04:43	Initial cal 50
VN11223-IC11221	N266350.D	12/04/17	19:48	05:12	Initial cal 100
VN11223-IC11221	N266351.D	12/04/17	20:17	05:41	Initial cal 200
VN11223-ICV11221	N266354.D	12/04/17	21:45	07:09	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VN11228-BFB	**Injection Date:**	12/07/17
Lab File ID:	N266442.D	**Injection Time:**	09:44
Instrument ID:	GCMSN		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	11353	17.2		Pass
75	30.0 - 60.0% of mass 95	32712	49.6		Pass
95	Base peak, 100% relative abundance	65930	100.0		Pass
96	5.0 - 9.0% of mass 95	3654	5.54		Pass
173	Less than 2.0% of mass 174	285	0.43	(0.47) [a]	Pass
174	50.0 - 120.0% of mass 95	60541	91.8		Pass
175	5.0 - 9.0% of mass 174	4681	7.10	(7.73) [a]	Pass
176	95.0 - 101.0% of mass 174	59530	90.3	(98.3) [a]	Pass
177	5.0 - 9.0% of mass 176	3826	5.80	(6.43) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11228-CC11221	N266443.D	12/07/17	10:22	00:38	Continuing cal 20
VN11228-MB	N266444.D	12/07/17	11:06	01:22	Method Blank
VN11228-BS	N266445.D	12/07/17	11:35	01:51	Blank Spike
JC56694-8MS	N266446.D	12/07/17	12:05	02:21	Matrix Spike
ZZZZZZ	N266447.D	12/07/17	12:34	02:50	(unrelated sample)
JC56694-7DUP	N266448.D	12/07/17	13:04	03:20	Duplicate
ZZZZZZ	N266449.D	12/07/17	13:33	03:49	(unrelated sample)
JC56694-4	N266450.D	12/07/17	14:03	04:19	(used for QC only; not part of job JC56672)
JC56694-5	N266451.D	12/07/17	14:32	04:48	(used for QC only; not part of job JC56672)
ZZZZZZ	N266452.D	12/07/17	15:01	05:17	(unrelated sample)
ZZZZZZ	N266453.D	12/07/17	15:31	05:47	(unrelated sample)
ZZZZZZ	N266454.D	12/07/17	16:21	06:37	(unrelated sample)
ZZZZZZ	N266455.D	12/07/17	16:51	07:07	(unrelated sample)
JC56694-5MS	N266456.D	12/07/17	17:20	07:36	Matrix Spike
VN11228-BSD	N266457.D	12/07/17	17:49	08:05	Blank Spike Duplicate
JC56694-4DUP	N266459.D	12/07/17	18:48	09:04	Duplicate
JC56672-10	N266460.D	12/07/17	19:18	09:34	TRIP BLANK
ZZZZZZ	N266461.D	12/07/17	19:47	10:03	(unrelated sample)
ZZZZZZ	N266462.D	12/07/17	20:17	10:33	(unrelated sample)
JC56672-1	N266463.D	12/07/17	20:46	11:02	I-1
JC56672-2	N266464.D	12/07/17	21:15	11:31	I-2
JC56672-3	N266465.D	12/07/17	21:45	12:01	I-3
JC56672-4	N266466.D	12/07/17	22:14	12:30	I-4
JC56672-5	N266467.D	12/07/17	22:43	12:59	INFLUENT

Instrument Performance Check (BFB)

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VN11228-BFB	**Injection Date:**	12/07/17
Lab File ID:	N266442.D	**Injection Time:**	09:44
Instrument ID:	GCMSN		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JC56672-6	N266468.D	12/07/17	23:12	13:28	EFFLUENT
JC56672-7	N266469.D	12/07/17	23:42	13:58	RIVOUT
JC56672-8	N266470.D	12/08/17	00:11	14:27	W-6 OUT
JC56672-9	N266471.D	12/08/17	00:41	14:57	W-12 OUT

Instrument Performance Check (BFB)

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11229-BFB
Lab File ID: N266473.D
Instrument ID: GCMSN
Injection Date: 12/08/17
Injection Time: 07:11

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	10798	16.6		Pass
75	30.0 - 60.0% of mass 95	31466	48.5		Pass
95	Base peak, 100% relative abundance	64917	100.0		Pass
96	5.0 - 9.0% of mass 95	4039	6.22		Pass
173	Less than 2.0% of mass 174	286	0.44	(0.49) [a]	Pass
174	50.0 - 120.0% of mass 95	58389	89.9		Pass
175	5.0 - 9.0% of mass 174	4592	7.07	(7.86) [a]	Pass
176	95.0 - 101.0% of mass 174	56320	86.8	(96.5) [a]	Pass
177	5.0 - 9.0% of mass 176	3745	5.77	(6.65) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11229-CC11221	N266475.D	12/08/17	08:53	01:42	Continuing cal 20
VN11229-MB	N266476.D	12/08/17	09:38	02:27	Method Blank
VN11229-BS	N266477.D	12/08/17	10:14	03:03	Blank Spike
ZZZZZZ	N266478.D	12/08/17	10:53	03:42	(unrelated sample)
ZZZZZZ	N266479.D	12/08/17	11:23	04:12	(unrelated sample)
JC56672-4	N266480.D	12/08/17	11:52	04:41	I-4
ZZZZZZ	N266481.D	12/08/17	12:29	05:18	(unrelated sample)
ZZZZZZ	N266482.D	12/08/17	12:58	05:47	(unrelated sample)
ZZZZZZ	N266483.D	12/08/17	13:28	06:17	(unrelated sample)
ZZZZZZ	N266483A.D	12/08/17	13:57	06:46	(unrelated sample)
ZZZZZZ	N266484.D	12/08/17	14:27	07:16	(unrelated sample)
ZZZZZZ	N266485.D	12/08/17	14:56	07:45	(unrelated sample)
ZZZZZZ	N266486.D	12/08/17	15:26	08:15	(unrelated sample)
ZZZZZZ	N266487.D	12/08/17	15:55	08:44	(unrelated sample)
ZZZZZZ	N266488.D	12/08/17	16:25	09:14	(unrelated sample)
ZZZZZZ	N266489A.D	12/08/17	17:08	09:57	(unrelated sample)
ZZZZZZ	N266489.D	12/08/17	17:37	10:26	(unrelated sample)
ZZZZZZ	N266490.D	12/08/17	18:07	10:56	(unrelated sample)
JC56766-3MS	N266491.D	12/08/17	18:36	11:25	Matrix Spike
JC56766-3MSD	N266492.D	12/08/17	19:06	11:55	Matrix Spike Duplicate
JC56766-3	N266494.D	12/08/17	20:05	12:54	(used for QC only; not part of job JC56672)
ZZZZZZ	N266495.D	12/08/17	20:34	13:23	(unrelated sample)
ZZZZZZ	N266496.D	12/08/17	21:04	13:53	(unrelated sample)
ZZZZZZ	N266498.D	12/08/17	22:03	14:52	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample:	VN11229-BFB	**Injection Date:**	12/08/17
Lab File ID:	N266473.D	**Injection Time:**	07:11
Instrument ID:	GCMSN		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	N266499.D	12/08/17	22:43	15:32	(unrelated sample)
ZZZZZZ	N266500.D	12/08/17	23:13	16:02	(unrelated sample)
VN11230-MB	N266502.D	12/09/17	00:12	17:01	Method Blank
VN11230-BS	N266503.D	12/09/17	00:41	17:30	Blank Spike
JC56766-4MS	N266504.D	12/09/17	01:11	18:00	Matrix Spike
JC56766-4MSD	N266505.D	12/09/17	01:40	18:29	Matrix Spike Duplicate
ZZZZZZ	N266507.D	12/09/17	02:39	19:28	(unrelated sample)
JC56766-4	N266508.D	12/09/17	03:09	19:58	(used for QC only; not part of job JC56672)
ZZZZZZ	N266509.D	12/09/17	03:38	20:27	(unrelated sample)
ZZZZZZ	N266510.D	12/09/17	04:08	20:57	(unrelated sample)
ZZZZZZ	N266511.D	12/09/17	04:37	21:26	(unrelated sample)
ZZZZZZ	N266512.D	12/09/17	05:07	21:56	(unrelated sample)
ZZZZZZ	N266514.D	12/09/17	06:05	22:54	(unrelated sample)
ZZZZZZ	N266515.D	12/09/17	06:35	23:24	(unrelated sample)

Internal Standard Area Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std:	VN11228-CC11221	**Injection Date:**	12/07/17
Lab File ID:	N266443.D	**Injection Time:**	10:22
Instrument ID:	GCMSN	**Method:**	EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	106281	7.72	197174	10.06	257722	10.99	181134	16.76	249537	14.26
Upper Limit [a]	212562	8.22	394348	10.56	515444	11.49	362268	17.26	499074	14.76
Lower Limit [b]	53141	7.22	98587	9.56	128861	10.49	90567	16.26	124769	13.76

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VN11228-MB	102219	7.72	170040	10.05	228094	10.99	163093	16.76	225380	14.26
VN11228-BS	103603	7.71	197008	10.05	265229	10.98	190342	16.76	253550	14.26
JC56694-8MS	101568	7.70	194822	10.05	269455	10.98	190709	16.76	257315	14.26
ZZZZZZ	110943	7.72	187605	10.05	251018	10.98	177818	16.75	232589	14.25
JC56694-7DUP	104291	7.72	178281	10.05	243575	10.98	163509	16.76	223888	14.26
ZZZZZZ	101643	7.72	188404	10.05	239196	10.98	167580	16.76	227355	14.25
JC56694-4	104541	7.71	167965	10.05	232037	10.98	162190	16.75	225503	14.25
JC56694-5	112280	7.72	172782	10.05	233815	10.98	162317	16.76	223843	14.26
ZZZZZZ	98629	7.70	167494	10.05	226880	10.98	156864	16.75	217787	14.25
ZZZZZZ	99863	7.72	164298	10.05	219429	10.98	158650	16.75	207872	14.25
ZZZZZZ	102936	7.75	169497	10.06	223311	10.99	159572	16.76	214359	14.26
ZZZZZZ	130107	7.71	182214	10.05	232654	10.98	175971	16.76	237945	14.25
JC56694-5MS	114288	7.71	190687	10.05	258299	10.98	186131	16.76	249737	14.26
VN11228-BSD	120087	7.71	194746	10.05	262728	10.99	184732	16.75	248532	14.25
JC56694-4DUP	111648	7.71	177493	10.05	238801	10.98	165876	16.75	229111	14.25
JC56672-10	108291	7.73	178273	10.06	241896	10.98	153541	16.76	222044	14.26
ZZZZZZ	152013	7.71	178807	10.05	239458	10.98	167835	16.76	224132	14.26
ZZZZZZ	155279	7.73	180254	10.05	240076	10.98	166720	16.75	226900	14.25
JC56672-1	114168	7.71	183625	10.05	238121	10.98	168488	16.76	228588	14.26
JC56672-2	105374	7.72	166362	10.05	227193	10.98	159050	16.75	215574	14.25
JC56672-3	107072	7.71	165996	10.05	229429	10.98	161092	16.75	219154	14.25
JC56672-4	106724	7.73	185417	10.05	241292	10.98	168383	16.75	225649	14.25
JC56672-5	101619	7.70	179780	10.05	227336	10.98	159514	16.75	215169	14.25
JC56672-6	95935	7.74	166518	10.05	228112	10.98	161286	16.75	216605	14.25
JC56672-7	91094	7.70	161827	10.05	229919	10.98	164368	16.76	215975	14.26
JC56672-8	88819	7.71	162816	10.05	220325	10.98	153661	16.76	209273	14.26
JC56672-9	91282	7.71	155548	10.05	211571	10.98	155191	16.75	207094	14.25

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

Internal Standard Area Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std:	VN11228-CC11221	**Injection Date:**	12/07/17
Lab File ID:	N266443.D	**Injection Time:**	10:22
Instrument ID:	GCMSN	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT	IS 5 AREA	IS 5 RT

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std: VN11229-CC11221 **Injection Date:** 12/08/17
Lab File ID: N266475.D **Injection Time:** 08:53
Instrument ID: GCMSN **Method:** EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	106121	7.73	192049	10.06	254527	10.99	183258	16.76	249593	14.26
Upper Limit [a]	212242	8.23	384098	10.56	509054	11.49	366516	17.26	499186	14.76
Lower Limit [b]	53061	7.23	96025	9.56	127264	10.49	91629	16.26	124797	13.76

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VN11229-MB	105648	7.74	163405	10.05	222424	10.98	156762	16.76	213933	14.26
VN11229-BS	106823	7.71	183573	10.05	254885	10.99	169537	16.75	239424	14.25
ZZZZZZ	106801	7.70	169366	10.05	233968	10.98	156500	16.76	220933	14.26
ZZZZZZ	109862	7.72	175782	10.05	262928	10.98	162686	16.75	227566	14.25
JC56672-4	106195	7.71	171522	10.05	233905	10.98	160457	16.75	224898	14.25
ZZZZZZ	111903	7.72	180533	10.05	236004	10.99	152136	16.76	225279	14.26
ZZZZZZ	100178	7.71	162893	10.05	239530	10.98	156191	16.75	219998	14.25
ZZZZZZ	99078	7.71	170714	10.05	225743	10.99	155537	16.75	218323	14.25
ZZZZZZ	97597	7.70	164404	10.05	226138	10.98	153887	16.75	214305	14.25
ZZZZZZ	103075	7.72	165307	10.05	224686	10.98	146445	16.75	214295	14.25
ZZZZZZ	99090	7.71	166422	10.05	217162	10.98	151671	16.76	208626	14.26
ZZZZZZ	96684	7.70	160755	10.05	218779	10.98	147076	16.75	207456	14.25
ZZZZZZ	99142	7.71	163947	10.05	231751	10.98	151537	16.75	218136	14.25
ZZZZZZ	93984	7.71	158853	10.05	219188	10.98	159636	16.75	207293	14.25
ZZZZZZ	94523	7.71	159497	10.05	214002	10.99	144748	16.76	210778	14.25
ZZZZZZ	92665	7.71	151580	10.05	204863	10.98	144116	16.76	197130	14.26
ZZZZZZ	97631	7.72	155957	10.05	211935	10.98	151475	16.75	208647	14.25
JC56766-3MS	102286	7.72	173505	10.05	230314	10.98	166446	16.75	223581	14.25
JC56766-3MSD	117365	7.73	190333	10.05	256843	10.99	180234	16.75	250976	14.25
JC56766-3	105777	7.71	167632	10.05	230836	10.98	157231	16.76	219627	14.25
ZZZZZZ	126085	7.73	166699	10.05	221797	10.98	155938	16.75	212086	14.25
ZZZZZZ	155501	7.72	177651	10.05	231031	10.98	153674	16.75	217261	14.25
ZZZZZZ	115721	7.70	166669	10.05	226611	10.98	154592	16.76	210432	14.26
ZZZZZZ	99652	7.71	166213	10.06	224967	10.99	147187	16.76	209651	14.26
ZZZZZZ	150747	7.72	169377	10.05	231576	10.98	159883	16.75	214857	14.25
VN11230-MB	101091	7.72	164074	10.06	219398	10.98	152671	16.76	211463	14.26
VN11230-BS	103571	7.71	182400	10.05	243457	10.98	171337	16.75	234452	14.25
JC56766-4MS	117302	7.71	197151	10.05	270648	10.98	187961	16.76	249359	14.26
JC56766-4MSD	112401	7.72	188172	10.05	264561	10.98	171806	16.75	244951	14.25
ZZZZZZ	111867	7.71	172950	10.05	235783	10.98	164053	16.75	228544	14.25
JC56766-4	109963	7.72	171638	10.05	236549	10.99	163148	16.75	216974	14.25
ZZZZZZ	108558	7.72	161031	10.05	223894	10.98	161930	16.75	213315	14.25
ZZZZZZ	106584	7.70	167733	10.05	221160	10.98	154214	16.76	215583	14.25
ZZZZZZ	105829	7.70	163082	10.05	219149	10.98	149755	16.75	211359	14.25
ZZZZZZ	107734	7.72	168806	10.05	228974	10.98	151181	16.76	214144	14.26

Internal Standard Area Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Check Std:	VN11229-CC11221	**Injection Date:**	12/08/17
Lab File ID:	N266475.D	**Injection Time:**	08:53
Instrument ID:	GCMSN	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
ZZZZZZ	94888	7.71	148247	10.05	206765	10.98	142043	16.76	198571	14.26
ZZZZZZ	100393	7.71	160494	10.05	220595	10.98	155142	16.75	213220	14.25

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC56672-1	N266463.D	111	91	100	110
JC56672-2	N266464.D	114	95	98	109
JC56672-3	N266465.D	114	94	98	112
JC56672-4	N266480.D	111	92	101	113
JC56672-4	N266466.D	116	95	100	109
JC56672-5	N266467.D	116	97	99	104
JC56672-6	N266468.D	112	95	98	113
JC56672-7	N266469.D	109	96	96	117
JC56672-8	N266470.D	111	96	98	114
JC56672-9	N266471.D	120	96	95	116
JC56672-10	N266460.D	114	96	103	111
JC56694-4DUP	N266459.D	114	94	100	111
JC56694-5MS	N266456.D	109	99	102	107
JC56766-3MS	N266491.D	112	98	98	107
JC56766-3MSD	N266492.D	111	97	103	109
VN11228-BS	N266445.D	106	97	103	104
VN11228-BSD	N266457.D	109	98	102	107
VN11228-MB	N266444.D	117	94	100	119
VN11229-BS	N266477.D	105	97	106	106
VN11229-MB	N266476.D	113	94	102	112

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4 (SUR)	76-122%
S2 = Toluene-D8 (SUR)	80-120%
S3 = 4-Bromofluorobenzene (SUR)	80-120%
S4 = Dibromofluoromethane (S)	80-120%

Initial Calibration Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11221-ICC11221
Lab FileID: N266327.D

Response Factor Report GCMSN

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Calibration Files
1 =n266324.D 2 =n266325.D 100 =n266329.D 50 =n266328.D
20 =n266327.D 200 =n266330.D 5 =n266326.D 0.5 =n266322.D
0.2 =n266323.D =

Compound	1	2	100	50	20	200	5	0.5	0.2	Avg	%RSD
1) I Tert Butyl Alcohol-d9 ----------ISTD----------											
2) tertiary butyl alcohol	1.093	1.072	1.049	0.900	1.011	0.974				1.016	6.99
3) 1,4-dioxane	0.078	0.096	0.093	0.079	0.092	0.071				0.085	12.16
4) I pentafluorobenzene ----------ISTD----------											
5) freon 143a *****This compound did not meet initial calibration criteria.	0.883	0.830	0.851	0.891	0.977	0.830	0.938	1.046		0.906	8.44
6) freon 142b	0.733	0.728	0.868	0.847	0.868	0.888	0.841	0.887		0.832	7.82
7) chlorodifluoromethane	0.661	0.576	0.664	0.654	0.679	0.622	0.636	0.797		0.661	9.62
8) dichlorodifluoromethane	1.131	1.131	1.032	1.019	1.118	0.989	0.995			1.059	6.09
9) chloromethane	0.763	0.816	0.780	0.739	0.769	0.829	0.710	0.802		0.776	5.12
10) vinyl chloride	1.029	0.998	1.009	0.953	1.028	1.023	0.911	1.076		1.003	5.08
11) 1,3-butadiene	0.524	0.429	0.657	0.596	0.596	0.642	0.458	0.645		0.568	15.51
12) bromomethane	0.671	0.669	0.627	0.605	0.624	0.629	0.594			0.631	4.65
13) chloroethane	0.604	0.567	0.521	0.505	0.544	0.508	0.527	0.647		0.553	9.09
14) trichlorofluoromethane	1.108	1.200	1.083	1.056	1.186	1.111	1.050	1.214		1.126	5.79
15) pentane										0.000#	-1.00
16) freon 141b	0.722	0.719	0.793	0.796	0.807	0.801	0.870	1.010		0.815	11.38
17) ethyl ether	0.281	0.250	0.300	0.291	0.301	0.288	0.285	0.292		0.286	5.61
18) acrolein	0.102	0.084	0.083	0.087	0.083	0.069				0.085	12.51
19) 1,1-dichloroethene	0.493	0.482	0.435	0.446	0.493	0.460	0.440	0.674		0.490	15.88
20) acetone	0.057	0.056	0.052	0.050	0.047	0.048	0.051	0.063		0.053	10.26
21) freon 113	0.539	0.465	0.552	0.547	0.566	0.543	0.507	0.512		0.529	6.14
22) acetonitrile										0.000#	-1.00
23) iodomethane											

	0.822 0.814 0.836 0.830 0.871 0.860 0.794 0.925	0.844	4.85	
24)	carbon disulfide			
	1.486 1.421 1.462 1.505 1.590 1.451 1.487 1.728 1.628	1.529	6.52	
25)	methylene chloride			
	0.455 0.455 0.454 0.453 0.481 0.453 0.456 0.544	0.469	6.79	
26)	methyl acetate			
	0.253 0.287 0.254 0.270 0.259 0.250	0.262	5.23	
27)	methyl tert butyl ether			
	1.408 1.314 1.399 1.409 1.483 1.276 1.342 1.644 1.422	1.411	7.61	
28)	trans-1,2-dichloroethene			
	0.515 0.447 0.427 0.422 0.432 0.411 0.447 0.520 0.539	0.462	10.50	
29)	acrylonitrile			
	0.135 0.172 0.160 0.162 0.159 0.153	0.157	7.75	
30)	hexane			
		0.000#	-1.00	
31)	di-isopropyl ether			
	1.158 1.221 1.299 1.282 1.285 1.217 1.212 1.277 1.646	1.289	11.00	
32)	1,1-dichloroethane			
	0.708 0.687 0.706 0.714 0.722 0.663 0.700 0.880 0.744	0.725	8.58	
33)	chloroprene			
	0.486 0.514 0.588 0.560 0.569 0.568 0.543 0.688	0.564	10.59	
34)	vinyl acetate			
		0.000#	-1.00	
35)	ethyl tert-butyl ether			
	1.205 1.230 1.371 1.375 1.432 1.226 1.264 1.289 1.298	1.299	6.02	
36)	2-butanone			
	0.038 0.038 0.048 0.044 0.045 0.047 0.039 0.035	0.042	11.80	
37)	ethyl acetate			
		0.000#	-1.00	
38)	2,2-dichloropropane			
	0.755 0.753 0.834 0.826 0.861 0.801 0.775 0.915	0.815	6.84	
39)	cis-1,2-dichloroethene			
	0.566 0.487 0.480 0.475 0.474 0.455 0.475 0.533 0.568	0.501	8.53	
40)	methyl acrylate			
	0.043 0.056 0.054 0.053 0.056 0.044	0.051	11.41	
41)	propionitrile			
	0.050 0.049 0.058 0.054 0.052 0.053 0.051	0.052	5.77	
42)	bromochloromethane			
	0.217 0.246 0.247 0.244 0.233 0.232 0.204 0.289	0.239	10.52	
43)	tetrahydrofuran			
	0.045 0.048 0.050 0.044 0.044 0.050 0.055	0.048	7.95	
44)	chloroform			
	0.495 0.449 0.496 0.479 0.486 0.465 0.457 0.596 0.631	0.506	12.57	
45)	t-butyl formate			
	0.092 0.169 0.128 0.113 0.179 0.081	0.127	31.55	
46)	dibromofluoromethane (s)			
	0.464 0.463 0.471 0.464 0.477 0.470 0.472 0.462 0.456	0.466	1.37	
47)	methacrylonitrile			
	0.179 0.087 0.157 0.138 0.141 0.149 0.129	0.140	20.22	
48)	1,1,1-trichloroethane			
	0.881 0.855 0.885 0.893 0.894 0.854 0.861 1.167 0.982	0.919	10.96	
49)	cyclohexane			
	0.766 0.856 0.889 0.874 0.938 0.872 0.943 0.757	0.862	8.07	
50)	1,1-dichloropropene			
	0.554 0.487 0.555 0.535 0.533 0.544 0.478 0.494	0.522	5.97	
51)	carbon tetrachloride			
	0.728 0.712 0.824 0.824 0.836 0.797 0.787 0.945 0.883	0.815	8.83	
52)	isobutyl alcohol			
		0.000#	-1.00	

Initial Calibration Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11221-ICC11221
Lab FileID: N266327.D

53) I 1,4-difluorobenzene ----------ISTD----------

54) 1,2-dichloroethane-d4 (s)
0.365 0.386 0.365 0.371 0.368 0.358 0.370 0.373 0.365 0.369 2.08

55) isopropyl acetate
0.000# -1.00

56) 2,2,4-trimethylpentane
0.986 0.950 1.411 1.343 1.311 1.246 1.102 1.163 1.189 14.13

57) benzene
1.058 1.151 1.140 1.150 1.164 0.948 1.132 1.283 1.041 1.119 8.41

58) tert-amyl methyl ether
0.945 0.940 0.976 1.025 1.036 0.790 0.926 1.088 1.112 0.982 9.92

59) 1,2-dichloroethane
0.409 0.395 0.386 0.373 0.392 0.348 0.379 0.488 0.396 10.39

60) heptane
0.000# -1.00

61) n-butyl alcohol
0.000# -1.00

62) trichloroethene
0.276 0.282 0.306 0.297 0.293 0.282 0.296 0.251 0.286 5.90

63) methyl methacrylate
0.232 0.248 0.324 0.313 0.318 0.306 0.282 0.317 0.292 12.00

64) 1,2-dichloropropane
0.242 0.248 0.295 0.293 0.291 0.270 0.290 0.309 0.280 8.57

65) methylcyclohexane
0.599 0.613 0.743 0.740 0.763 0.672 0.687 0.769 0.698 9.52

66) dibromomethane
0.178 0.176 0.182 0.178 0.172 0.170 0.177 0.193 0.178 3.94

67) bromodichloromethane
0.380 0.377 0.409 0.400 0.393 0.372 0.386 0.417 0.392 4.10

68) 2-nitropropane
0.071 0.064 0.058 0.063 0.050 0.061 12.86

69) 2-chloroethyl vinyl ether
0.102 0.111 0.136 0.132 0.131 0.120 0.115 0.112 0.120 9.99

70) epichlorohydrin
0.026 0.023 0.027 0.025 0.025 0.026 0.024 0.025 5.76

71) cis-1,3-dichloropropene
0.429 0.358 0.445 0.441 0.440 0.418 0.406 0.498 0.429 9.22

72) 4-methyl-2-pentanone
0.074 0.113 0.113 0.107 0.103 0.099 0.087 0.090 0.098 14.22

73) 3-methyl-1-butanol
0.015 0.017 0.017 0.016 0.015 0.016 0.012 0.015 0.015 10.06

74) I chlorobenzene-d5 ----------ISTD----------

75) toluene-d8
1.286 1.288 1.334 1.331 1.317 1.317 1.311 1.272 1.321 1.309 1.65

76) toluene
0.708 0.655 0.800 0.791 0.777 0.706 0.738 0.841 0.972 0.777 11.97

77) ethyl methacrylate
0.325 0.324 0.388 0.361 0.342 0.347 0.299 0.341 8.36

78) trans-1,3-dichloropropene
0.354 0.409 0.443 0.437 0.436 0.409 0.407 0.492 0.423 9.32

79) 1,1,2-trichloroethane
0.194 0.199 0.218 0.211 0.218 0.202 0.197 0.192 0.204 5.13

80) tetrachloroethene
0.302 0.263 0.317 0.306 0.305 0.296 0.300 0.410 0.312 13.54

81) 2-hexanone
0.079 0.097 0.110 0.106 0.103 0.097 0.090 0.098 10.78

82) 1,3-dichloropropane
0.473 0.449 0.433 0.417 0.419 0.397 0.442 0.450 0.435 5.44

83) butyl acetate

```
                                                                    0.000#  -1.00
 84)  3,3-dimethyl-1-butanol
           0.041 0.038 0.046 0.043 0.038 0.043 0.030 0.059         0.042   19.52
 85)  dibromochloromethane
           0.320 0.335 0.351 0.344 0.336 0.331 0.292 0.366         0.334    6.59
 86)  1,2-dibromoethane
           0.228 0.272 0.274 0.269 0.276 0.258 0.257 0.303         0.267    7.93
 87)  chlorobenzene
           0.878 0.863 0.860 0.869 0.880 0.765 0.845 1.019         0.872    8.00
 88)  1,1,1,2-tetrachloroethane
           0.350 0.404 0.498 0.483 0.447 0.445 0.481 0.490         0.450   11.31
 89)  ethylbenzene
           1.341 1.388 1.440 1.494 1.507 1.139 1.395 1.396 1.868   1.441   13.39
 90)  m,p-xylene
           0.570 0.569 0.612 0.613 0.613 0.529 0.588 0.641 0.884   0.624   16.44
 91)  o-xylene
           0.527 0.534 0.698 0.682 0.658 0.622 0.604 0.643 0.836   0.645   14.43
 92)  styrene
           0.896 0.909 0.971 0.994 0.978 0.845 0.885 0.866         0.918    6.10
 93)  n-amyl acetate
                                                                    0.000#  -1.00
 94)  bromoform
           0.221 0.247 0.258 0.256 0.255 0.243 0.229               0.244    5.93
 95)  isopropylbenzene
           1.456 1.475 1.790 1.899 1.838 1.327 1.698 1.701 1.993   1.686   13.26

 96) I   1,4-dichlorobenzene-d ----------------ISTD---------------------
 97)  4-bromofluorobenzene (s)
           0.697 0.676 0.724 0.684 0.677 0.713 0.697 0.693 0.693   0.695    2.27
 98)  bromobenzene
           0.617 0.557 0.637 0.604 0.618 0.584 0.607 0.751         0.622    9.23
 99)  1,1,2,2-tetrachloroethane
           0.503 0.540 0.587 0.533 0.541 0.522 0.520 0.551         0.537    4.65
100)  trans-1,4-dichloro-2-butene
           0.138 0.143 0.149 0.133 0.129 0.130 0.126               0.136    6.23
101)  1,2,3-trichloropropane
           0.185 0.205 0.175 0.163 0.161 0.162 0.191               0.177    9.60
102)  n-propylbenzene
           0.602 0.595 0.738 0.696 0.648 0.669 0.602 0.621         0.646    7.99
103)  2-chlorotoluene
           0.579 0.502 0.673 0.611 0.611 0.623 0.593 0.576         0.596    8.20
104)  4-chlorotoluene
           0.458 0.546 0.598 0.583 0.549 0.560 0.575 0.516         0.548    8.04
105)  1,3,5-trimethylbenzene
           1.803 1.819 2.406 2.407 2.280 1.800 1.964 1.919         2.050   13.15
106)  tert-butylbenzene
           0.349 0.402 0.631 0.562 0.517 0.596 0.436 0.467         0.495   19.91
107)  1,2,4-trimethylbenzene
           2.032 1.893 2.337 2.344 2.305 1.786 2.182 2.164         2.130    9.84
108)  sec-butylbenzene
           2.264 2.312 3.024 3.150 3.017 2.136 2.763 2.528         2.649   14.82
109)  1,3-dichlorobenzene
           1.382 1.312 1.320 1.316 1.304 1.149 1.285 1.586         1.332    9.16
110)  p-isopropyltoluene
           2.024 2.069 2.700 2.800 2.675 1.981 2.424 2.401         2.384   13.74
111)  1,4-dichlorobenzene
           1.479 1.241 1.326 1.356 1.369 1.148 1.329 1.699         1.368   12.05
112)  1,2-dichlorobenzene
           1.573 1.442 1.431 1.438 1.435 1.230 1.409 1.696         1.457    9.20
113)  benzyl chloride
```

Initial Calibration Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11221-ICC11221
Lab FileID: N266327.D

```
           1.288 1.355 1.349 1.331 1.322 1.132 1.282 1.392         1.306    6.05
114)  indane
                                                                   0.000#  -1.00
115)  n-butylbenzene
           1.106 1.150 1.440 1.422 1.375 1.223 1.300 1.357         1.297    9.64
116)  hexachloroethane
           0.411 0.439 0.721 0.656 0.579 0.678 0.504 0.581         0.571   19.73
117)  1,2-dibromo-3-chloropropane
           0.213 0.222 0.229 0.220 0.212 0.219 0.213 0.378         0.238   23.94
118)  Nitrobenzene
                       0.081 0.071 0.064 0.081 0.065               0.072   11.03
119)  1,3,5-trichlorobenzene
           1.404 1.618 1.735 1.750 1.755 1.403 1.680 2.073         1.677   12.85
120)  1,2,4-trichlorobenzene
           1.707 1.459 1.691 1.706 1.676 1.343 1.585 2.159         1.666   14.36
121)  hexachlorobutadiene
           0.850 0.787 1.013 0.946 0.933 0.868 0.872 0.965         0.904    8.06
122)  naphthalene
           3.155 2.902 3.092 3.362 3.440 2.114 3.028 4.036         3.141   17.29
123)  1,2,3-trichlorobenzene
           1.499 1.435 1.680 1.644 1.647 1.322 1.481 1.961         1.584   12.35
124)  ETHYLENIMINE
                                                                   0.000#  -1.00
125)  BIS(CHLOROMETHYL)ETHER
                                                                   0.000#  -1.00
 ------------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MN11221.M         Tue Dec 05 09:33:29 2017   MSDN
```

Initial Calibration Verification

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11221-ICV11221
Lab FileID: N266333.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\n266333.D Vial: 13
Acq On : 1 Dec 2017 1:04 am Operator: CHELSEAS
Sample : icv11221-20 Inst : GCMSN
Misc : MS22241,VN11221,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Fri Dec 01 16:37:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	113	0.00	7.70
2	M	tertiary butyl alcohol	1.016	0.975	4.0	123	-0.01	7.82
3	M	1,4-dioxane	0.085	0.084	1.2	121	0.00	11.64
4	I	pentafluorobenzene	1.000	1.000	0.0	113	0.00	10.05
5		freon 143a	0.906	0.515	43.2#	60	0.03	3.69
6		freon 142b	0.832	0.768	7.7	100	0.00	4.27
7	M	chlorodifluoromethane	0.661	0.608	8.0	101	-0.01	4.01
8	M	dichlorodifluoromethane	1.059	1.097	-3.6	111	-0.02	3.99
9	M	chloromethane	0.776	0.736	5.2	108	-0.01	4.32
10	M	vinyl chloride	1.003	0.943	6.0	104	-0.01	4.62
11		1,3-butadiene		----------NA----------				
12	M	bromomethane	0.631	0.614	2.7	111	0.00	5.33
13	M	chloroethane	0.553	0.531	4.0	110	0.00	5.55
14	M	trichlorofluoromethane	1.126	1.095	2.8	105	0.01	6.07
15	M	pentane		----------NA----------				
16		freon 141b	0.815	0.635	22.1	89	0.00	6.54
17	M	ethyl ether	0.286	0.300	-4.9	113	0.00	6.52
18	M	acrolein	0.085	0.080	5.9	104	-0.01	6.76
19	M	1,1-dichloroethene	0.490	0.430	12.2	99	0.00	6.96
20	M	acetone	0.053	0.056	-5.7	136	0.01	7.00
21		freon 113	0.529	0.631	-19.3	126	0.00	6.98
22	M	acetonitrile		----------NA----------				
23	M	iodomethane	0.844	0.857	-1.5	112	0.00	7.23
24	M	carbon disulfide	1.529	1.599	-4.6	114	0.00	7.37
25	M	methylene chloride	0.469	0.471	-0.4	111	0.00	7.74
26	M	methyl acetate	0.262	0.249	5.0	105	0.00	7.49
27	M	methyl tert butyl ether	1.411	1.471	-4.3	112	0.00	8.12
28	M	trans-1,2-dichloroethene	0.462	0.412	10.8	108	0.00	8.14
29		acrylonitrile	0.157	0.159	-1.3	111	0.00	8.07
30		hexane		----------NA----------				
31	M	di-isopropyl ether	1.289	1.263	2.0	111	0.00	8.75
32	M	1,1-dichloroethane	0.725	0.704	2.9	111	0.00	8.76
33	M	chloroprene	0.564	0.569	-0.9	113	0.00	8.85
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether	1.299	1.392	-7.2	110	0.00	9.22
36		2-butanone	0.042	0.046	-9.5	117	0.00	9.43
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane	0.815	0.772	5.3	102	0.00	9.51
39	M	cis-1,2-dichloroethene	0.501	0.476	5.0	114	0.00	9.48
40		methyl acrylate	0.051	0.053	-3.9	113	0.00	9.53
41	M	propionitrile	0.052	0.054	-3.8	119	0.00	9.52

Initial Calibration Verification

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11221-ICV11221
Lab FileID: N266333.D

42	M	bromochloromethane	0.239	0.235	1.7	114	0.00	9.78
43	M	tetrahydrofuran	0.048	0.044	8.3	114	0.00	9.80
44	M	chloroform	0.506	0.480	5.1	112	0.00	9.88
45		t-butyl formate	0.127	0.156	-22.8	156	0.00	9.92
46	S	dibromofluoromethane (s)	0.466	0.449	3.6	107	0.00	10.07
47	M	methacrylonitrile	0.140	0.137	2.1	110	-0.01	9.70
48	M	1,1,1-trichloroethane	0.919	0.853	7.2	108	0.00	10.12
49	M	cyclohexane	0.862	0.827	4.1	100	0.00	10.23
50		1,1-dichloropropene	0.522	0.540	-3.4	115	0.00	10.30
51		carbon tetrachloride	0.815	0.818	-0.4	111	0.00	10.32
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	111	0.00	10.98
54	S	1,2-dichloroethane-d4 (s)	0.369	0.365	1.1	110	0.00	10.50
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane	1.189	1.275	-7.2	108	0.00	10.65
57	M	benzene	1.119	1.181	-5.5	113	0.00	10.55
58	M	tert-amyl methyl ether	0.982	1.065	-7.5	114	0.00	10.64
59	M	1,2-dichloroethane	0.396	0.389	1.8	110	0.00	10.59
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene	0.286	0.315	-10.1	120	0.00	11.28
63	M	methyl methacrylate	0.292	0.306	-4.8	107	0.00	11.57
64	M	1,2-dichloropropane	0.280	0.291	-3.9	111	0.00	11.59
65	M	methylcyclohexane	0.698	0.699	-0.1	102	0.00	11.58
66		dibromomethane	0.178	0.184	-3.4	119	0.00	11.70
67	M	bromodichloromethane	0.392	0.390	0.5	111	0.00	11.86
68		2-nitropropane	0.061	0.063	-3.3	121	0.00	12.08
69		2-chloroethyl vinyl ether	0.120	0.141	-17.5	120	0.00	12.12
70		epichlorohydrin	0.025	0.024	4.0	107	0.00	12.20
71	M	cis-1,3-dichloropropene	0.429	0.429	0.0	108	0.00	12.33
72	M	4-methyl-2-pentanone	0.098	0.098	0.0	106	0.00	12.45
73		3-methyl-1-butanol	0.015	0.015	0.0	112	0.00	12.47
74	I	chlorobenzene-d5	1.000	1.000	0.0	110	0.00	14.25
75	S	toluene-d8	1.309	1.299	0.8	109	0.00	12.65
76		toluene	0.777	0.791	-1.8	112	0.00	12.73
77		ethyl methacrylate	0.341	0.330	3.2	107	0.00	12.94
78		trans-1,3-dichloropropene	0.423	0.432	-2.1	109	0.00	12.94
79		1,1,2-trichloroethane	0.204	0.215	-5.4	109	0.00	13.17
80	M	tetrachloroethene	0.312	0.404	-29.5	146	0.00	13.30
81		2-hexanone	0.098	0.108	-10.2	116	0.00	13.35
82	M	1,3-dichloropropane	0.435	0.431	0.9	113	0.00	13.36
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol	0.042	0.042	0.0	122	0.00	13.55
85	M	dibromochloromethane	0.334	0.352	-5.4	116	0.00	13.62
86	M	1,2-dibromoethane	0.267	0.274	-2.6	110	0.00	13.78
87	M	chlorobenzene	0.872	0.909	-4.2	114	0.00	14.29
88	M	1,1,1,2-tetrachloroethane	0.450	0.469	-4.2	116	0.00	14.36
89	M	ethylbenzene	1.441	1.517	-5.3	111	0.00	14.36
90	M	m,p-xylene	0.624	0.607	2.7	109	0.00	14.49
91	M	o-xylene	0.645	0.680	-5.4	114	0.00	14.92
92	M	styrene	0.918	0.990	-7.8	112	0.00	14.93
93		n-amyl acetate		----------NA----------				
94	M	bromoform	0.244	0.278	-13.9	120	0.00	15.18
95		isopropylbenzene	1.686	1.890	-12.1	114	0.00	15.29
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	111	0.00	16.75
97	S	4-bromofluorobenzene (s)	0.695	0.704	-1.3	115	0.00	15.51
98	M	bromobenzene	0.622	0.622	0.0	112	0.00	15.70

Initial Calibration Verification

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11221-ICV11221
Lab FileID: N266333.D

99	M	1,1,2,2-tetrachloroethane	0.537	0.548	-2.0	112	0.00	15.60
100	M	trans-1,4-dichloro-2-bute	0.136	0.152	-11.8	131	0.00	15.64
101	M	1,2,3-trichloropropane	0.177	0.162	8.5	111	0.00	15.69
102	M	n-propylbenzene	0.646	0.660	-2.2	113	0.00	15.74
103	M	2-chlorotoluene	0.596	0.584	2.0	106	0.00	15.87
104	M	4-chlorotoluene	0.548	0.575	-4.9	116	0.00	16.00
105	M	1,3,5-trimethylbenzene	2.050	2.291	-11.8	111	0.00	15.91
106	M	tert-butylbenzene	0.495	0.516	-4.2	110	0.00	16.27
107	M	1,2,4-trimethylbenzene	2.130	2.369	-11.2	114	0.00	16.32
108	M	sec-butylbenzene	2.649	3.092	-16.7	114	0.00	16.50
109	M	1,3-dichlorobenzene	1.332	1.385	-4.0	118	0.00	16.68
110	M	p-isopropyltoluene	2.384	2.758	-15.7	114	0.00	16.64
111	M	1,4-dichlorobenzene	1.368	1.394	-1.9	113	0.00	16.78
112	M	1,2-dichlorobenzene	1.457	1.488	-2.1	115	0.00	17.18
113	M	benzyl chloride	1.306	1.136	13.0	95	0.00	16.88
114		indane		----------NA----------				
115	M	n-butylbenzene	1.297	1.387	-6.9	112	0.00	17.08
116		hexachloroethane	0.571	0.607	-6.3	116	0.00	17.50
117	M	1,2-dibromo-3-chloropropa	0.238	0.215	9.7	113	0.00	18.02
118		Nitrobenzene	0.072	0.064	11.1	111	0.00	18.23
119		1,3,5-trichlorobenzene	1.677	1.854	-10.6	117	0.00	18.21
120	M	1,2,4-trichlorobenzene	1.666	1.703	-2.2	113	0.00	18.91
121	M	hexachlorobutadiene	0.904	0.936	-3.5	111	0.00	19.04
122	M	naphthalene	3.141	3.487	-11.0	112	0.00	19.23
123	M	1,2,3-trichlorobenzene	1.584	1.668	-5.3	112	0.00	19.47
124		ETHYLENIMINE		----------NA----------				
125		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Fri Dec 01 16:41:51 2017 MSDN

Initial Calibration Verification

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11223-ICV11221
Lab FileID: N266354.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\n266354.D Vial: 12
Acq On : 4 Dec 2017 9:45 pm Operator: CHELSEAS
Sample : icv11221-20 Inst : GCMSN
Misc : MS22241,VN11223,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Tue Dec 05 09:25:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	93	0.03	7.72
2	M	tertiary butyl alcohol		----------NA----------				
3	M	1,4-dioxane		----------NA----------				
4	I	pentafluorobenzene	1.000	1.000	0.0	95	0.00	10.05
5		freon 143a		----------NA----------				
6		freon 142b		----------NA----------				
7	M	chlorodifluoromethane		----------NA----------				
8	M	dichlorodifluoromethane		----------NA----------				
9	M	chloromethane		----------NA----------				
10	M	vinyl chloride		----------NA----------				
11		1,3-butadiene	0.568	0.555	2.3	88	-0.05	4.69
12	M	bromomethane		----------NA----------				
13	M	chloroethane		----------NA----------				
14	M	trichlorofluoromethane		----------NA----------				
15	M	pentane		----------NA----------				
16		freon 141b		----------NA----------				
17	M	ethyl ether		----------NA----------				
18	M	acrolein		----------NA----------				
19	M	1,1-dichloroethene		----------NA----------				
20	M	acetone		----------NA----------				
21		freon 113		----------NA----------				
22	M	acetonitrile		----------NA----------				
23	M	iodomethane		----------NA----------				
24	M	carbon disulfide		----------NA----------				
25	M	methylene chloride		----------NA----------				
26	M	methyl acetate		----------NA----------				
27	M	methyl tert butyl ether		----------NA----------				
28	M	trans-1,2-dichloroethene		----------NA----------				
29		acrylonitrile		----------NA----------				
30		hexane		----------NA----------				
31	M	di-isopropyl ether		----------NA----------				
32	M	1,1-dichloroethane		----------NA----------				
33	M	chloroprene		----------NA----------				
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether		----------NA----------				
36		2-butanone		----------NA----------				
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane		----------NA----------				
39	M	cis-1,2-dichloroethene		----------NA----------				
40		methyl acrylate		----------NA----------				
41	M	propionitrile		----------NA----------				

Initial Calibration Verification

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11223-ICV11221
Lab FileID: N266354.D

42	M	bromochloromethane		----------NA----------					
43	M	tetrahydrofuran		----------NA----------					
44	M	chloroform		----------NA----------					
45		t-butyl formate		----------NA----------					
46	S	dibromofluoromethane (s)	0.466	0.495	-6.2	98	0.00	10.07	
47	M	methacrylonitrile		----------NA----------					
48	M	1,1,1-trichloroethane		----------NA----------					
49	M	cyclohexane		----------NA----------					
50		1,1-dichloropropene		----------NA----------					
51		carbon tetrachloride		----------NA----------					
52		isobutyl alcohol		----------NA----------					
53	I	1,4-difluorobenzene	1.000	1.000	0.0	92	0.00	10.98	
54	S	1,2-dichloroethane-d4 (s)	0.369	0.389	-5.4	97	0.00	10.49	
55		isopropyl acetate		----------NA----------					
56		2,2,4-trimethylpentane		----------NA----------					
57	M	benzene		----------NA----------					
58	M	tert-amyl methyl ether		----------NA----------					
59	M	1,2-dichloroethane		----------NA----------					
60		heptane		----------NA----------					
61		n-butyl alcohol		----------NA----------					
62	M	trichloroethene		----------NA----------					
63	M	methyl methacrylate		----------NA----------					
64	M	1,2-dichloropropane		----------NA----------					
65	M	methylcyclohexane		----------NA----------					
66		dibromomethane		----------NA----------					
67	M	bromodichloromethane		----------NA----------					
68		2-nitropropane		----------NA----------					
69		2-chloroethyl vinyl ether		----------NA----------					
70		epichlorohydrin		----------NA----------					
71	M	cis-1,3-dichloropropene		----------NA----------					
72	M	4-methyl-2-pentanone		----------NA----------					
73		3-methyl-1-butanol		----------NA----------					
74	I	chlorobenzene-d5	1.000	1.000	0.0	92	0.00	14.25	
75	S	toluene-d8	1.309	1.240	5.3	86	0.00	12.65	
76		toluene		----------NA----------					
77		ethyl methacrylate		----------NA----------					
78		trans-1,3-dichloropropene		----------NA----------					
79		1,1,2-trichloroethane		----------NA----------					
80	M	tetrachloroethene		----------NA----------					
81		2-hexanone		----------NA----------					
82	M	1,3-dichloropropane		----------NA----------					
83	M	butyl acetate		----------NA----------					
84		3,3-dimethyl-1-butanol		----------NA----------					
85	M	dibromochloromethane		----------NA----------					
86	M	1,2-dibromoethane		----------NA----------					
87	M	chlorobenzene		----------NA----------					
88	M	1,1,1,2-tetrachloroethane		----------NA----------					
89	M	ethylbenzene		----------NA----------					
90	M	m,p-xylene		----------NA----------					
91	M	o-xylene		----------NA----------					
92	M	styrene		----------NA----------					
93		n-amyl acetate		----------NA----------					
94	M	bromoform		----------NA----------					
95		isopropylbenzene		----------NA----------					
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	94	0.00	16.75	
97	S	4-bromofluorobenzene (s)	0.695	0.657	5.5	91	0.00	15.51	
98	M	bromobenzene		----------NA----------					

Initial Calibration Verification

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11223-ICV11221
Lab FileID: N266354.D

99	M	1,1,2,2-tetrachloroethane	----------NA----------
100	M	trans-1,4-dichloro-2-bute	----------NA----------
101	M	1,2,3-trichloropropane	----------NA----------
102	M	n-propylbenzene	----------NA----------
103	M	2-chlorotoluene	----------NA----------
104	M	4-chlorotoluene	----------NA----------
105	M	1,3,5-trimethylbenzene	----------NA----------
106	M	tert-butylbenzene	----------NA----------
107	M	1,2,4-trimethylbenzene	----------NA----------
108	M	sec-butylbenzene	----------NA----------
109	M	1,3-dichlorobenzene	----------NA----------
110	M	p-isopropyltoluene	----------NA----------
111	M	1,4-dichlorobenzene	----------NA----------
112	M	1,2-dichlorobenzene	----------NA----------
113	M	benzyl chloride	----------NA----------
114		indane	----------NA----------
115	M	n-butylbenzene	----------NA----------
116		hexachloroethane	----------NA----------
117	M	1,2-dibromo-3-chloropropa	----------NA----------
118		Nitrobenzene	----------NA----------
119		1,3,5-trichlorobenzene	----------NA----------
120	M	1,2,4-trichlorobenzene	----------NA----------
121	M	hexachlorobutadiene	----------NA----------
122	M	naphthalene	----------NA----------
123	M	1,2,3-trichlorobenzene	----------NA----------
124		ETHYLENIMINE	----------NA----------
125		BIS(CHLOROMETHYL)ETHER	----------NA----------

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Tue Dec 05 09:33:42 2017 MSDN

Continuing Calibration Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11228-CC11221
Lab FileID: N266443.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\n266443.D Vial: 50
Acq On : 7 Dec 2017 10:22 am Operator: CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS22851,VN11228,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Tue Dec 05 09:25:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	80	0.03	7.72
2	M	tertiary butyl alcohol	1.016	0.983	3.2	88	0.00	7.83
3	M	1,4-dioxane	0.085	0.075	11.8	77	0.00	11.64
4	I	pentafluorobenzene	1.000	1.000	0.0	89	0.00	10.06
5		freon 143a	0.906	0.891	1.7	81	0.02	3.69
6		freon 142b	0.832	0.841	-1.1	86	0.00	4.27
7	M	chlorodifluoromethane	0.661	0.606	8.3	80	0.00	4.03
8	M	dichlorodifluoromethane	1.059	0.890	16.0	71	0.00	4.00
9	M	chloromethane	0.776	0.767	1.2	89	0.00	4.33
10	M	vinyl chloride	1.003	0.950	5.3	82	-0.01	4.62
11		1,3-butadiene	0.568	0.554	2.5	83	-0.04	4.70
12	M	bromomethane	0.631	0.639	-1.3	91	0.00	5.33
13	M	chloroethane	0.553	0.554	-0.2	91	0.00	5.55
14	M	trichlorofluoromethane	1.126	1.076	4.4	81	0.00	6.07
15	M	pentane		----------NA----------				
16		freon 141b	0.815	0.839	-2.9	93	0.00	6.55
17	M	ethyl ether	0.286	0.291	-1.7	86	0.00	6.52
18	M	acrolein	0.085	0.083	2.4	86	0.02	6.79
19	M	1,1-dichloroethene	0.490	0.392	20.0	71	0.00	6.97
20	M	acetone	0.053	0.038	28.3	72	0.03	7.02
21		freon 113	0.529	0.478	9.6	75	0.00	6.98
22	M	acetonitrile		----------NA----------				
23	M	iodomethane	0.844	0.747	11.5	76	0.00	7.23
24	M	carbon disulfide	1.529	1.401	8.4	79	0.00	7.36
25	M	methylene chloride	0.469	0.461	1.7	86	0.00	7.74
26	M	methyl acetate	0.262	0.288	-9.9	95	0.00	7.49
27	M	methyl tert butyl ether	1.411	1.337	5.2	80	0.00	8.12
28	M	trans-1,2-dichloroethene	0.462	0.406	12.1	84	0.00	8.15
29		acrylonitrile	0.157	0.176	-12.1	97	0.00	8.07
30		hexane		----------NA----------				
31	M	di-isopropyl ether	1.289	1.189	7.8	82	0.00	8.76
32	M	1,1-dichloroethane	0.725	0.724	0.1	89	0.00	8.75
33	M	chloroprene	0.564	0.500	11.3	78	0.00	8.85
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether	1.299	1.294	0.4	81	0.00	9.22
36		2-butanone	0.042	0.037	11.9	73	0.00	9.43
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane	0.815	0.791	2.9	82	0.00	9.52
39	M	cis-1,2-dichloroethene	0.501	0.452	9.8	85	0.00	9.49
40		methyl acrylate	0.051	0.048	5.9	81	0.00	9.53
41	M	propionitrile	0.052	0.054	-3.8	92	0.00	9.52

Continuing Calibration Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11228-CC11221
Lab FileID: N266443.D

42	M	bromochloromethane	0.239	0.228	4.6	87	0.00	9.79
43	M	tetrahydrofuran	0.048	0.037	22.9	74	0.00	9.80
44	M	chloroform	0.506	0.505	0.2	93	0.00	9.88
45		t-butyl formate	0.127	0.108	15.0	85	0.00	9.93
46	S	dibromofluoromethane (s)	0.466	0.513	-10.1	96	0.00	10.08
47	M	methacrylonitrile	0.140	0.139	0.7	88	0.00	9.72
48	M	1,1,1-trichloroethane	0.919	0.844	8.2	84	0.01	10.13
49	M	cyclohexane	0.862	0.729	15.4	69	0.00	10.23
50		1,1-dichloropropene	0.522	0.493	5.6	83	0.00	10.30
51		carbon tetrachloride	0.815	0.783	3.9	84	0.00	10.32
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	87	0.00	10.99
54	S	1,2-dichloroethane-d4 (s)	0.369	0.404	-9.5	95	0.00	10.50
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane	1.189	1.044	12.2	69	0.00	10.65
57	M	benzene	1.119	1.153	-3.0	86	0.00	10.55
58	M	tert-amyl methyl ether	0.982	0.955	2.7	80	0.00	10.65
59	M	1,2-dichloroethane	0.396	0.392	1.0	87	0.00	10.59
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene	0.286	0.274	4.2	81	0.00	11.29
63	M	methyl methacrylate	0.292	0.283	3.1	77	0.00	11.57
64	M	1,2-dichloropropane	0.280	0.282	-0.7	84	0.00	11.59
65	M	methylcyclohexane	0.698	0.627	10.2	71	0.00	11.58
66		dibromomethane	0.178	0.183	-2.8	92	0.00	11.70
67	M	bromodichloromethane	0.392	0.384	2.0	85	0.00	11.86
68		2-nitropropane	0.061	0.092	-50.8#	138	0.00	12.09
69		2-chloroethyl vinyl ether	0.120	0.120	0.0	80	0.00	12.12
70		epichlorohydrin	0.025	0.024	4.0	84	0.00	12.21
71	M	cis-1,3-dichloropropene	0.429	0.414	3.5	82	0.00	12.34
72	M	4-methyl-2-pentanone	0.098	0.102	-4.1	86	0.00	12.46
73		3-methyl-1-butanol	0.015	0.015	0.0	87	0.00	12.47
74	I	chlorobenzene-d5	1.000	1.000	0.0	93	0.00	14.26
75	S	toluene-d8	1.309	1.297	0.9	92	0.00	12.65
76		toluene	0.777	0.689	11.3	83	0.00	12.73
77		ethyl methacrylate	0.341	0.293	14.1	80	0.00	12.94
78		trans-1,3-dichloropropene	0.423	0.393	7.1	84	0.00	12.94
79		1,1,2-trichloroethane	0.204	0.195	4.4	83	0.00	13.17
80	M	tetrachloroethene	0.312	0.254	18.6	78	0.00	13.31
81		2-hexanone	0.098	0.085	13.3	77	0.00	13.36
82	M	1,3-dichloropropane	0.435	0.424	2.5	94	0.00	13.36
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol	0.042	0.031	26.2	74	0.00	13.55
85	M	dibromochloromethane	0.334	0.303	9.3	84	0.00	13.62
86	M	1,2-dibromoethane	0.267	0.249	6.7	84	0.00	13.78
87	M	chlorobenzene	0.872	0.821	5.8	87	0.00	14.29
88	M	1,1,1,2-tetrachloroethane	0.450	0.410	8.9	85	0.00	14.37
89	M	ethylbenzene	1.441	1.341	6.9	83	0.00	14.36
90	M	m,p-xylene	0.624	0.534	14.4	81	0.00	14.49
91	M	o-xylene	0.645	0.554	14.1	79	0.00	14.92
92	M	styrene	0.918	0.850	7.4	81	0.00	14.94
93		n-amyl acetate		----------NA----------				
94	M	bromoform	0.244	0.233	4.5	85	0.00	15.18
95		isopropylbenzene	1.686	1.529	9.3	78	0.00	15.30
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	88	0.00	16.76
97	S	4-bromofluorobenzene (s)	0.695	0.701	-0.9	91	0.00	15.51
98	M	bromobenzene	0.622	0.560	10.0	80	0.00	15.70

Continuing Calibration Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11228-CC11221
Lab FileID: N266443.D

99	M	1,1,2,2-tetrachloroethane	0.537	0.535	0.4	87	0.00	15.61
100	M	trans-1,4-dichloro-2-bute	0.136	0.130	4.4	89	0.00	15.64
101	M	1,2,3-trichloropropane	0.177	0.157	11.3	86	0.00	15.69
102	M	n-propylbenzene	0.646	0.595	7.9	81	0.00	15.74
103	M	2-chlorotoluene	0.596	0.539	9.6	78	0.00	15.88
104	M	4-chlorotoluene	0.548	0.508	7.3	82	0.00	16.00
105	M	1,3,5-trimethylbenzene	2.050	2.068	-0.9	80	0.00	15.91
106	M	tert-butylbenzene	0.495	0.428	13.5	73	0.00	16.27
107	M	1,2,4-trimethylbenzene	2.130	2.089	1.9	80	0.00	16.33
108	M	sec-butylbenzene	2.649	2.579	2.6	75	0.00	16.50
109	M	1,3-dichlorobenzene	1.332	1.249	6.2	85	0.00	16.68
110	M	p-isopropyltoluene	2.384	2.249	5.7	74	0.00	16.65
111	M	1,4-dichlorobenzene	1.368	1.258	8.0	81	0.00	16.78
112	M	1,2-dichlorobenzene	1.457	1.323	9.2	81	0.00	17.18
113	M	benzyl chloride	1.306	1.169	10.5	78	0.00	16.89
114		indane		----------NA----------				
115	M	n-butylbenzene	1.297	1.202	7.3	77	0.00	17.09
116		hexachloroethane	0.571	0.469	17.9	72	0.00	17.50
117	M	1,2-dibromo-3-chloropropa	0.238	0.170	28.6	71	0.00	18.02
118		Nitrobenzene	0.072	0.051	29.2	69	0.00	18.23
119		1,3,5-trichlorobenzene	1.677	1.495	10.9	75	0.00	18.22
120	M	1,2,4-trichlorobenzene	1.666	1.378	17.3	73	0.00	18.92
121	M	hexachlorobutadiene	0.904	0.701	22.5	66	0.00	19.04
122	M	naphthalene	3.141	2.823	10.1	73	0.00	19.24
123	M	1,2,3-trichlorobenzene	1.584	1.341	15.3	72	0.00	19.47
124		ETHYLENIMINE		----------NA----------				
125		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Fri Dec 08 00:07:11 2017 MSDN

Continuing Calibration Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11229-CC11221
Lab FileID: N266475.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\n266475.D Vial: 32
Acq On : 8 Dec 2017 8:53 am Operator: CHELSEAS
Sample : CC11221-20 Inst : GCMSN
Misc : MS22856,VN11229,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Tue Dec 05 09:25:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	80	0.03	7.73
2	M	tertiary butyl alcohol	1.016	1.001	1.5	89	0.02	7.85
3	M	1,4-dioxane	0.085	0.084	1.2	86	0.00	11.64
4	I	pentafluorobenzene	1.000	1.000	0.0	87	0.00	10.06
5		freon 143a		----------NA----------				
6		freon 142b		----------NA----------				
7	M	chlorodifluoromethane	0.661	0.939	-42.1#	120	0.00	4.03
8	M	dichlorodifluoromethane	1.059	0.972	8.2	76	0.00	4.01
9	M	chloromethane	0.776	0.848	-9.3	96	0.00	4.33
10	M	vinyl chloride	1.003	1.027	-2.4	87	0.00	4.62
11		1,3-butadiene		----------NA----------				
12	M	bromomethane	0.631	0.659	-4.4	92	0.00	5.33
13	M	chloroethane	0.553	0.606	-9.6	97	0.01	5.55
14	M	trichlorofluoromethane	1.126	1.153	-2.4	84	0.02	6.08
15	M	pentane		----------NA----------				
16		freon 141b		----------NA----------				
17	M	ethyl ether	0.286	0.316	-10.5	91	0.00	6.52
18	M	acrolein	0.085	0.091	-7.1	91	0.01	6.78
19	M	1,1-dichloroethene	0.490	0.455	7.1	80	0.00	6.97
20	M	acetone	0.053	0.047	11.3	87	0.02	7.01
21		freon 113	0.529	0.595	-12.5	91	0.00	6.98
22	M	acetonitrile		----------NA----------				
23	M	iodomethane	0.844	0.942	-11.6	94	0.00	7.23
24	M	carbon disulfide	1.529	1.889	-23.5	103	0.00	7.36
25	M	methylene chloride	0.469	0.531	-13.2	96	0.00	7.75
26	M	methyl acetate	0.262	0.264	-0.8	85	0.00	7.49
27	M	methyl tert butyl ether	1.411	1.569	-11.2	92	0.00	8.13
28	M	trans-1,2-dichloroethene	0.462	0.478	-3.5	96	0.00	8.15
29		acrylonitrile	0.157	0.172	-9.6	92	0.01	8.08
30		hexane		----------NA----------				
31	M	di-isopropyl ether	1.289	1.417	-9.9	96	0.00	8.76
32	M	1,1-dichloroethane	0.725	0.804	-10.9	97	0.00	8.76
33	M	chloroprene	0.564	0.557	1.2	85	0.00	8.84
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether	1.299	1.507	-16.0	91	0.00	9.22
36		2-butanone	0.042	0.035	16.7	68	0.00	9.43
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane	0.815	0.981	-20.4	99	0.00	9.51
39	M	cis-1,2-dichloroethene	0.501	0.487	2.8	89	0.00	9.48
40		methyl acrylate	0.051	0.046	9.8	76	0.00	9.52
41	M	propionitrile	0.052	0.053	-1.9	90	0.00	9.52

Continuing Calibration Summary

Job Number: JC56672 **Sample:** VN11229-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266475.D
Project: SECORINI: Zanesville OH, Monthly

42	M	bromochloromethane	0.239	0.245	-2.5	91	0.00	9.79
43	M	tetrahydrofuran	0.048	0.039	18.8	77	0.00	9.79
44	M	chloroform	0.506	0.504	0.4	90	0.00	9.89
45		t-butyl formate	0.127	0.132	-3.9	101	0.00	9.91
46	S	dibromofluoromethane (s)	0.466	0.488	-4.7	89	0.00	10.08
47	M	methacrylonitrile	0.140	0.131	6.4	81	0.00	9.71
48	M	1,1,1-trichloroethane	0.919	0.951	-3.5	92	0.01	10.14
49	M	cyclohexane	0.862	0.785	8.9	73	0.00	10.24
50		1,1-dichloropropene	0.522	0.526	-0.8	86	0.00	10.30
51		carbon tetrachloride	0.815	0.871	-6.9	90	0.00	10.32
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	86	0.00	10.99
54	S	1,2-dichloroethane-d4 (s)	0.369	0.394	-6.8	92	0.00	10.50
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane	1.189	1.224	-2.9	80	0.00	10.65
57	M	benzene	1.119	1.220	-9.0	90	0.00	10.55
58	M	tert-amyl methyl ether	0.982	1.059	-7.8	88	0.00	10.64
59	M	1,2-dichloroethane	0.396	0.408	-3.0	89	0.00	10.59
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene	0.286	0.282	1.4	83	0.00	11.29
63	M	methyl methacrylate	0.292	0.299	-2.4	81	0.00	11.57
64	M	1,2-dichloropropane	0.280	0.311	-11.1	92	0.00	11.60
65	M	methylcyclohexane	0.698	0.679	2.7	76	0.00	11.58
66		dibromomethane	0.178	0.180	-1.1	90	0.00	11.70
67	M	bromodichloromethane	0.392	0.419	-6.9	91	0.00	11.87
68		2-nitropropane	0.061	0.099	-62.3#	146	0.00	12.09
69		2-chloroethyl vinyl ether	0.120	0.138	-15.0	90	0.00	12.12
70		epichlorohydrin	0.025	0.027	-8.0	91	0.00	12.21
71	M	cis-1,3-dichloropropene	0.429	0.446	-4.0	87	0.00	12.34
72	M	4-methyl-2-pentanone	0.098	0.102	-4.1	85	0.00	12.46
73		3-methyl-1-butanol	0.015	0.015	0.0	88	0.00	12.47
74	I	chlorobenzene-d5	1.000	1.000	0.0	93	0.00	14.26
75	S	toluene-d8	1.309	1.278	2.4	91	0.00	12.65
76		toluene	0.777	0.731	5.9	88	0.00	12.73
77		ethyl methacrylate	0.341	0.297	12.9	81	0.00	12.94
78		trans-1,3-dichloropropene	0.423	0.426	-0.7	91	0.00	12.94
79		1,1,2-trichloroethane	0.204	0.207	-1.5	89	0.00	13.17
80	M	tetrachloroethene	0.312	0.271	13.1	83	0.00	13.31
81		2-hexanone	0.098	0.087	11.2	78	0.00	13.36
82	M	1,3-dichloropropane	0.435	0.418	3.9	93	0.00	13.37
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol	0.042	0.030	28.6	74	0.00	13.55
85	M	dibromochloromethane	0.334	0.328	1.8	91	0.00	13.61
86	M	1,2-dibromoethane	0.267	0.254	4.9	86	0.00	13.78
87	M	chlorobenzene	0.872	0.858	1.6	91	0.00	14.29
88	M	1,1,1,2-tetrachloroethane	0.450	0.417	7.3	87	0.00	14.37
89	M	ethylbenzene	1.441	1.454	-0.9	90	0.00	14.36
90	M	m,p-xylene	0.624	0.576	7.7	88	0.00	14.49
91	M	o-xylene	0.645	0.600	7.0	85	0.00	14.92
92	M	styrene	0.918	0.914	0.4	87	0.00	14.94
93		n-amyl acetate		----------NA----------				
94	M	bromoform	0.244	0.221	9.4	81	0.00	15.18
95		isopropylbenzene	1.686	1.644	2.5	83	0.00	15.30
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	89	0.00	16.76
97	S	4-bromofluorobenzene (s)	0.695	0.718	-3.3	95	0.00	15.51
98	M	bromobenzene	0.622	0.592	4.8	86	0.00	15.70

Continuing Calibration Summary

Job Number: JC56672
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Sample: VN11229-CC11221
Lab FileID: N266475.D

99	M	1,1,2,2-tetrachloroethane	0.537	0.550	-2.4	91	0.00	15.61
100	M	trans-1,4-dichloro-2-bute	0.136	0.115	15.4	80	0.00	15.64
101	M	1,2,3-trichloropropane	0.177	0.165	6.8	91	0.00	15.70
102	M	n-propylbenzene	0.646	0.635	1.7	87	0.00	15.74
103	M	2-chlorotoluene	0.596	0.583	2.2	85	0.00	15.88
104	M	4-chlorotoluene	0.548	0.554	-1.1	90	0.00	16.00
105	M	1,3,5-trimethylbenzene	2.050	2.223	-8.4	87	0.00	15.91
106	M	tert-butylbenzene	0.495	0.439	11.3	76	0.00	16.27
107	M	1,2,4-trimethylbenzene	2.130	2.236	-5.0	87	0.00	16.32
108	M	sec-butylbenzene	2.649	2.788	-5.2	83	0.00	16.51
109	M	1,3-dichlorobenzene	1.332	1.345	-1.0	92	0.00	16.68
110	M	p-isopropyltoluene	2.384	2.503	-5.0	84	0.00	16.65
111	M	1,4-dichlorobenzene	1.368	1.322	3.4	86	0.00	16.78
112	M	1,2-dichlorobenzene	1.457	1.422	2.4	89	0.00	17.19
113	M	benzyl chloride	1.306	1.283	1.8	87	0.00	16.89
114		indane		----------NA----------				
115	M	n-butylbenzene	1.297	1.306	-0.7	85	0.00	17.09
116		hexachloroethane	0.571	0.503	11.9	78	0.00	17.50
117	M	1,2-dibromo-3-chloropropa	0.238	0.170	28.6	72	0.00	18.02
118		Nitrobenzene	0.072	0.050	30.6	70	0.00	18.23
119		1,3,5-trichlorobenzene	1.677	1.605	4.3	82	0.00	18.22
120	M	1,2,4-trichlorobenzene	1.666	1.429	14.2	76	0.00	18.92
121	M	hexachlorobutadiene	0.904	0.781	13.6	75	0.00	19.04
122	M	naphthalene	3.141	2.771	11.8	72	0.00	19.24
123	M	1,2,3-trichlorobenzene	1.584	1.349	14.8	73	0.00	19.47
124		ETHYLENIMINE		----------NA----------				
125		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Fri Dec 08 13:29:01 2017 MSDN

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266463.d
Acq On : 7 Dec 2017 8:46 pm
Operator : CHELSEAS
Sample : jc56672-1
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Dec 08 10:24:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

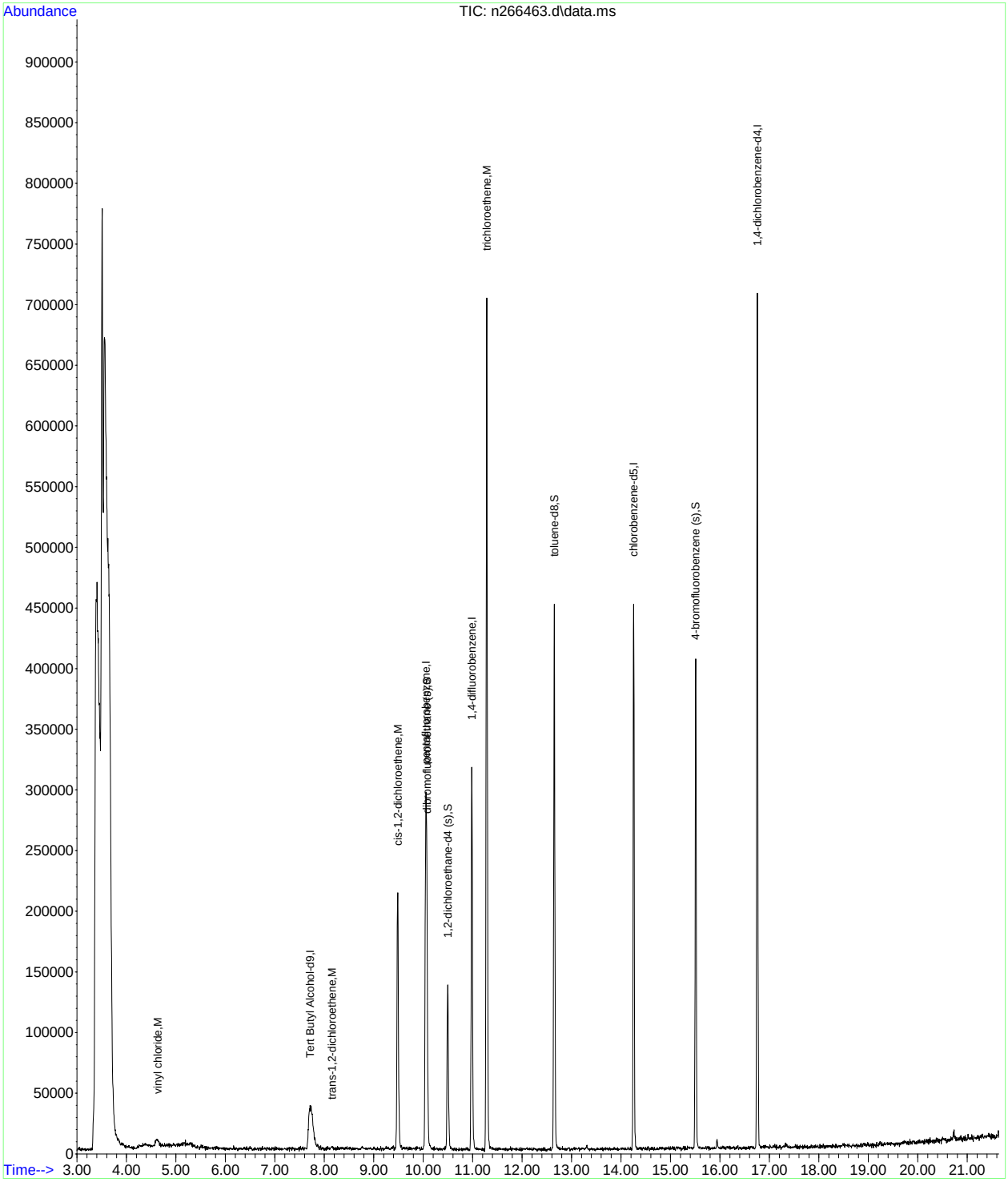
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.713	65	114168	300.00	ug/L	0.02
4) pentafluorobenzene	10.051	168	183625	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.982	114	238121	30.00	ug/L	0.00
74) chlorobenzene-d5	14.256	117	228588	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.756	152	168488	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.072	113	94250	33.02	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.07%			
54) 1,2-dichloroethane-d4 (s)	10.495	65	97927	33.44	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 111.47%			
75) toluene-d8	12.650	98	271834	27.26	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 90.87%			
97) 4-bromofluorobenzene (s)	15.506	95	116926	29.96	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.87%			
Target Compounds						Qvalue
10) vinyl chloride	4.627	62	14675	2.39	ug/L	96
28) trans-1,2-dichloroethene	8.152	96	1397	0.49	ug/L #	26
39) cis-1,2-dichloroethene	9.486	96	103616	33.77	ug/L	95
62) trichloroethene	11.285	95	218223	96.28	ug/L	91

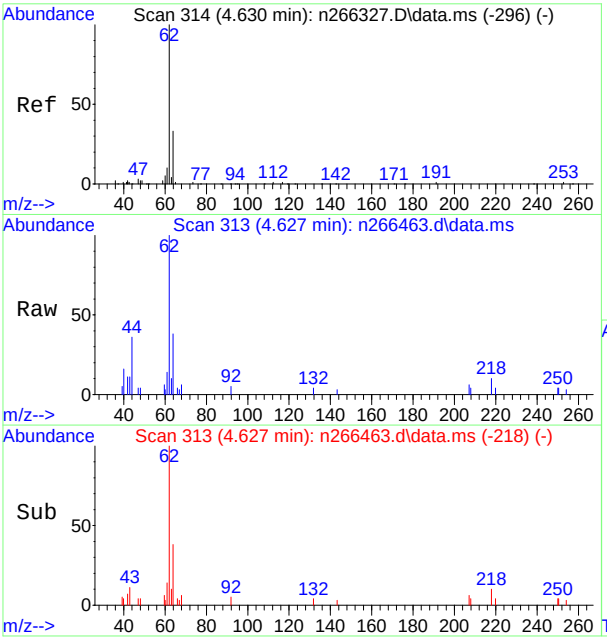
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266463.d
Acq On : 7 Dec 2017 8:46 pm
Operator : CHELSEAS
Sample : jc56672-1
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Dec 08 10:24:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

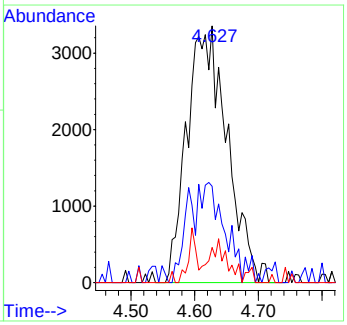


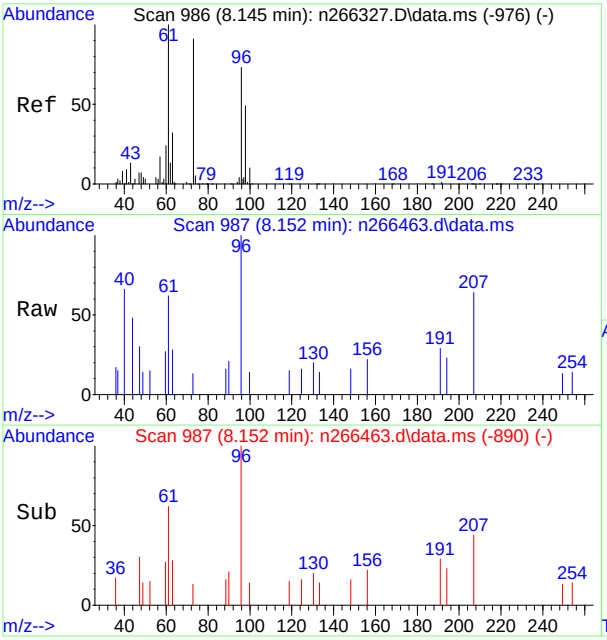


#10
vinyl chloride
Concen: 2.39 ug/L
RT: 4.627 min Scan# 313
Delta R.T. -0.003 min
Lab File: n266463.d
Acq: 7 Dec 2017 8:46 pm

Tgt Ion: 62 Resp: 14675

Ion	Ratio	Lower	Upper
62	100		
64	31.2	2.6	62.6
61	13.7	0.0	39.7

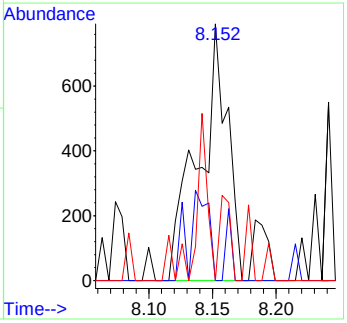


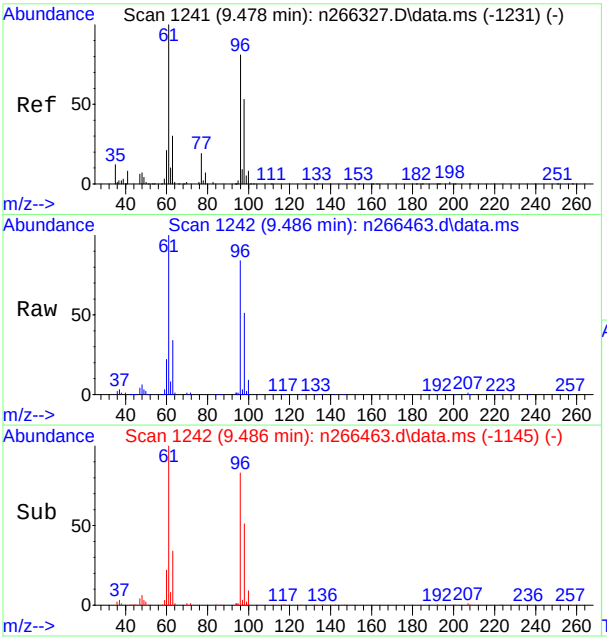


#28
trans-1,2-dichloroethene
Concen: 0.49 ug/L
RT: 8.152 min Scan# 987
Delta R.T. 0.008 min
Lab File: n266463.d
Acq: 7 Dec 2017 8:46 pm

Tgt Ion: 96 Resp: 1397

Ion	Ratio	Lower	Upper
96	100		
60	0.0	1.4	61.4#
98	0.0	34.5	94.5#

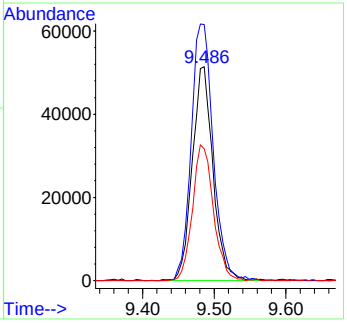


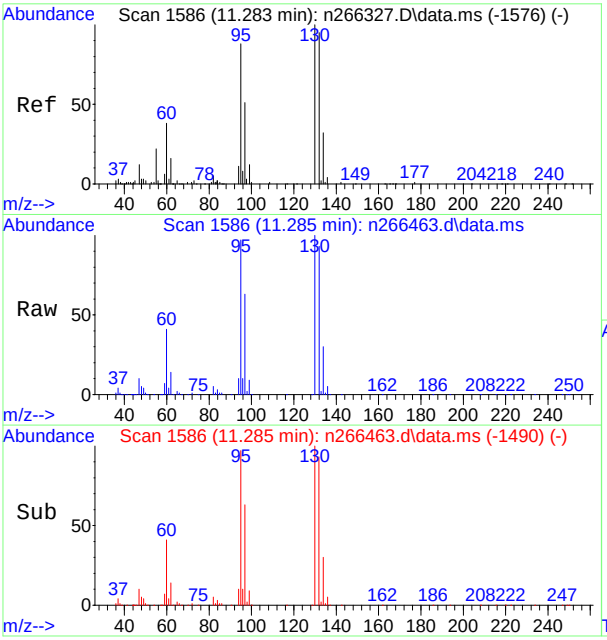


#39
cis-1,2-dichloroethene
Concen: 33.77 ug/L
RT: 9.486 min Scan# 1242
Delta R.T. 0.008 min
Lab File: n266463.d
Acq: 7 Dec 2017 8:46 pm

Tgt Ion: 96 Resp: 103616

Ion	Ratio	Lower	Upper
96	100		
61	119.6	94.2	154.2
98	61.6	35.9	95.9

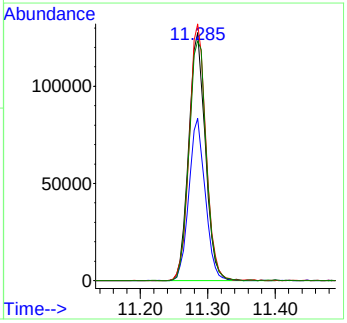




#62
trichloroethene
Concen: 96.28 ug/L
RT: 11.285 min Scan# 1586
Delta R.T. 0.002 min
Lab File: n266463.d
Acq: 7 Dec 2017 8:46 pm

Tgt Ion: 95 Resp: 218223

Ion	Ratio	Lower	Upper
95	100		
97	65.4	31.3	91.3
130	103.5	84.0	144.0
132	96.6	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266464.d
Acq On : 7 Dec 2017 9:15 pm
Operator : CHELSEAS
Sample : jc56672-2
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 08 12:55:37 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

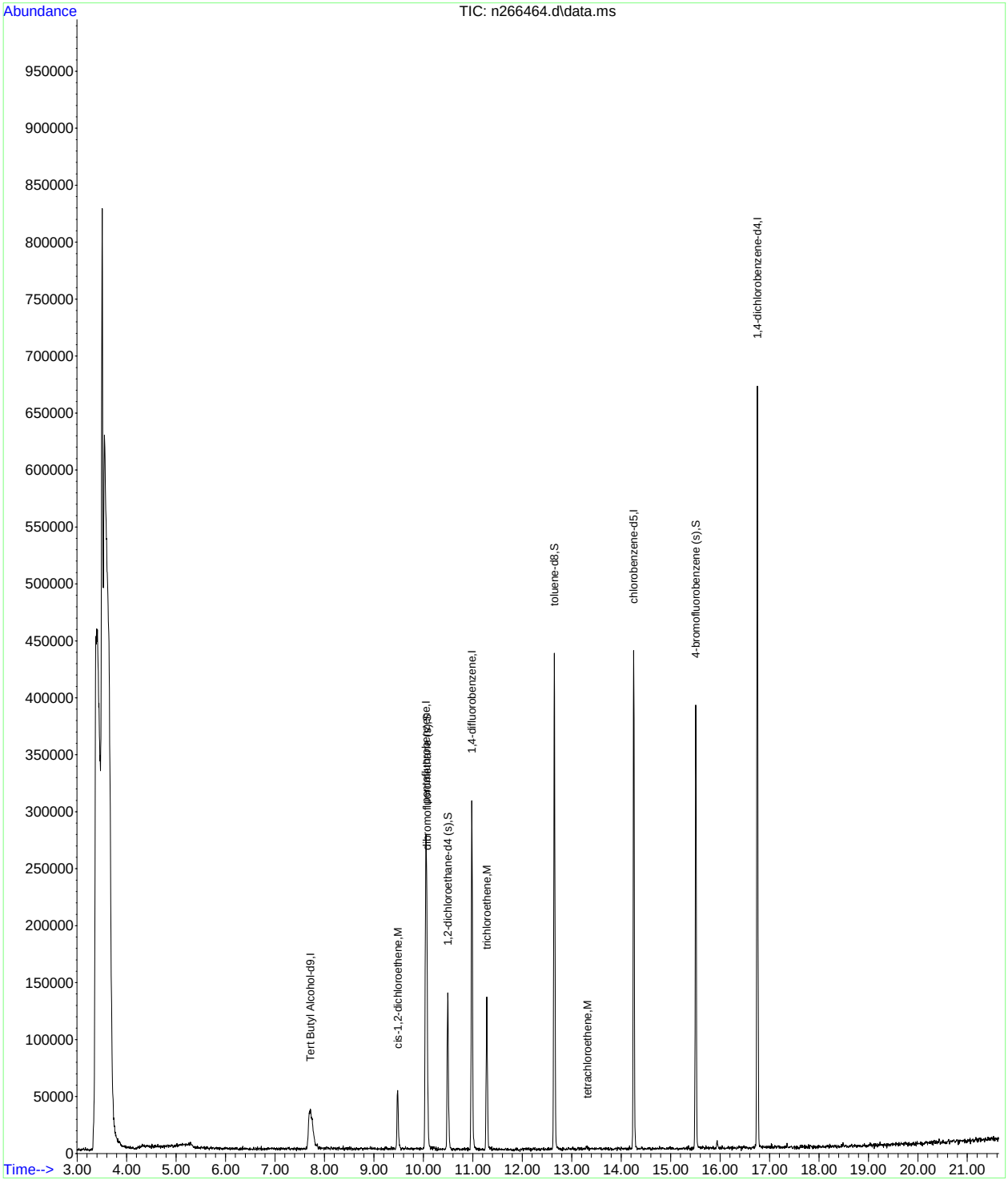
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.716	65	105374	300.00	ug/L	0.02
4) pentafluorobenzene	10.049	168	166362	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	227193	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	215574	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	159050	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.070	113	84308	32.60	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.67%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	95250	34.09	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.63%			
75) toluene-d8	12.649	98	268571	28.56	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.20%			
97) 4-bromofluorobenzene (s)	15.509	95	108588	29.48	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.27%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.484	96	23095	8.31	ug/L	95
62) trichloroethene	11.283	95	41509	19.20	ug/L	89
80) tetrachloroethene	13.313	164	654	0.29	ug/L #	67

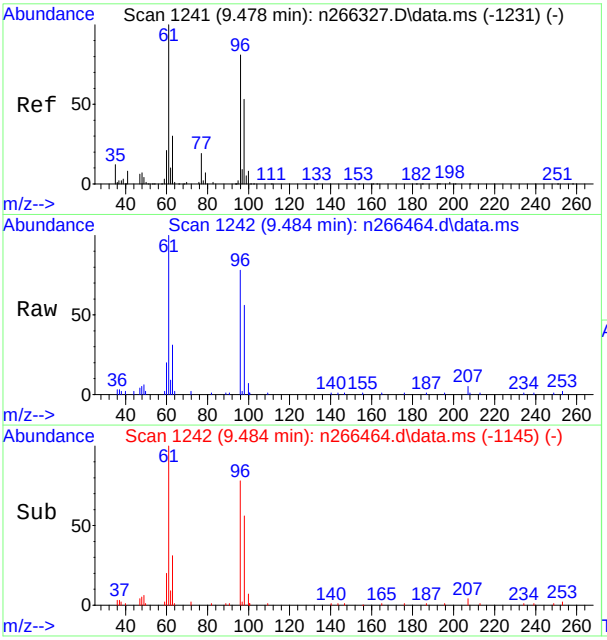
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266464.d
Acq On : 7 Dec 2017 9:15 pm
Operator : CHELSEAS
Sample : jc56672-2
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 08 12:55:37 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

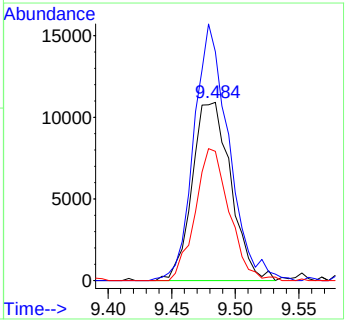


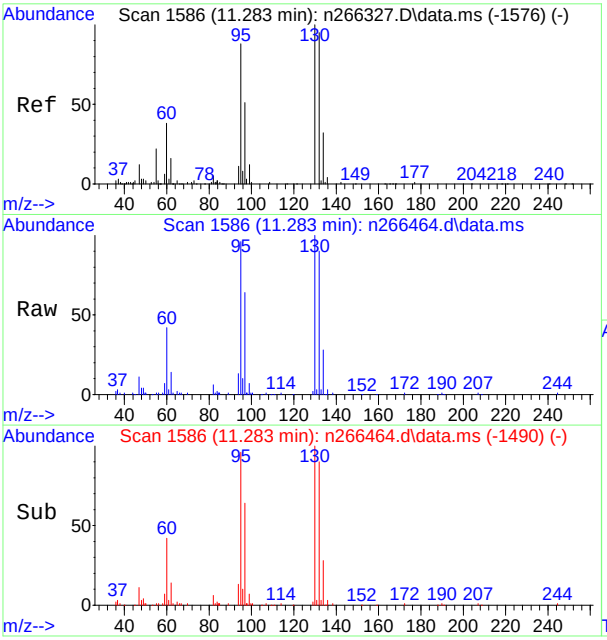


#39
cis-1,2-dichloroethene
Concen: 8.31 ug/L
RT: 9.484 min Scan# 1242
Delta R.T. 0.006 min
Lab File: n266464.d
Acq: 7 Dec 2017 9:15 pm

Tgt Ion: 96 Resp: 23095

Ion	Ratio	Lower	Upper
96	100		
61	127.2	94.2	154.2
98	72.5	35.9	95.9

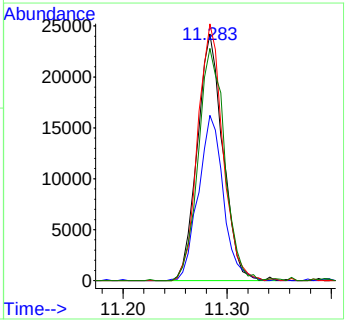


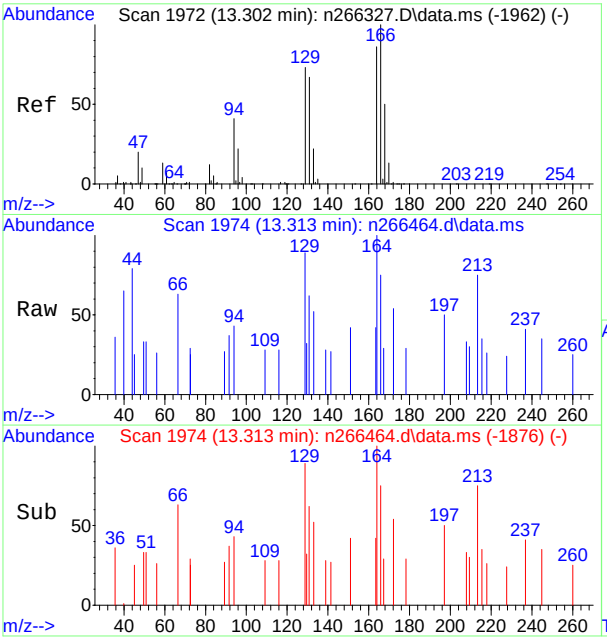


#62
trichloroethene
Concen: 19.20 ug/L
RT: 11.283 min Scan# 1586
Delta R.T. 0.001 min
Lab File: n266464.d
Acq: 7 Dec 2017 9:15 pm

Tgt Ion: 95 Resp: 41509

Ion	Ratio	Lower	Upper
95	100		
97	68.4	31.3	91.3
130	104.2	84.0	144.0
132	94.2	78.3	138.3

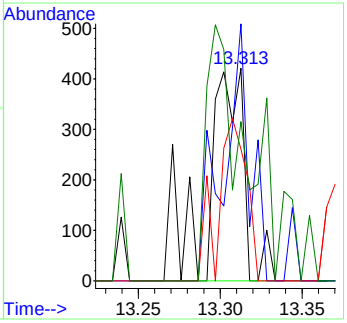




#80
tetrachloroethene
Concen: 0.29 ug/L
RT: 13.313 min Scan# 1974
Delta R.T. 0.011 min
Lab File: n266464.d
Acq: 7 Dec 2017 9:15 pm

Tgt Ion:164 Resp: 654

Ion	Ratio	Lower	Upper
164	100		
129	120.9	54.6	114.6#
131	62.0	48.3	108.3
166	74.8	86.8	146.8#



SGS ACCUTEST
JC56672

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266465.d
Acq On : 7 Dec 2017 9:45 pm
Operator : CHELSEAS
Sample : jc56672-3
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Dec 08 10:26:10 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

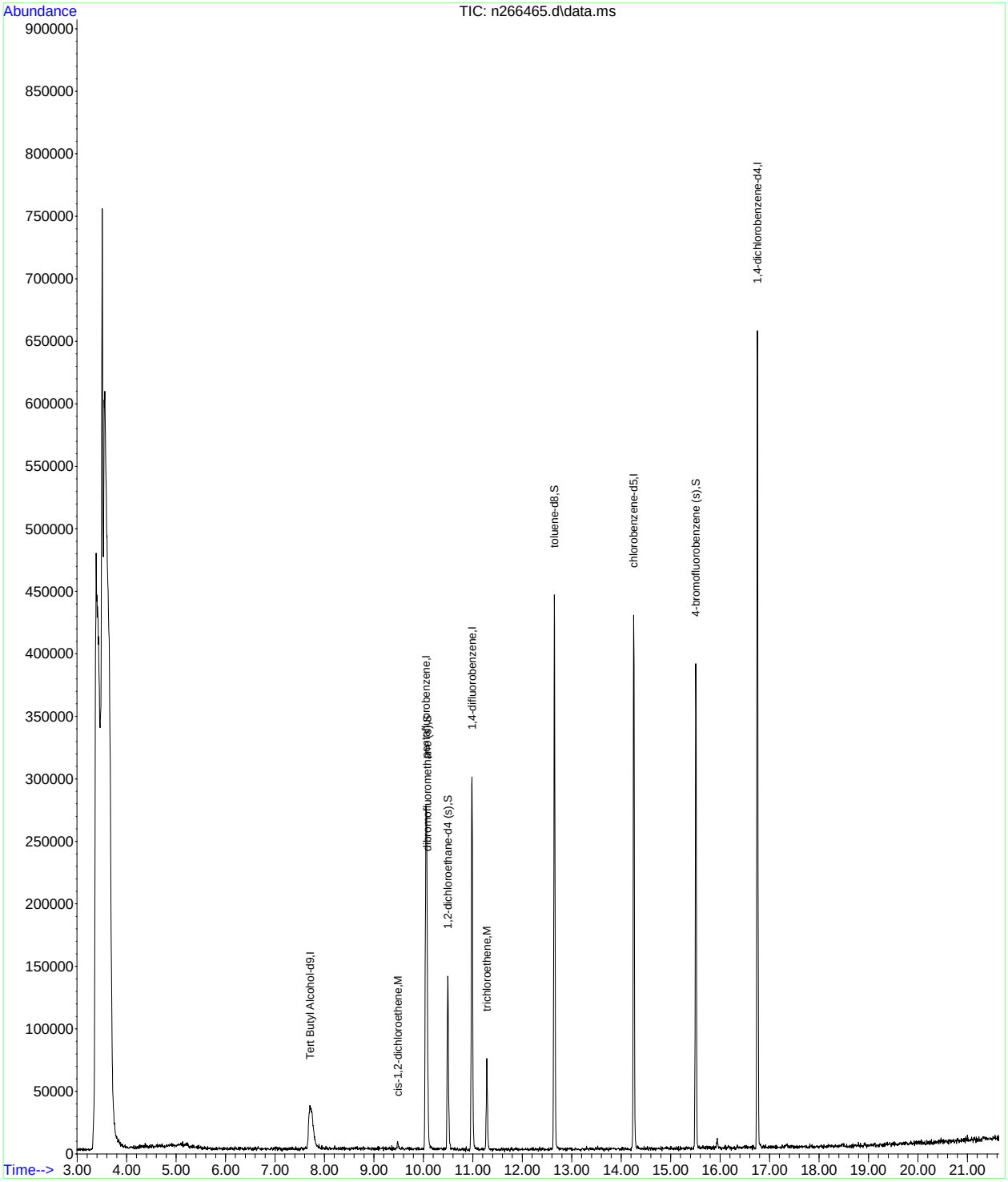
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.710	65	107072	300.00	ug/L	0.02
4) pentafluorobenzene	10.053	168	165996	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.984	114	229429	30.00	ug/L	0.00
74) chlorobenzene-d5	14.253	117	219154	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.753	152	161092	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.074	113	86347	33.46	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.53%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	96246	34.11	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.70%			
75) toluene-d8	12.648	98	268502	28.09	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.63%			
97) 4-bromofluorobenzene (s)	15.508	95	109743	29.41	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.03%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.483	96	2343	0.84	ug/L	96
62) trichloroethene	11.283	95	20911	9.58	ug/L	97

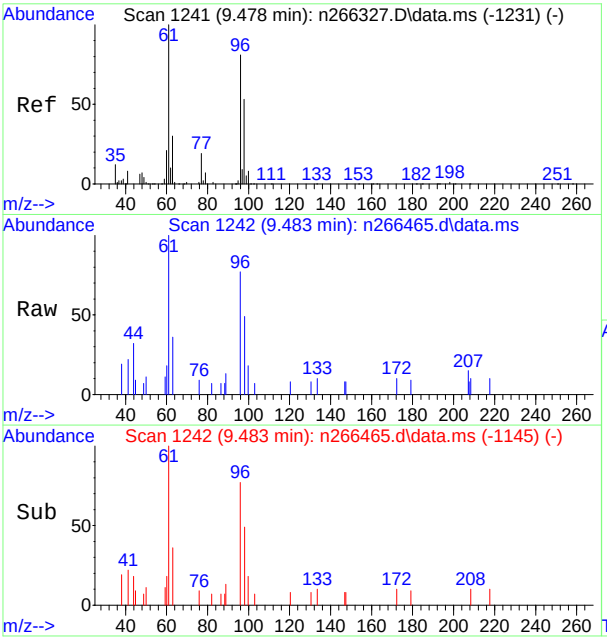
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266465.d
Acq On : 7 Dec 2017 9:45 pm
Operator : CHELSEAS
Sample : jc56672-3
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Dec 08 10:26:10 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

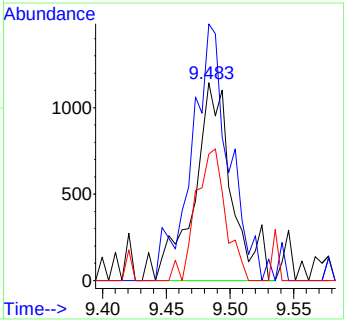


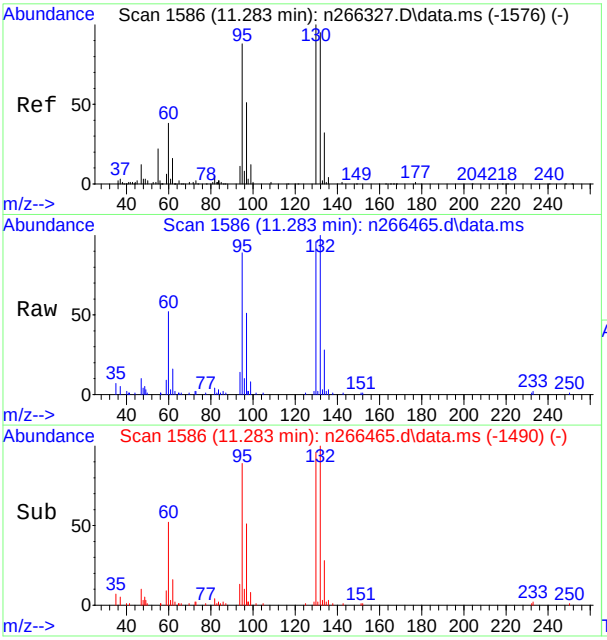


#39
cis-1,2-dichloroethene
Concen: 0.84 ug/L
RT: 9.483 min Scan# 1242
Delta R.T. 0.005 min
Lab File: n266465.d
Acq: 7 Dec 2017 9:45 pm

Tgt Ion: 96 Resp: 2343

Ion	Ratio	Lower	Upper
96	100		
61	129.8	94.2	154.2
98	64.0	35.9	95.9

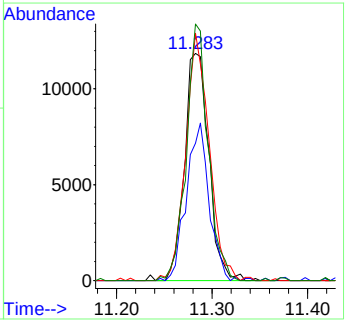




#62
trichloroethene
Concen: 9.58 ug/L
RT: 11.283 min Scan# 1586
Delta R.T. -0.000 min
Lab File: n266465.d
Acq: 7 Dec 2017 9:45 pm

Tgt Ion: 95 Resp: 20911

Ion	Ratio	Lower	Upper
95	100		
97	60.5	31.3	91.3
130	111.5	84.0	144.0
132	112.9	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266466.d
Acq On : 7 Dec 2017 10:14 pm
Operator : CHELSEAS
Sample : jc56672-4
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Dec 08 10:27:06 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

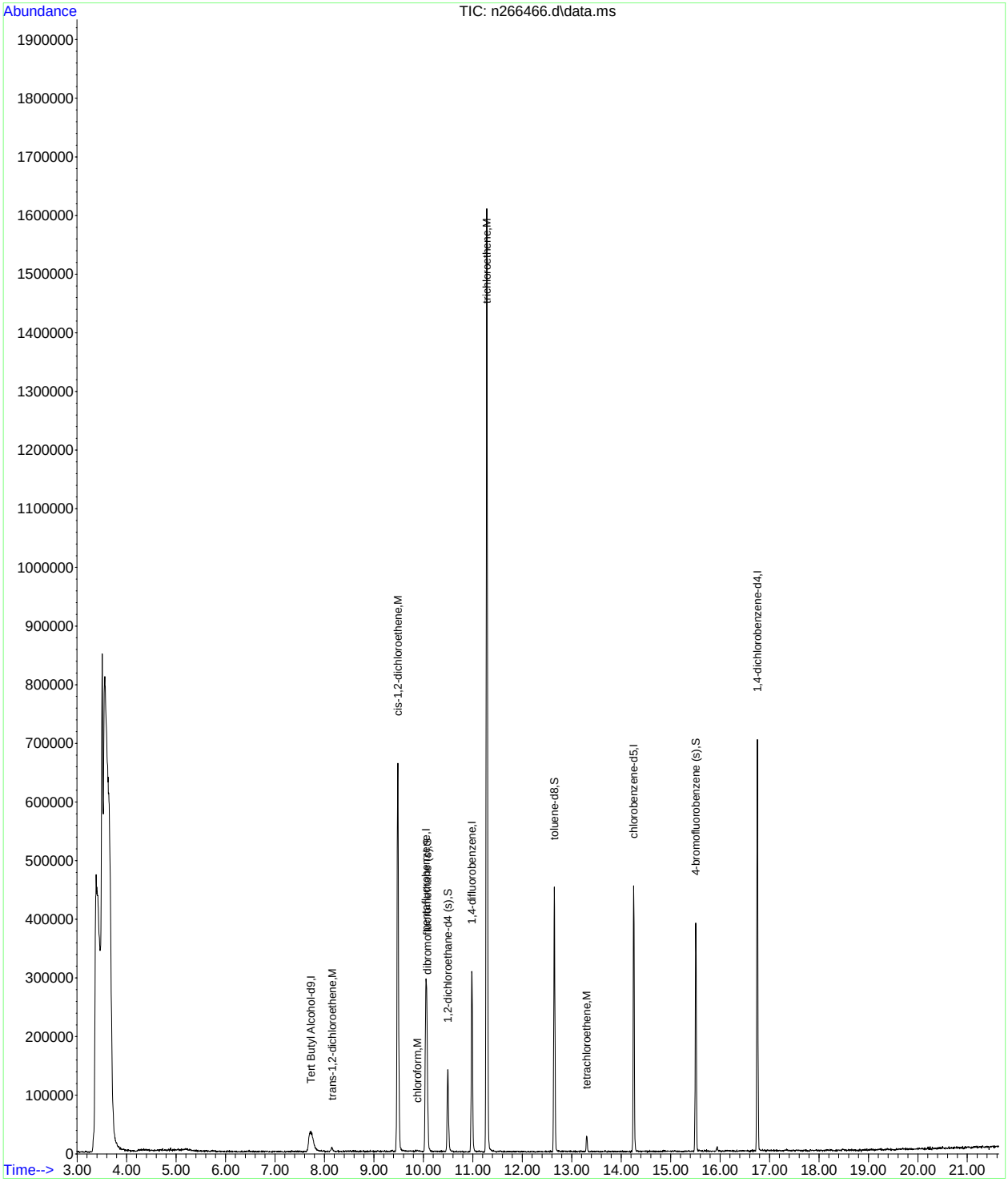
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.727	65	106724	300.00	ug/L	0.03
4) pentafluorobenzene	10.055	168	185417	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	241292	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	225649	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	168383	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	94070	32.64	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.80%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	103310	34.81	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 116.03%			
75) toluene-d8	12.649	98	281379	28.59	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.30%			
97) 4-bromofluorobenzene (s)	15.510	95	116757	29.94	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.80%			
Target Compounds						Qvalue
28) trans-1,2-dichloroethene	8.156	96	3186	1.12	ug/L	80
39) cis-1,2-dichloroethene	9.484	96	318648	102.83	ug/L	97
44) chloroform	9.877	85	889	0.28	ug/L	89
62) trichloroethene	11.284	95	505066	219.92	ug/L	93
80) tetrachloroethene	13.302	164	6120	2.60	ug/L	82

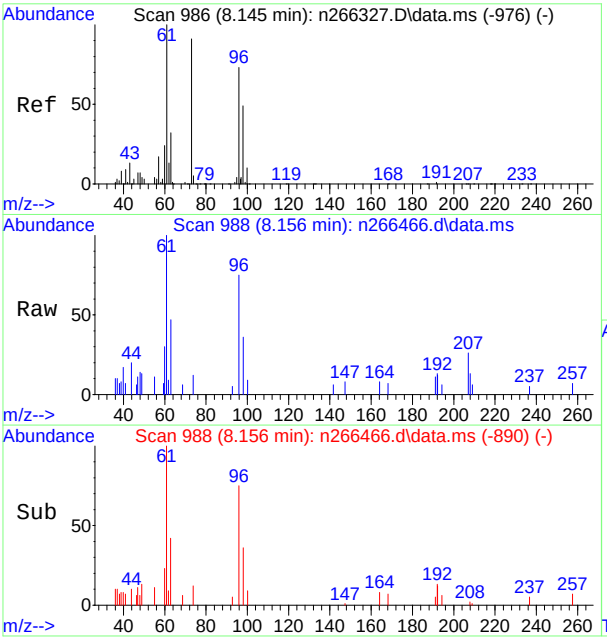
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266466.d
Acq On : 7 Dec 2017 10:14 pm
Operator : CHELSEAS
Sample : jc56672-4
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Dec 08 10:27:06 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

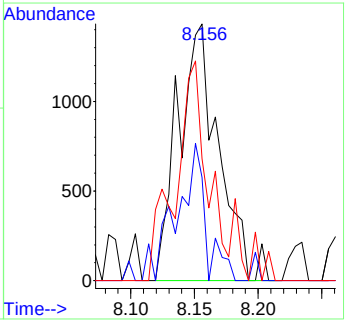


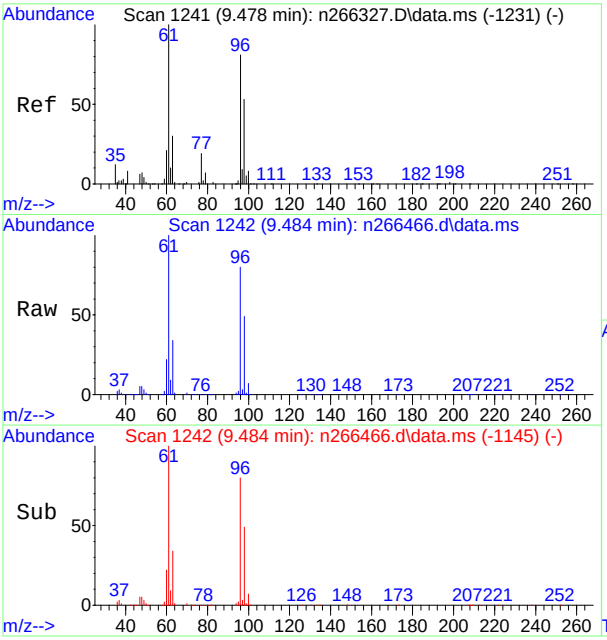


#28
trans-1,2-dichloroethene
Concen: 1.12 ug/L
RT: 8.156 min Scan# 988
Delta R.T. 0.011 min
Lab File: n266466.d
Acq: 7 Dec 2017 10:14 pm

Tgt Ion: 96 Resp: 3186

Ion	Ratio	Lower	Upper
96	100		
60	40.2	1.4	61.4
98	47.5	34.5	94.5

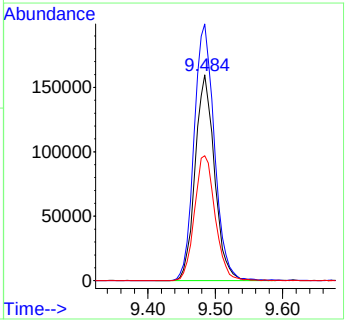


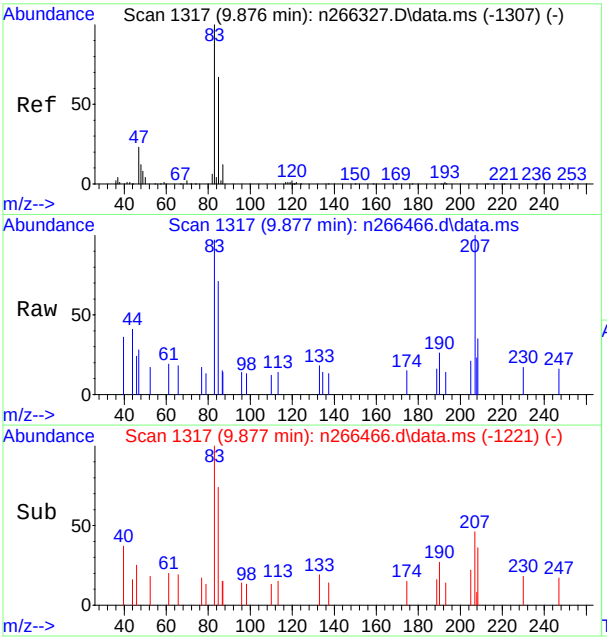


#39
cis-1,2-dichloroethene
Concen: 102.83 ug/L
RT: 9.484 min Scan# 1242
Delta R.T. 0.006 min
Lab File: n266466.d
Acq: 7 Dec 2017 10:14 pm

Tgt Ion: 96 Resp: 318648

Ion	Ratio	Lower	Upper
96	100		
61	124.8	94.2	154.2
98	60.8	35.9	95.9

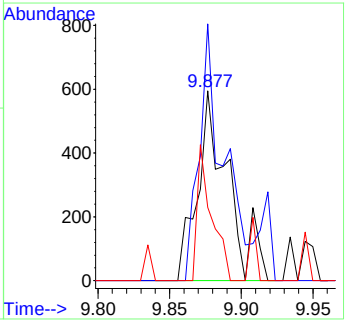


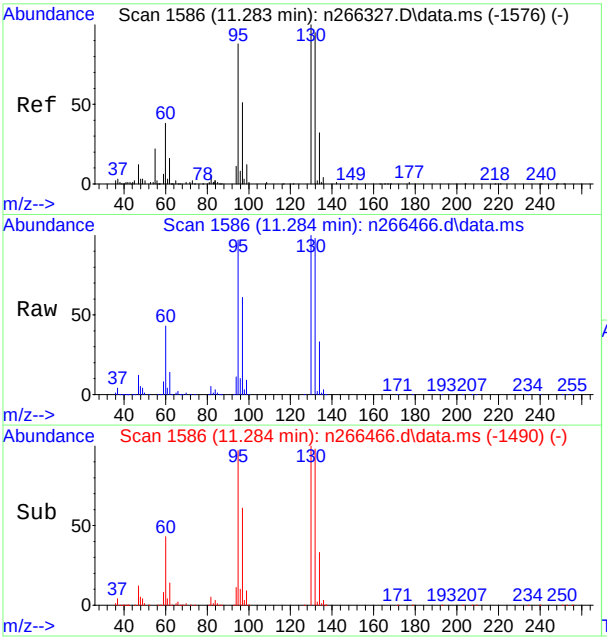


#44
chloroform
Concen: 0.28 ug/L
RT: 9.877 min Scan# 1317
Delta R.T. 0.001 min
Lab File: n266466.d
Acq: 7 Dec 2017 10:14 pm

Tgt Ion: 85 Resp: 889

Ion	Ratio	Lower	Upper
85	100		
83	135.3	119.4	179.4
47	38.7	3.9	63.9

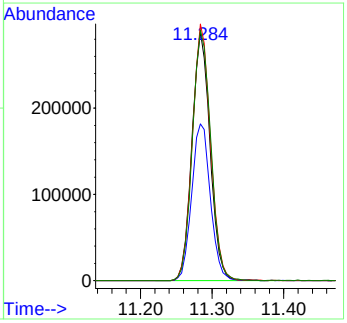


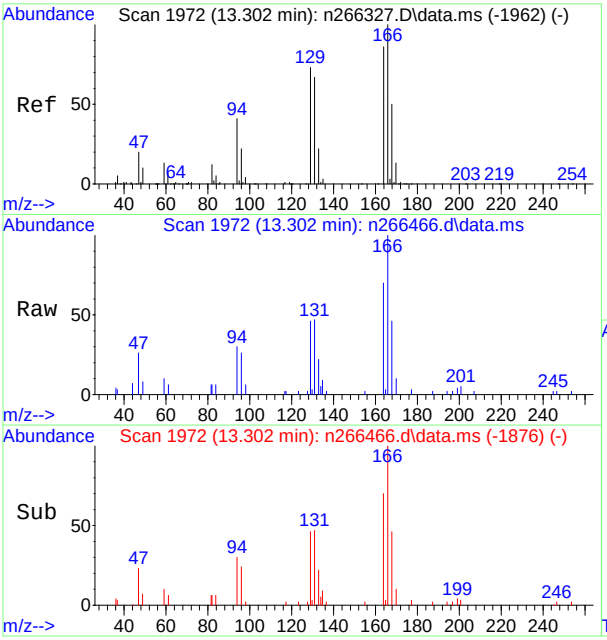


#62
trichloroethene
Concen: 219.92 ug/L
RT: 11.284 min Scan# 1586
Delta R.T. 0.001 min
Lab File: n266466.d
Acq: 7 Dec 2017 10:14 pm

Tgt Ion: 95 Resp: 505066

Ion	Ratio	Lower	Upper
95	100		
97	63.0	31.3	91.3
130	103.3	84.0	144.0
132	100.8	78.3	138.3

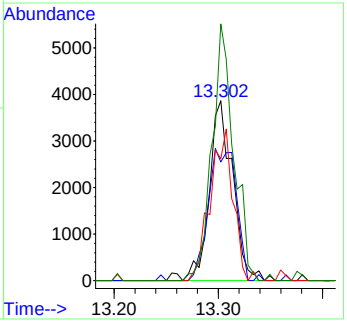




#80
tetrachloroethene
Concen: 2.60 ug/L
RT: 13.302 min Scan# 1972
Delta R.T. 0.001 min
Lab File: n266466.d
Acq: 7 Dec 2017 10:14 pm

Tgt Ion:164 Resp: 6120

Ion	Ratio	Lower	Upper
164	100		
129	70.7	54.6	114.6
131	67.7	48.3	108.3
166	142.6	86.8	146.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266480.D
Acq On : 8 Dec 2017 11:52 am
Operator : CHELSEAS
Sample : jc56672-4
Misc : MS22856,VN11229,5,,,,10
ALS Vial : 37 Sample Multiplier: 1

Quant Time: Dec 08 13:37:59 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

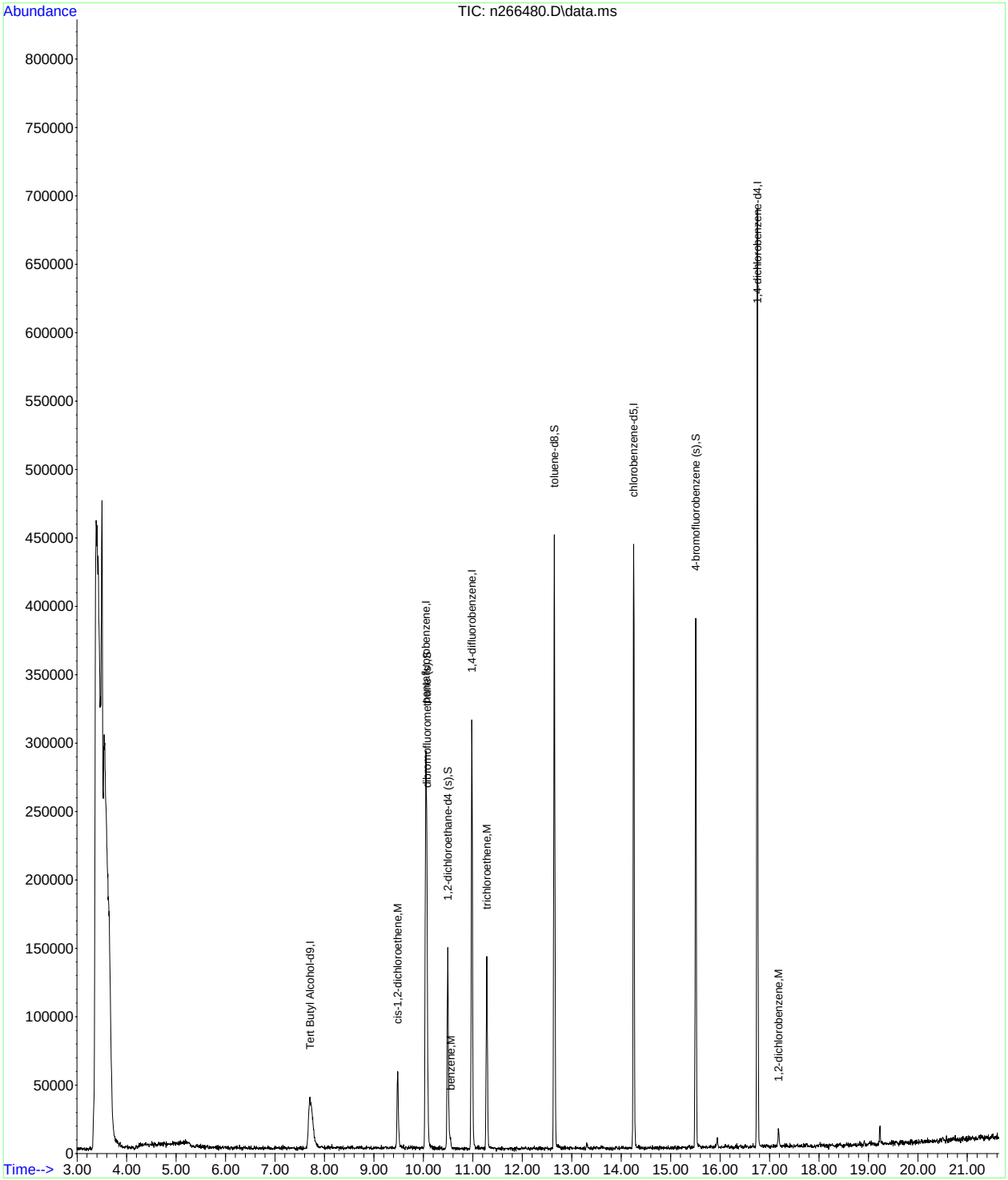
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.706	65	106195	300.00	ug/L	0.01
4) pentafluorobenzene	10.055	168	171522	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	233905	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	224898	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	160457	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.076	113	90127	33.80	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 112.67%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	96215	33.45	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 111.50%			
75) toluene-d8	12.649	98	271220	27.65	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.17%			
97) 4-bromofluorobenzene (s)	15.510	95	112300	30.22	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.73%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.485	96	26529	9.25	ug/L	96
57) benzene	10.546	78	5695	0.65	ug/L	99
62) trichloroethene	11.284	95	43656	19.61	ug/L	97
112) 1,2-dichlorobenzene	17.183	146	5219	0.67	ug/L	92

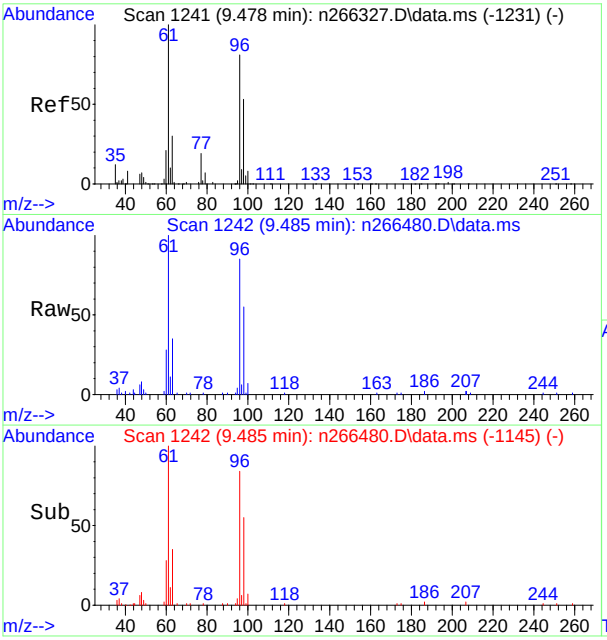
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266480.D
Acq On : 8 Dec 2017 11:52 am
Operator : CHELSEAS
Sample : jc56672-4
Misc : MS22856,VN11229,5,,,,10
ALS Vial : 37 Sample Multiplier: 1

Quant Time: Dec 08 13:37:59 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

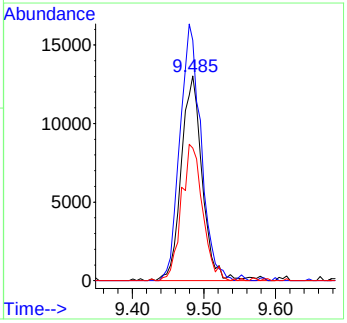


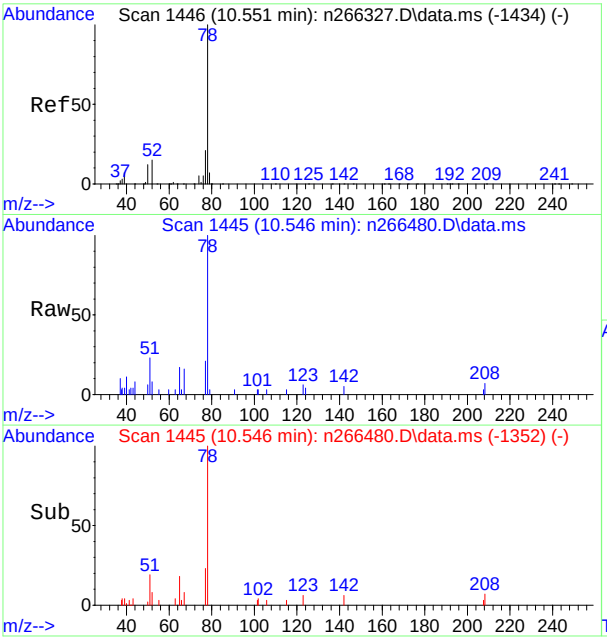


#39
cis-1,2-dichloroethene
Concen: 9.25 ug/L
RT: 9.485 min Scan# 1242
Delta R.T. 0.006 min
Lab File: n266480.D
Acq: 8 Dec 2017 11:52 am

Tgt Ion: 96 Resp: 26529

Ion	Ratio	Lower	Upper
96	100		
61	117.4	94.2	154.2
98	64.8	35.9	95.9

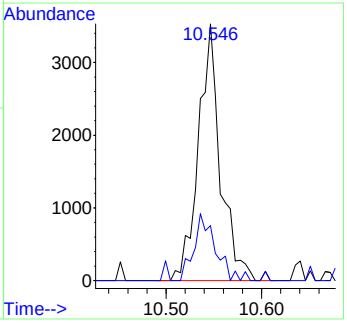


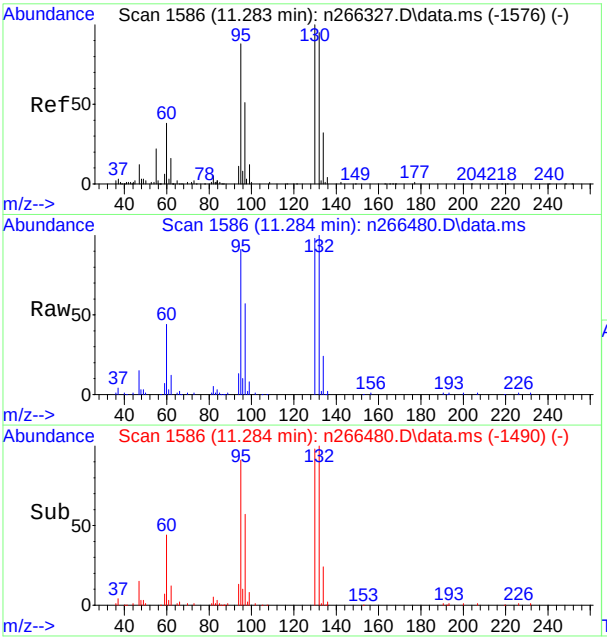


#57
benzene
Concen: 0.65 ug/L
RT: 10.546 min Scan# 1445
Delta R.T. -0.004 min
Lab File: n266480.D
Acq: 8 Dec 2017 11:52 am

Tgt Ion: 78 Resp: 5695

Ion	Ratio	Lower	Upper
78	100		
77	21.5	0.0	50.8

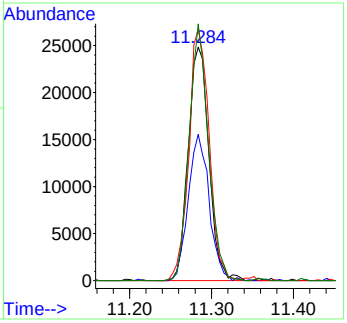


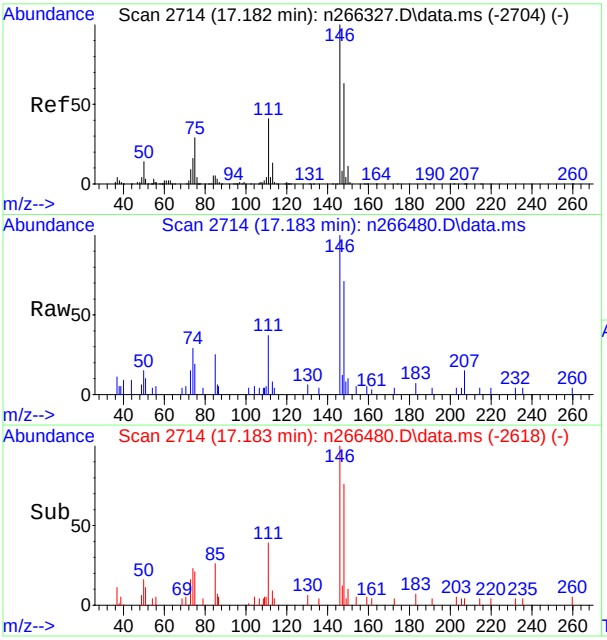


#62
trichloroethene
Concen: 19.61 ug/L
RT: 11.284 min Scan# 1586
Delta R.T. 0.001 min
Lab File: n266480.D
Acq: 8 Dec 2017 11:52 am

Tgt Ion: 95 Resp: 43656

Ion	Ratio	Lower	Upper
95	100		
97	62.6	31.3	91.3
130	107.5	84.0	144.0
132	110.0	78.3	138.3

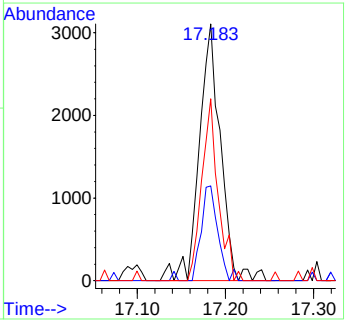




#112
1,2-dichlorobenzene
Concen: 0.67 ug/L
RT: 17.183 min Scan# 2714
Delta R.T. 0.001 min
Lab File: n266480.D
Acq: 8 Dec 2017 11:52 am

Tgt Ion:146 Resp: 5219

Ion	Ratio	Lower	Upper
146	100		
111	36.9	10.9	70.9
148	70.8	33.4	93.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266467.d
Acq On : 7 Dec 2017 10:43 pm
Operator : CHELSEAS
Sample : jc56672-5
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 08 10:28:54 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

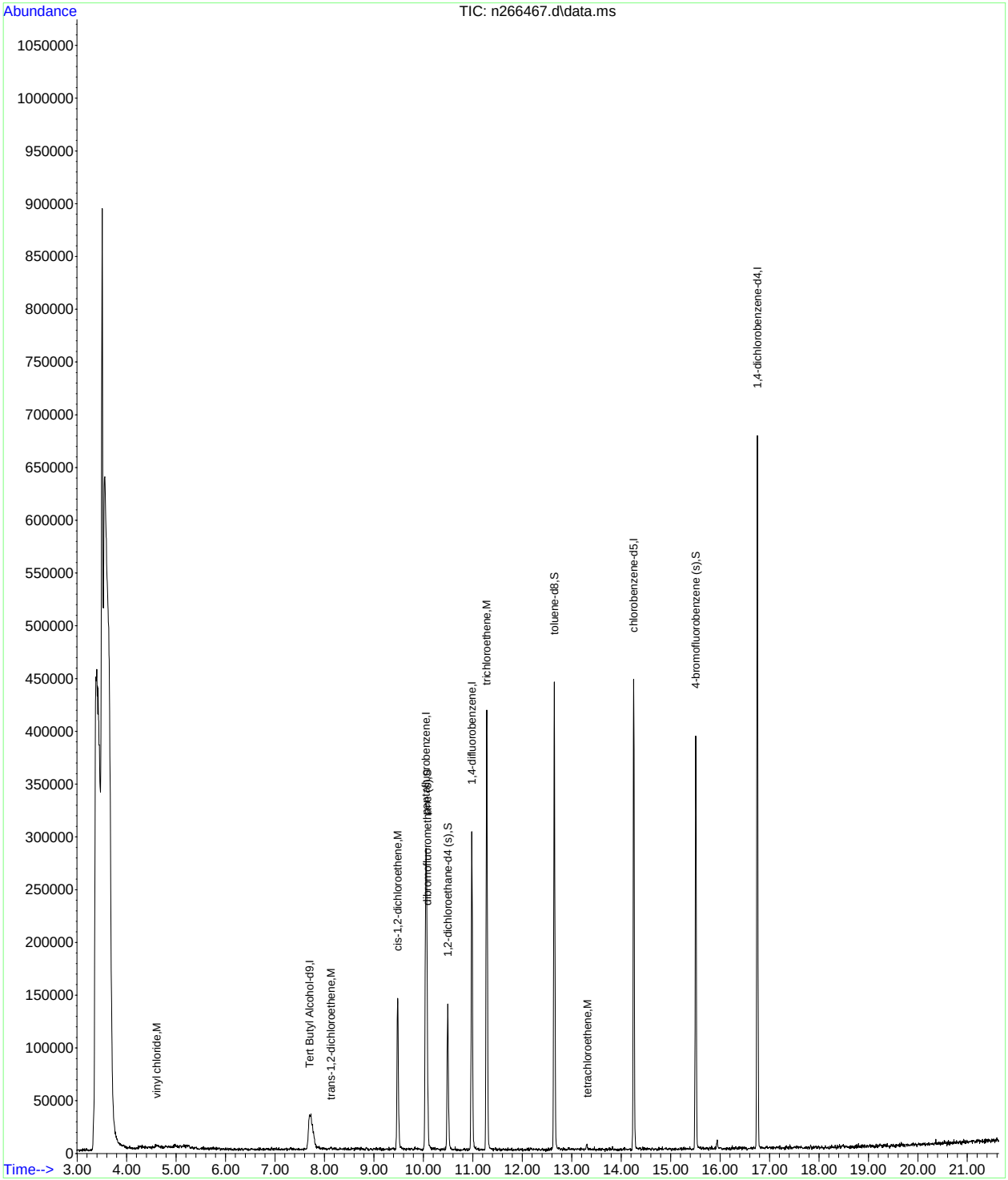
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.701	65	101619	300.00	ug/L	0.00
4) pentafluorobenzene	10.050	168	179780	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	227336	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	215169	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	159514	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.076	113	87272	31.23	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.10%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	97487	34.87	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 116.23%			
75) toluene-d8	12.649	98	271773	28.96	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.53%			
97) 4-bromofluorobenzene (s)	15.510	95	109247	29.57	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.57%			
Target Compounds						Qvalue
10) vinyl chloride	4.610	62	4962	0.83	ug/L	84
28) trans-1,2-dichloroethene	8.135	96	1074	0.39	ug/L #	26
39) cis-1,2-dichloroethene	9.479	96	65662	21.85	ug/L	95
62) trichloroethene	11.279	95	135110	62.44	ug/L	85
80) tetrachloroethene	13.313	164	1120	0.50	ug/L #	77

(#) = qualifier out of range (m) = manual integration (+) = signals summed

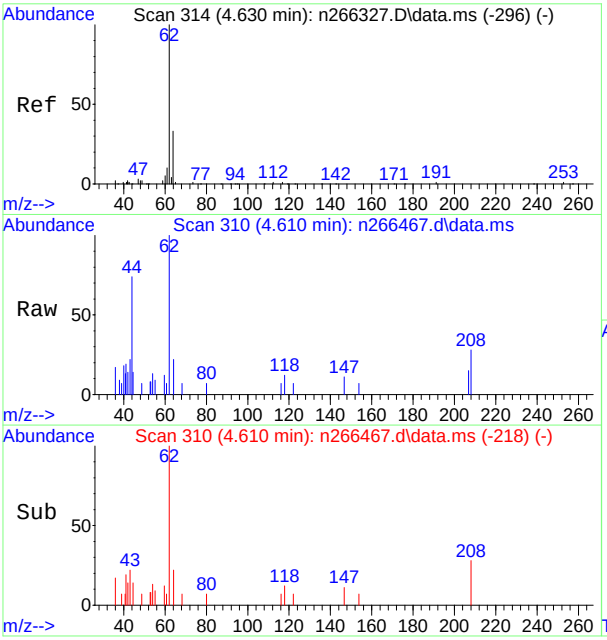
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266467.d
Acq On : 7 Dec 2017 10:43 pm
Operator : CHELSEAS
Sample : jc56672-5
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 08 10:28:54 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



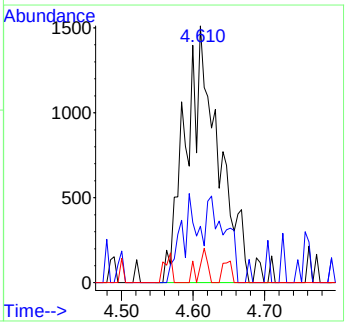
SGS ACCUTEST JC56672

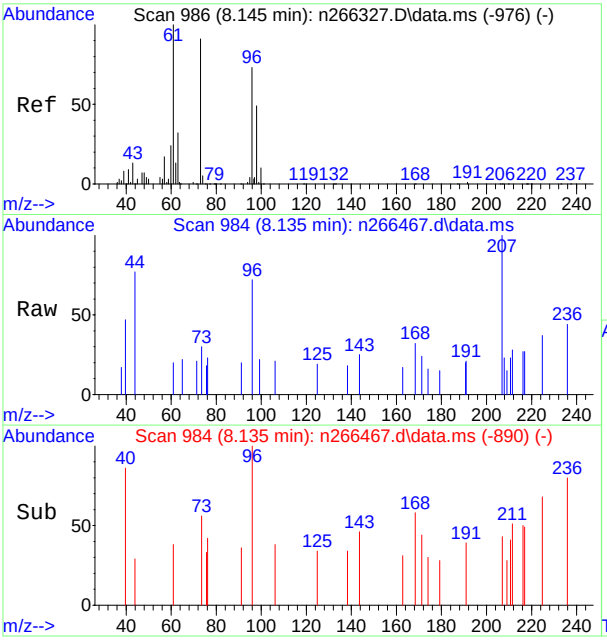


#10
vinyl chloride
Concen: 0.83 ug/L
RT: 4.610 min Scan# 310
Delta R.T. -0.020 min
Lab File: n266467.d
Acq: 7 Dec 2017 10:43 pm

Tgt Ion: 62 Resp: 4962

Ion	Ratio	Lower	Upper
62	100		
64	22.0	2.6	62.6
61	6.7	0.0	39.7

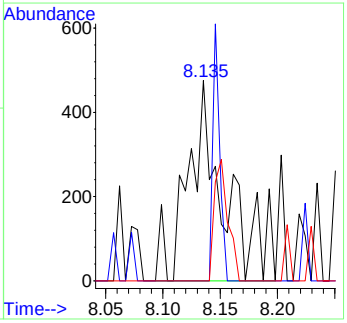


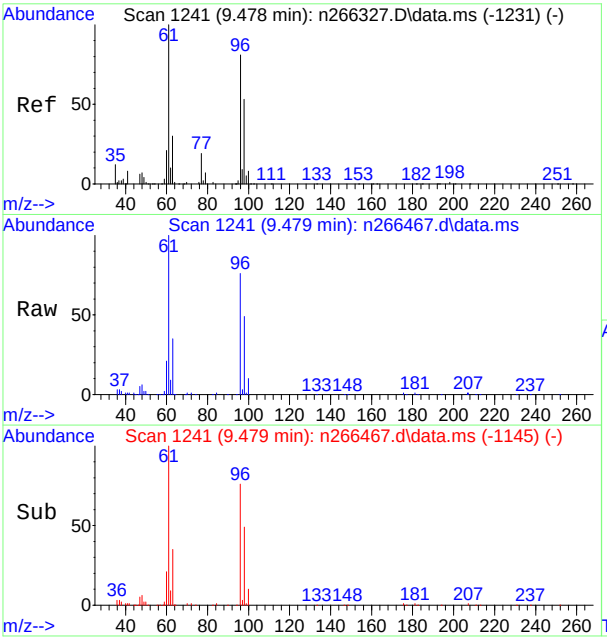


#28
trans-1,2-dichloroethene
Concen: 0.39 ug/L
RT: 8.135 min Scan# 984
Delta R.T. -0.009 min
Lab File: n266467.d
Acq: 7 Dec 2017 10:43 pm

Tgt Ion: 96 Resp: 1074

Ion	Ratio	Lower	Upper
96	100		
60	0.0	1.4	61.4#
98	0.0	34.5	94.5#

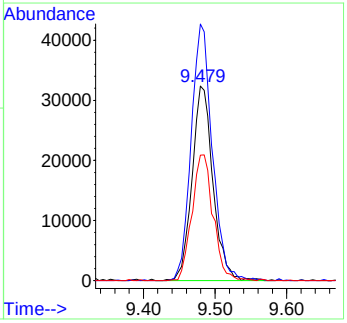


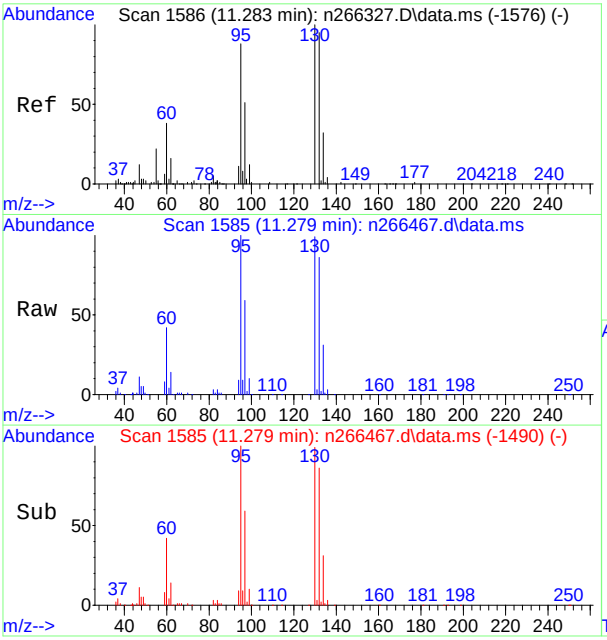


#39
cis-1,2-dichloroethene
Concen: 21.85 ug/L
RT: 9.479 min Scan# 1241
Delta R.T. 0.001 min
Lab File: n266467.d
Acq: 7 Dec 2017 10:43 pm

Tgt Ion: 96 Resp: 65662

Ion	Ratio	Lower	Upper
96	100		
61	132.0	94.2	154.2
98	64.5	35.9	95.9

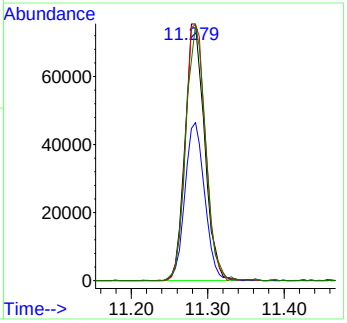


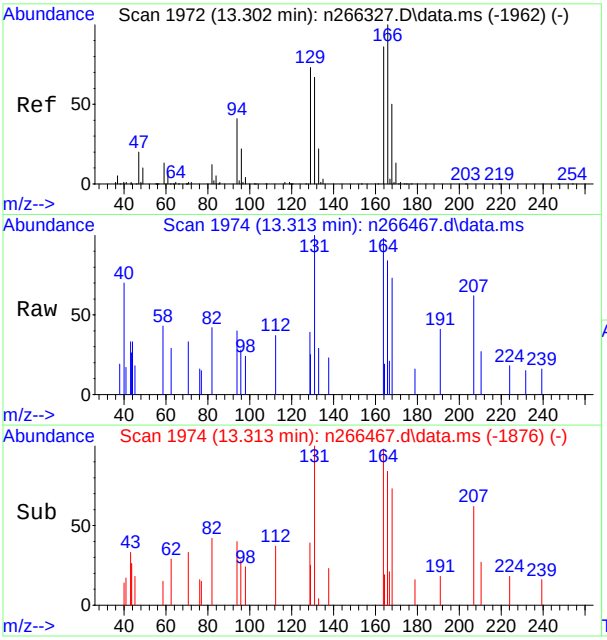


#62
trichloroethene
Concen: 62.44 ug/L
RT: 11.279 min Scan# 1585
Delta R.T. -0.004 min
Lab File: n266467.d
Acq: 7 Dec 2017 10:43 pm

Tgt Ion: 95 Resp: 135110

Ion	Ratio	Lower	Upper
95	100		
97	59.3	31.3	91.3
130	98.6	84.0	144.0
132	85.8	78.3	138.3

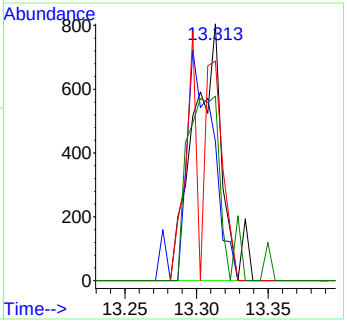




#80
tetrachloroethene
Concen: 0.50 ug/L
RT: 13.313 min Scan# 1974
Delta R.T. 0.012 min
Lab File: n266467.d
Acq: 7 Dec 2017 10:43 pm

Tgt Ion:164 Resp: 1120

Ion	Ratio	Lower	Upper
164	100		
129	54.3	54.6	114.6#
131	85.6	48.3	108.3
166	90.3	86.8	146.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266468.d
Acq On : 7 Dec 2017 11:12 pm
Operator : CHELSEAS
Sample : jc56672-6
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Dec 08 10:29:37 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

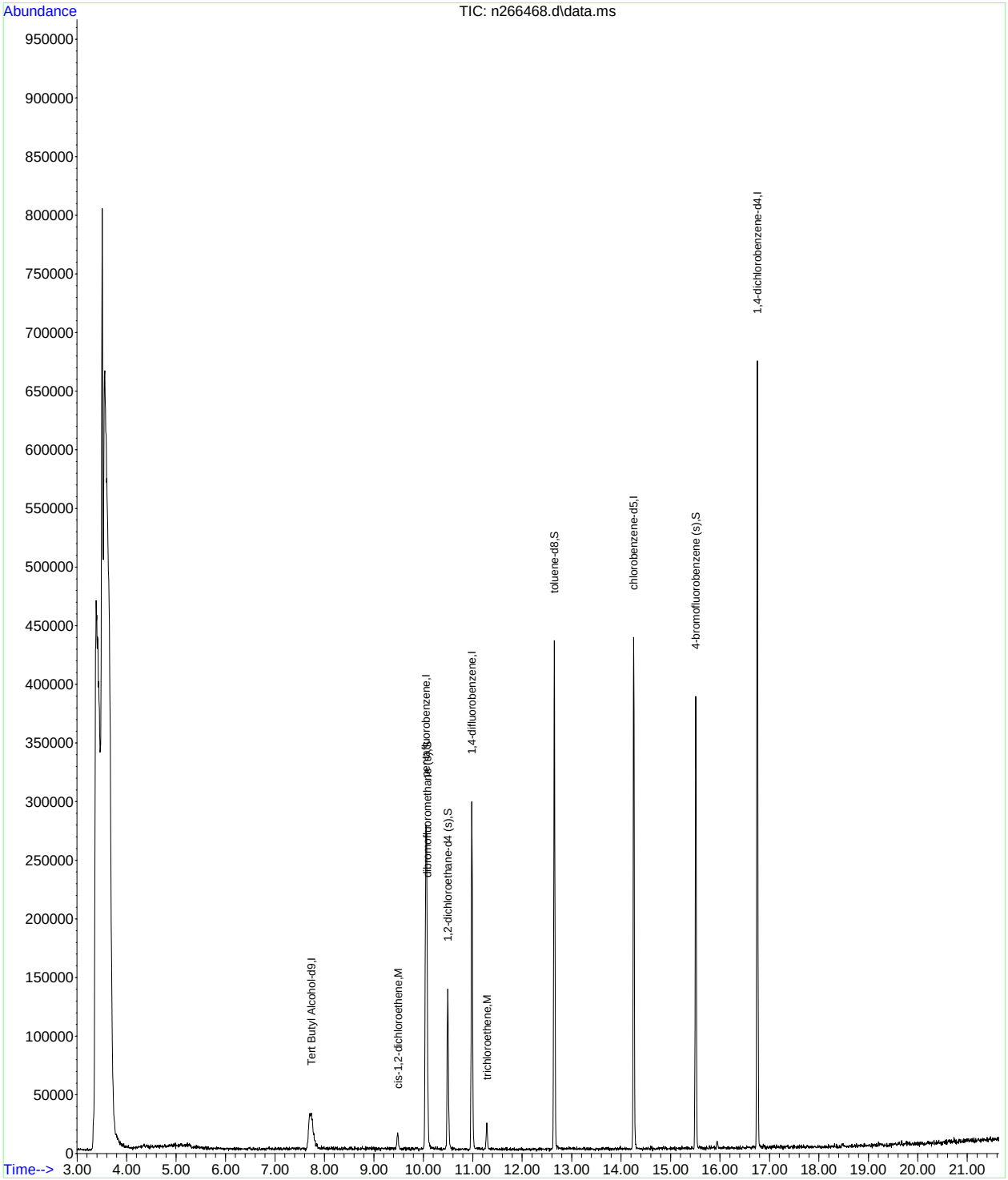
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.738	65	95935	300.00	ug/L	0.04
4) pentafluorobenzene	10.055	168	166518	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	228112	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	216605	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	161286	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.076	113	88040	34.01	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 113.37%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	93941	33.49	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 111.63%			
75) toluene-d8	12.649	98	270619	28.64	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.47%			
97) 4-bromofluorobenzene (s)	15.510	95	110366	29.55	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.50%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.490	96	6388	2.30	ug/L #	68
62) trichloroethene	11.289	95	6968	3.21	ug/L #	73

(#) = qualifier out of range (m) = manual integration (+) = signals summed

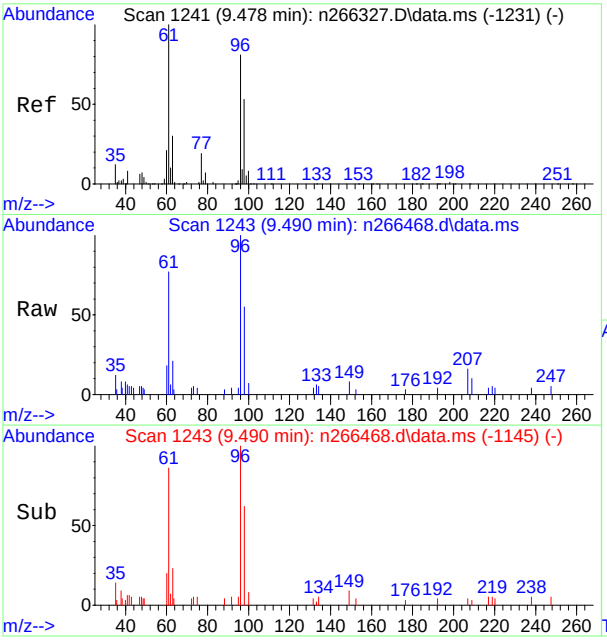
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266468.d
Acq On : 7 Dec 2017 11:12 pm
Operator : CHELSEAS
Sample : jc56672-6
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Dec 08 10:29:37 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



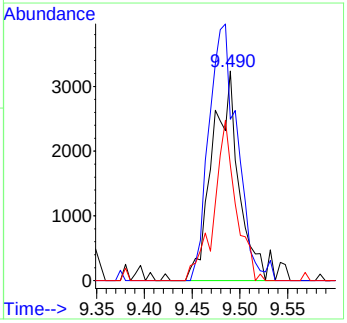
SGS ACCUTEST JC56672

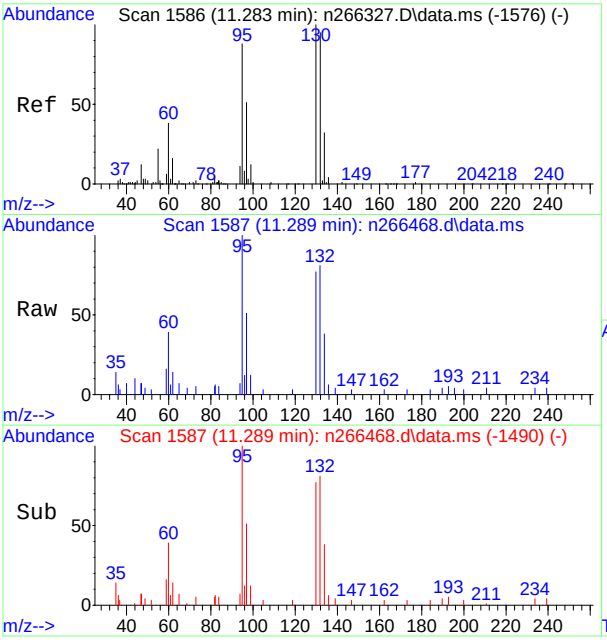


#39
cis-1,2-dichloroethene
Concen: 2.30 ug/L
RT: 9.490 min Scan# 1243
Delta R.T. 0.012 min
Lab File: n266468.d
Acq: 7 Dec 2017 11:12 pm

Tgt Ion: 96 Resp: 6388

Ion	Ratio	Lower	Upper
96	100		
61	77.0	94.2	154.2#
98	55.1	35.9	95.9

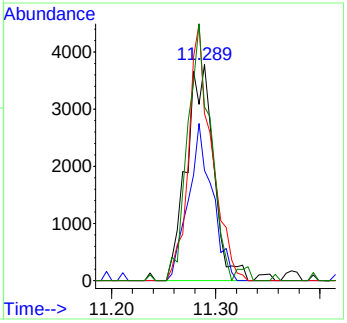




#62
trichloroethene
Concen: 3.21 ug/L
RT: 11.289 min Scan# 1587
Delta R.T. 0.006 min
Lab File: n266468.d
Acq: 7 Dec 2017 11:12 pm

Tgt Ion: 95 Resp: 6968

Ion	Ratio	Lower	Upper
95	100		
97	51.0	31.3	91.3
130	77.3	84.0	144.0#
132	80.5	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266469.d
Acq On : 7 Dec 2017 11:42 pm
Operator : CHELSEAS
Sample : jc56672-7
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Dec 08 10:31:20 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

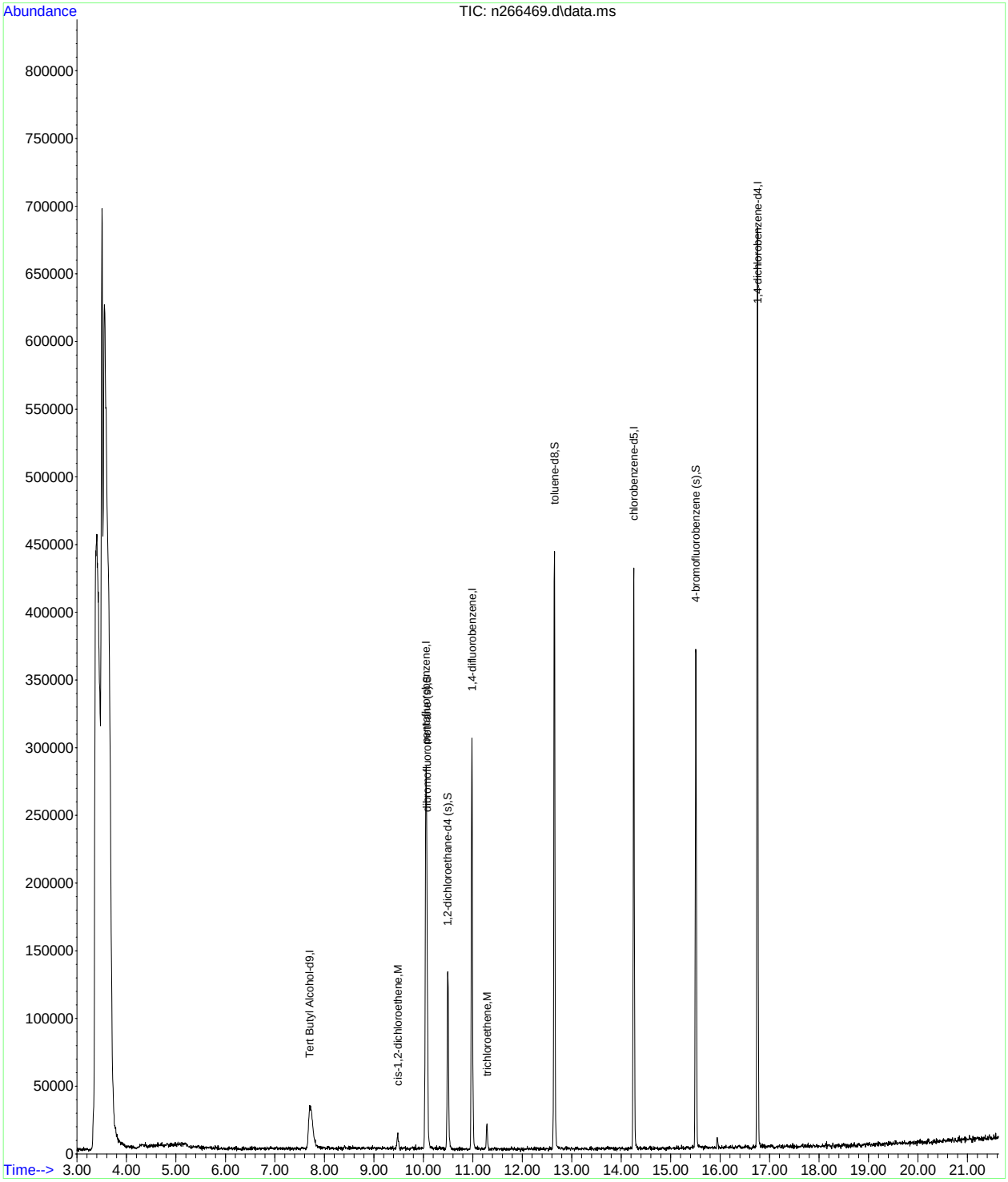
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.703	65	91094	300.00	ug/L	0.00
4) pentafluorobenzene	10.051	168	161827	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.982	114	229919	30.00	ug/L	0.00
74) chlorobenzene-d5	14.256	117	215975	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.756	152	164368	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.072	113	88301	35.10	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 117.00%			
54) 1,2-dichloroethane-d4 (s)	10.491	65	92197	32.61	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 108.70%			
75) toluene-d8	12.651	98	272306	28.90	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.33%			
97) 4-bromofluorobenzene (s)	15.506	95	109573	28.78	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.93%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.487	96	5332	1.97	ug/L #	66
62) trichloroethene	11.286	95	5231	2.39	ug/L	85

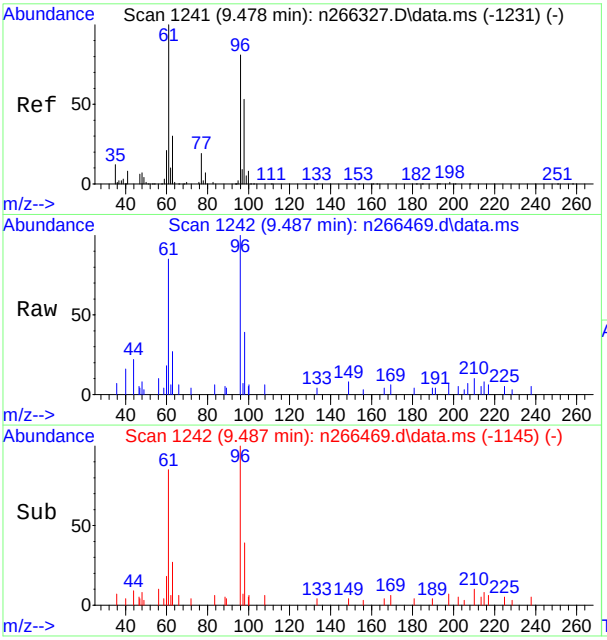
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266469.d
Acq On : 7 Dec 2017 11:42 pm
Operator : CHELSEAS
Sample : jc56672-7
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Dec 08 10:31:20 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

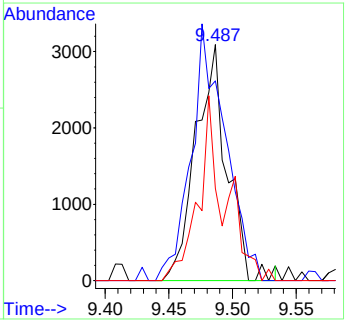


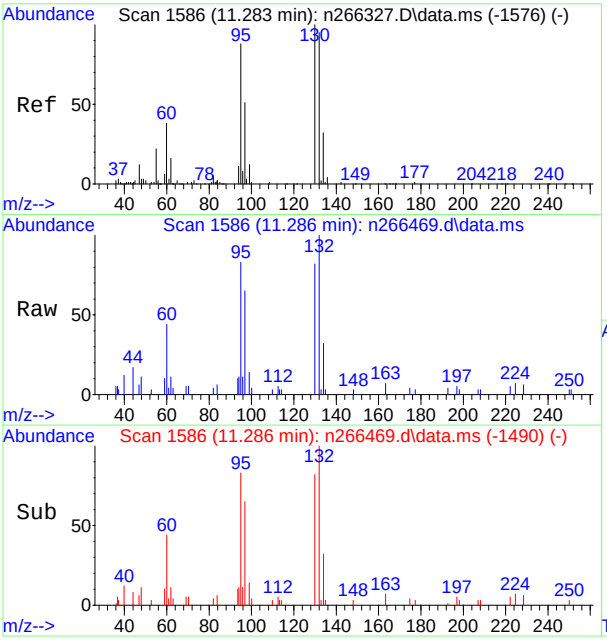


#39
cis-1,2-dichloroethene
Concen: 1.97 ug/L
RT: 9.487 min Scan# 1242
Delta R.T. 0.008 min
Lab File: n266469.d
Acq: 7 Dec 2017 11:42 pm

Tgt Ion: 96 Resp: 5332

Ion	Ratio	Lower	Upper
96	100		
61	84.8	94.2	154.2#
98	39.2	35.9	95.9

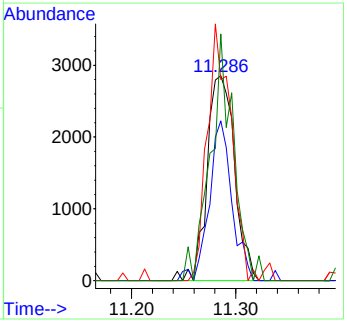




#62
trichloroethene
Concen: 2.39 ug/L
RT: 11.286 min Scan# 1586
Delta R.T. 0.003 min
Lab File: n266469.d
Acq: 7 Dec 2017 11:42 pm

Tgt Ion: 95 Resp: 5231

Ion	Ratio	Lower	Upper
95	100		
97	78.0	31.3	91.3
130	98.1	84.0	144.0
132	120.3	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266470.d
Acq On : 8 Dec 2017 12:11 am
Operator : CHELSEAS
Sample : jc56672-8
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 08 10:32:12 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

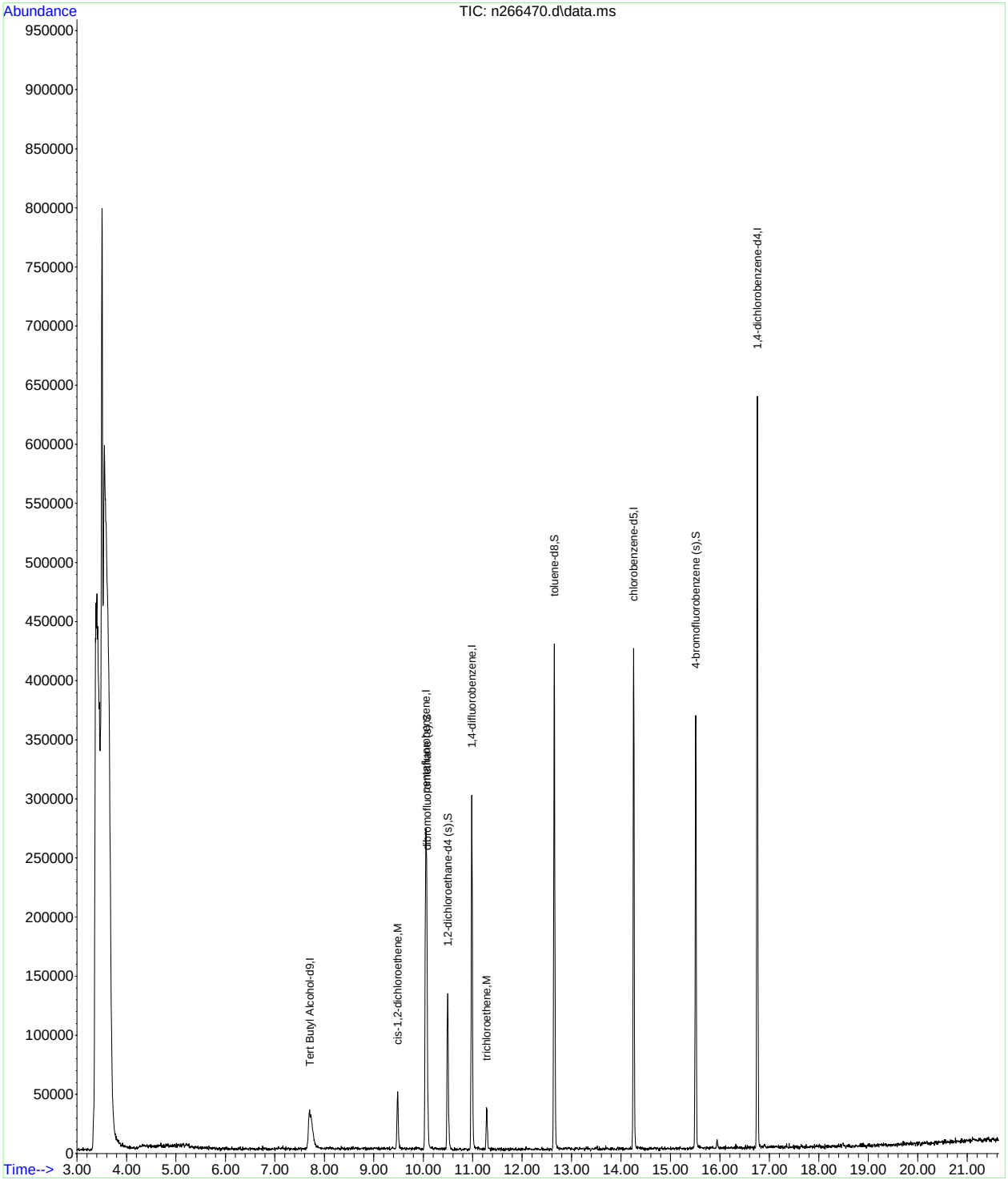
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.707	65	88819	300.00	ug/L	0.01
4) pentafluorobenzene	10.051	168	162816	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	220325	30.00	ug/L	0.00
74) chlorobenzene-d5	14.256	117	209273	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.756	152	153661	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.071	113	86563	34.20	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 114.00%			
54) 1,2-dichloroethane-d4 (s)	10.495	65	90027	33.22	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 110.73%			
75) toluene-d8	12.650	98	261979	28.70	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.67%			
97) 4-bromofluorobenzene (s)	15.511	95	104685	29.42	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.07%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.480	96	21755	8.00	ug/L	97
62) trichloroethene	11.280	95	9963	4.75	ug/L	92

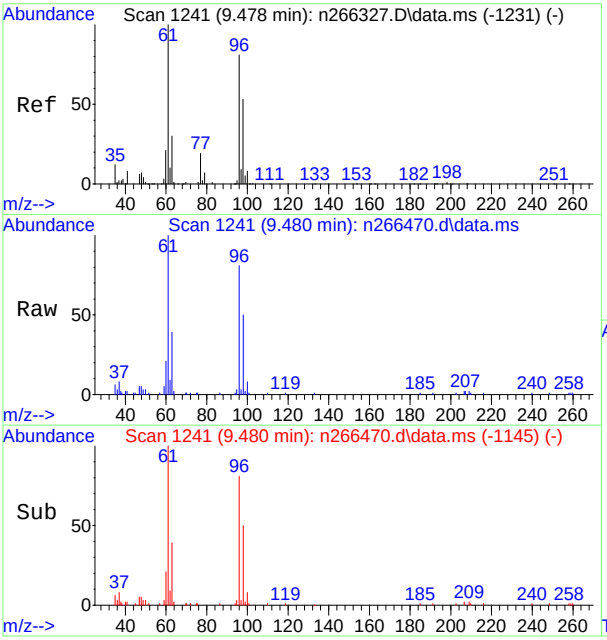
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266470.d
Acq On : 8 Dec 2017 12:11 am
Operator : CHELSEAS
Sample : jc56672-8
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 08 10:32:12 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

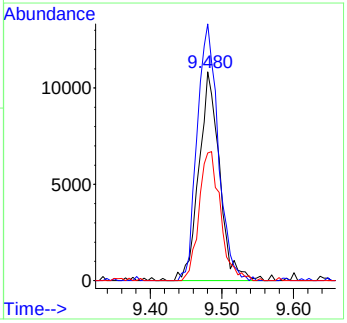


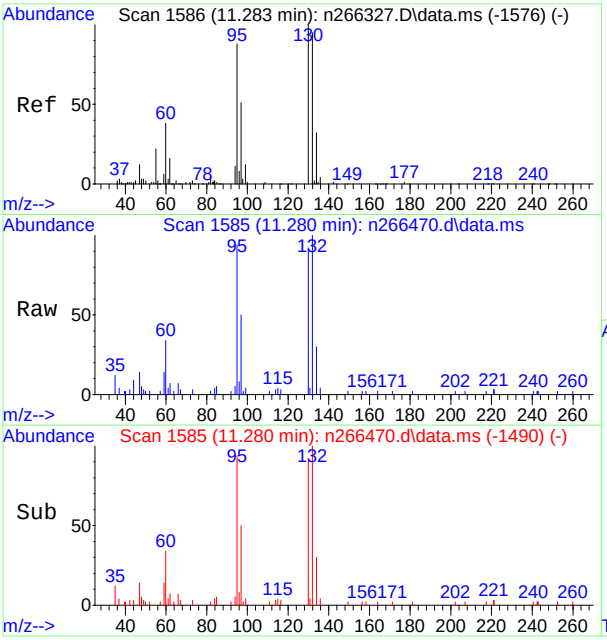


#39
cis-1,2-dichloroethene
Concen: 8.00 ug/L
RT: 9.480 min Scan# 1241
Delta R.T. 0.002 min
Lab File: n266470.d
Acq: 8 Dec 2017 12:11 am

Tgt Ion: 96 Resp: 21755

Ion	Ratio	Lower	Upper
96	100		
61	123.1	94.2	154.2
98	61.1	35.9	95.9

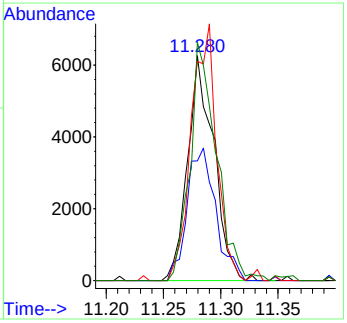




#62
trichloroethene
Concen: 4.75 ug/L
RT: 11.280 min Scan# 1585
Delta R.T. -0.003 min
Lab File: n266470.d
Acq: 8 Dec 2017 12:11 am

Tgt Ion: 95 Resp: 9963

Ion	Ratio	Lower	Upper
95	100		
97	53.3	31.3	91.3
130	101.4	84.0	144.0
132	105.9	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266471.d
Acq On : 8 Dec 2017 12:41 am
Operator : CHELSEAS
Sample : jc56672-9
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 08 10:32:52 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

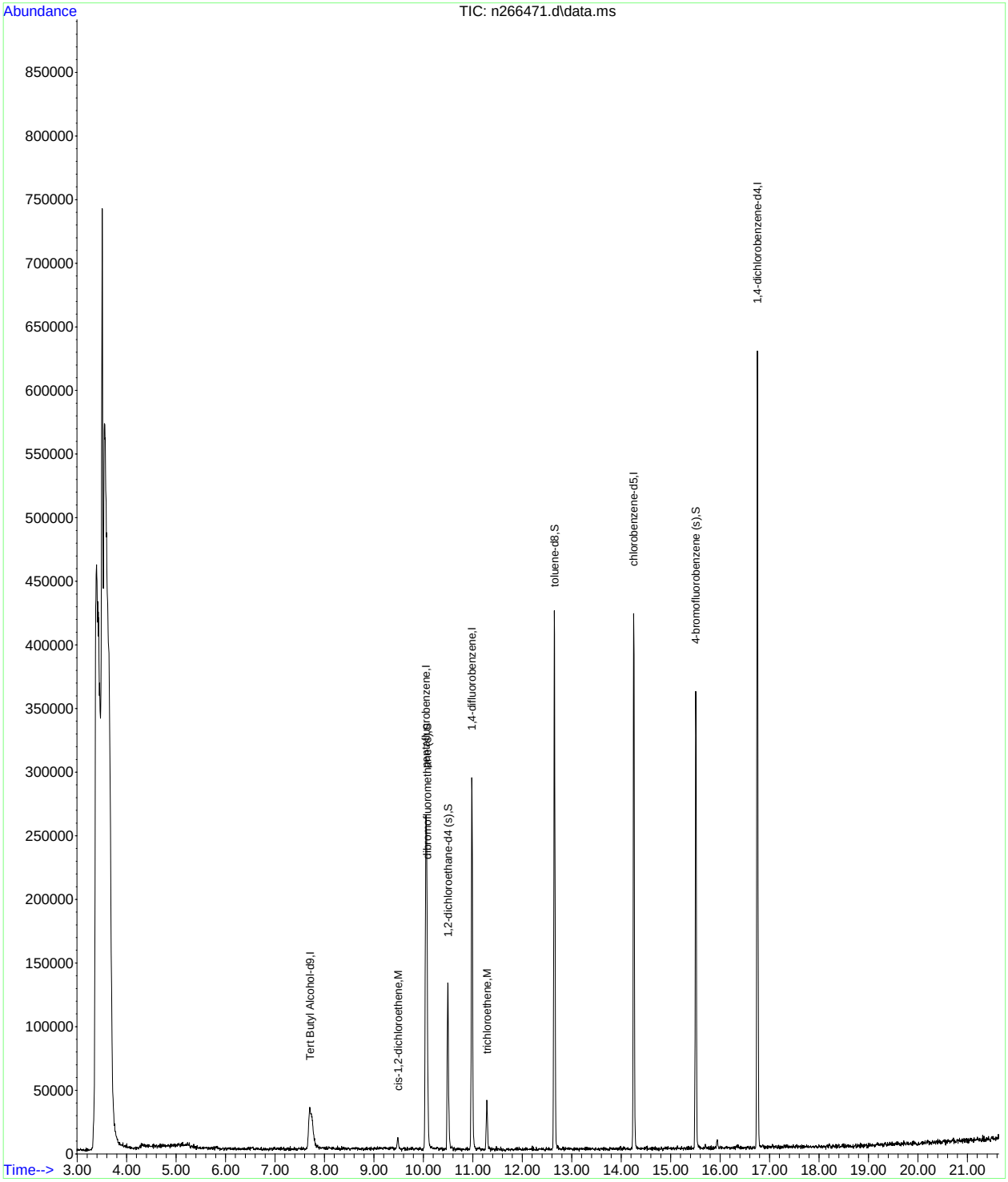
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.710	65	91282	300.00	ug/L	0.02
4) pentafluorobenzene	10.054	168	155548	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.979	114	211571	30.00	ug/L	0.00
74) chlorobenzene-d5	14.253	117	207094	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.753	152	155191	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	84313	34.87	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 116.23%			
54) 1,2-dichloroethane-d4 (s)	10.498	65	93619	35.98	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 119.93%			
75) toluene-d8	12.653	98	260729	28.86	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.20%			
97) 4-bromofluorobenzene (s)	15.509	95	102447	28.50	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.00%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.489	96	4349	1.67	ug/L	94
62) trichloroethene	11.288	95	12193	6.05	ug/L #	82

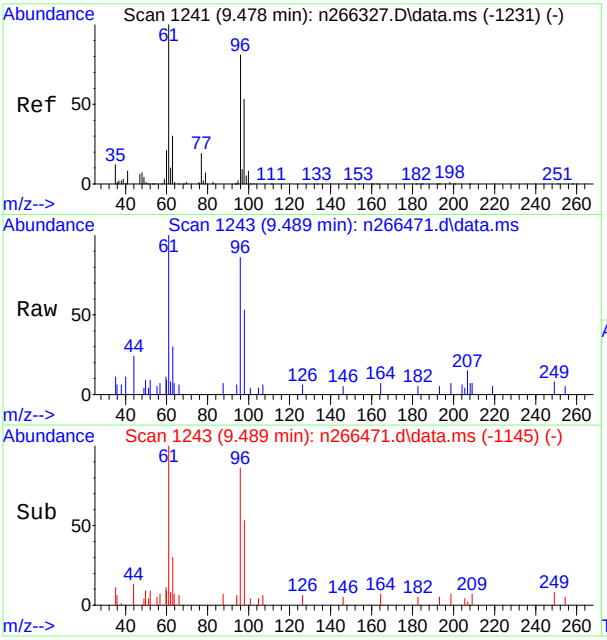
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266471.d
Acq On : 8 Dec 2017 12:41 am
Operator : CHELSEAS
Sample : jc56672-9
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 08 10:32:52 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

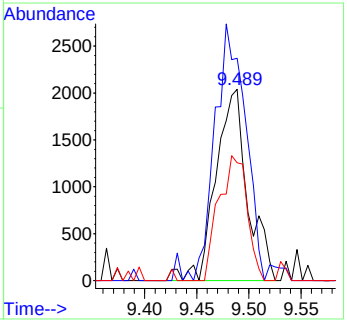


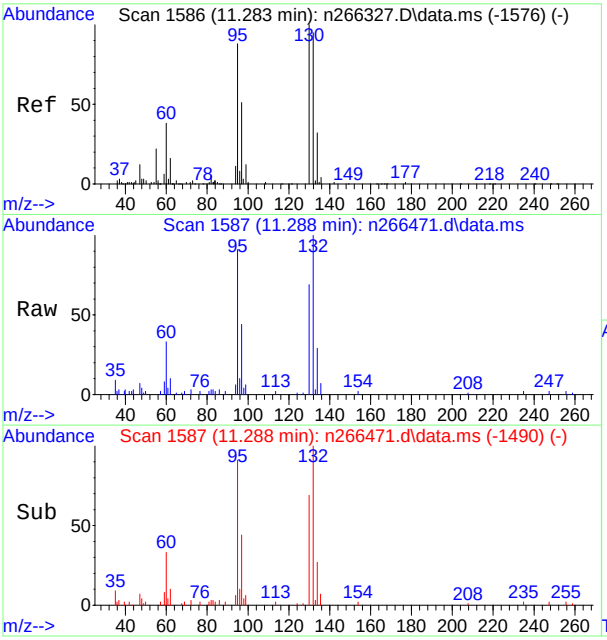


#39
cis-1,2-dichloroethene
Concen: 1.67 ug/L
RT: 9.489 min Scan# 1243
Delta R.T. 0.010 min
Lab File: n266471.d
Acq: 8 Dec 2017 12:41 am

Tgt Ion: 96 Resp: 4349

Ion	Ratio	Lower	Upper
96	100		
61	116.2	94.2	154.2
98	61.6	35.9	95.9

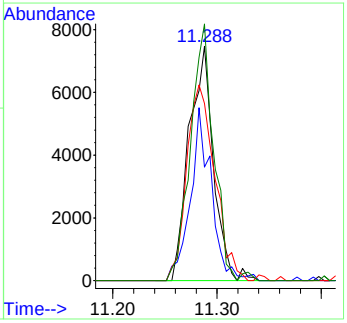




#62
trichloroethene
Concen: 6.05 ug/L
RT: 11.288 min Scan# 1587
Delta R.T. 0.005 min
Lab File: n266471.d
Acq: 8 Dec 2017 12:41 am

Tgt Ion: 95 Resp: 12193

Ion	Ratio	Lower	Upper
95	100		
97	48.5	31.3	91.3
130	75.7	84.0	144.0#
132	109.6	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266460.d
Acq On : 7 Dec 2017 7:18 pm
Operator : CHELSEAS
Sample : jc56672-10
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 08 11:19:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

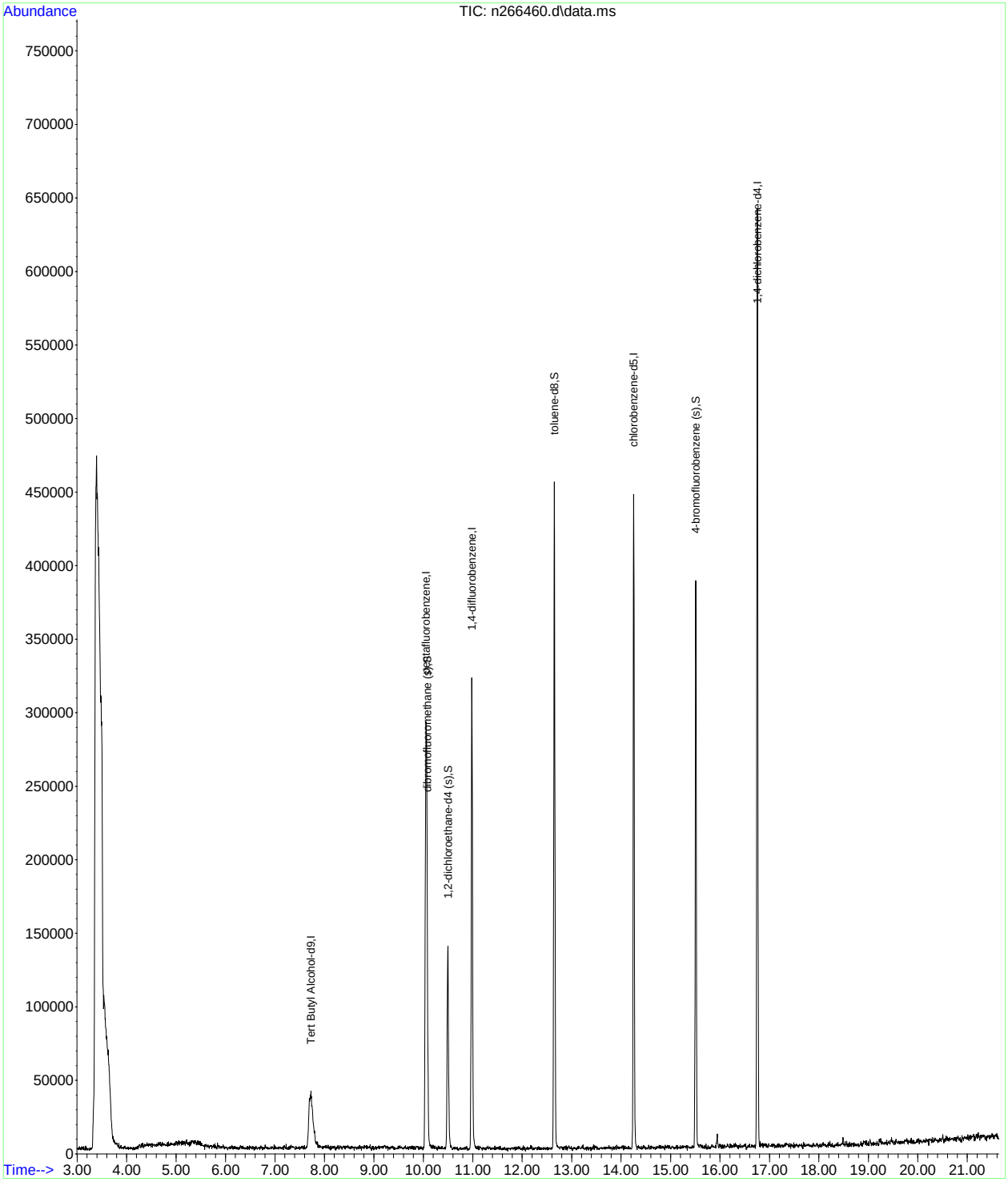
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.728	65	108291	300.00	ug/L	0.03
4) pentafluorobenzene	10.055	168	178273	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	241896	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	222044	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	153541	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.076	113	92255	33.29	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.97%			
54) 1,2-dichloroethane-d4 (s)	10.500	65	101390	34.08	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.60%			
75) toluene-d8	12.649	98	278423	28.75	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.83%			
97) 4-bromofluorobenzene (s)	15.510	95	109913	30.91	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.03%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\vn11228part\
Data File : n266460.d
Acq On : 7 Dec 2017 7:18 pm
Operator : CHELSEAS
Sample : jc56672-10
Misc : MS22856,VN11228,5,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 08 11:19:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266444.D
Acq On : 7 Dec 2017 11:06 am
Operator : CHELSEAS
Sample : mb
Misc : MS22851,VN11228,5,,,,1
ALS Vial : 51 Sample Multiplier: 1

Quant Time: Dec 07 21:52:51 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.716	65	102219	300.00	ug/L	0.02
4) pentafluorobenzene	10.054	168	170040	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.985	114	228094	30.00	ug/L	0.00
74) chlorobenzene-d5	14.259	117	225380	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.759	152	163093	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	94668	35.81	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 119.37%			
54) 1,2-dichloroethane-d4 (s)	10.499	65	98650	35.17	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 117.23%			
75) toluene-d8	12.654	98	277653	28.24	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.13%			
97) 4-bromofluorobenzene (s)	15.515	95	113119	29.95	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.83%			

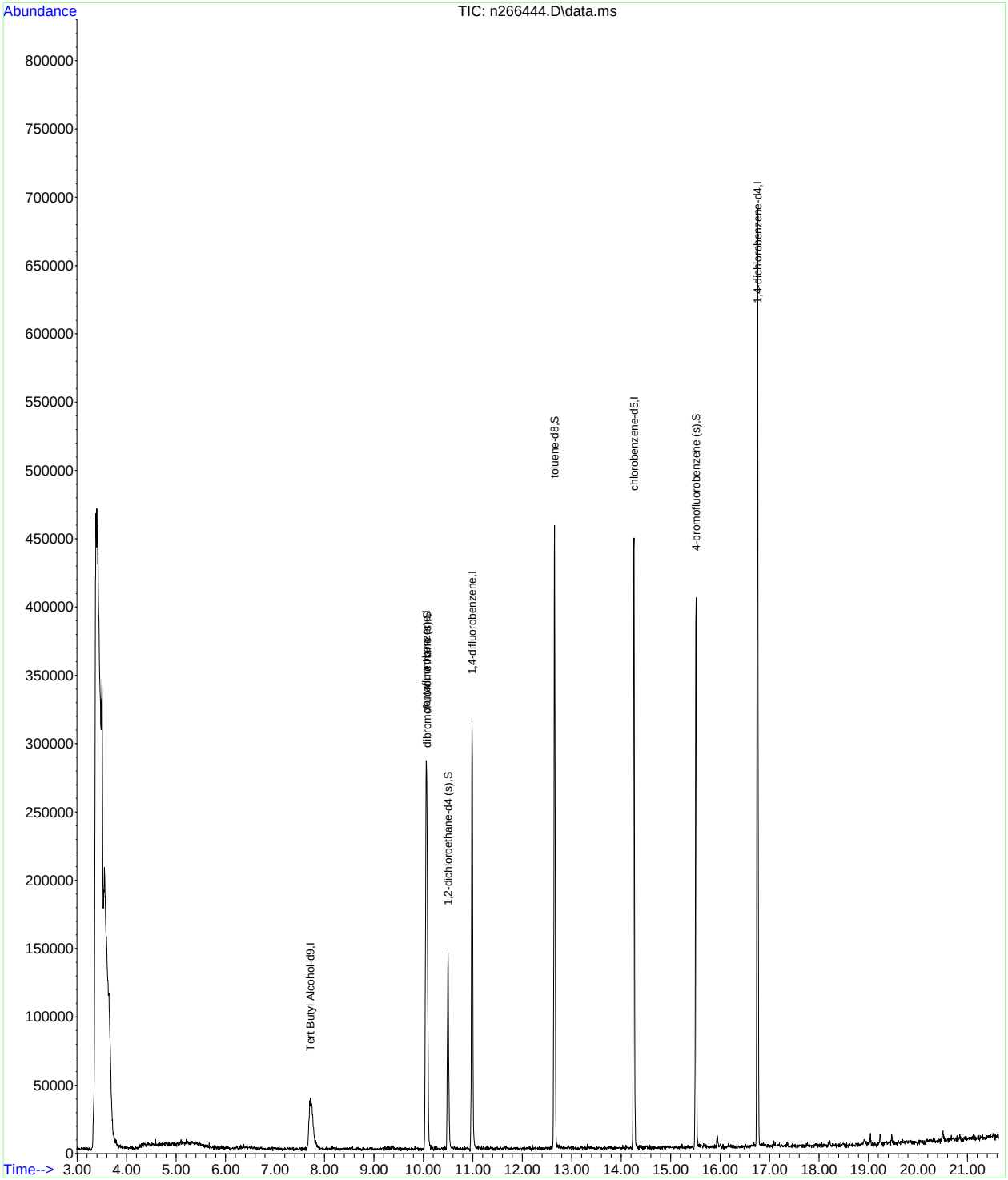
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266444.D
Acq On : 7 Dec 2017 11:06 am
Operator : CHELSEAS
Sample : mb
Misc : MS22851,VN11228,5,,,,1
ALS Vial : 51 Sample Multiplier: 1

Quant Time: Dec 07 21:52:51 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\data\vn11229\
Data File : n266476.d
Acq On : 8 Dec 2017 9:38 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS22880,VN11229,5,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 08 13:32:29 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

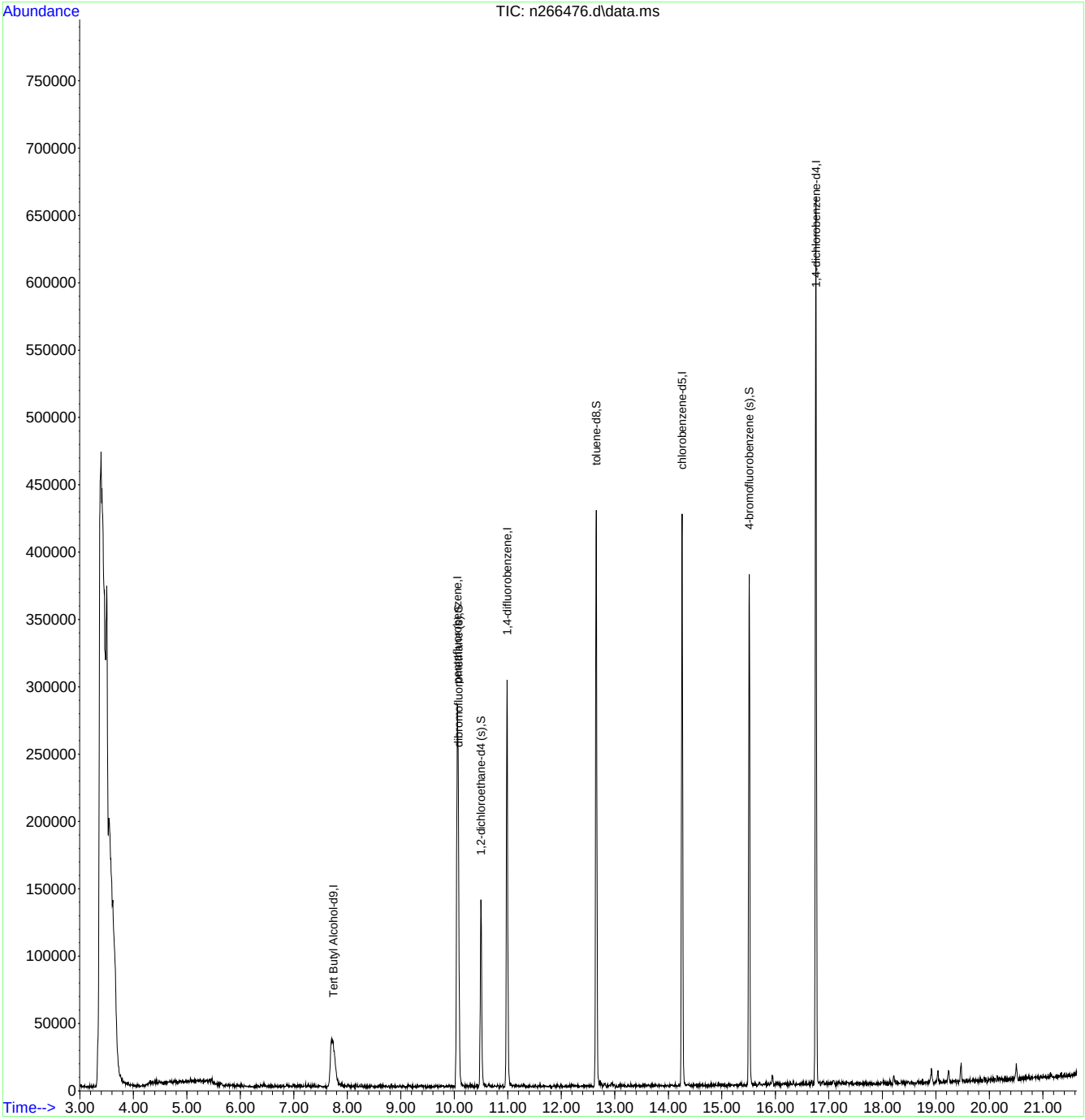
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.737	65	105648	300.00	ug/L	0.04
4) pentafluorobenzene	10.054	168	163405	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.985	114	222424	30.00	ug/L	0.00
74) chlorobenzene-d5	14.259	117	213933	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.759	152	156762	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	85125	33.51	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.70%			
54) 1,2-dichloroethane-d4 (s)	10.498	65	92703	33.89	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 112.97%			
75) toluene-d8	12.653	98	264151	28.31	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.37%			
97) 4-bromofluorobenzene (s)	15.514	95	110954	30.56	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.87%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\data\vn11229\
Data File : n266476.d
Acq On : 8 Dec 2017 9:38 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS22880,VN11229,5,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 08 13:32:29 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



SGS ACCUTEST JC56672

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:23	MA43352-STD1	1		STDA
10:27	MA43352-STD2	1		STDB
10:30	ZZZZZZ	1		
10:32	ZZZZZZ	1		
10:44	MA43352-ICV1	1		
10:52	MA43352-ICB1	1		
10:57	MA43352-ICCV1	1		
11:02	MA43352-CCB1	1		
11:06	MA43352-CRI1	1		
11:09	MA43352-CRID1	1		
11:12	MA43352-ICSA1	1		
11:16	MA43352-ICSAB1	1		
11:19	MA43352-HSTD1	1		
11:22	MA43352-HSTD2	1		
11:25	ZZZZZZ	1		
11:28	ZZZZZZ	1		
11:31	ZZZZZZ	1		
11:34	MA43352-CCV1	1		
11:37	MA43352-CCB2	1		
11:40	ZZZZZZ	1		
11:43	MP4615-MB1	1		
11:47	MP4615-B1	1		
11:49	MP4615-S1	1		
11:52	MP4615-S2	1		
11:55	JC56449-10	1		(sample used for QC only; not part of login JC56672)
11:58	MP4615-SD1	5		
12:02	ZZZZZZ	1		
12:04	ZZZZZZ	1		
12:08	MA43352-CCV2	1		
12:10	MA43352-CCB3	1		
12:14	ZZZZZZ	1		
12:17	ZZZZZZ	1		
12:20	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:23	ZZZZZZ	1		
12:26	ZZZZZZ	1		
12:29	ZZZZZZ	1		
12:32	ZZZZZZ	1		
12:36	ZZZZZZ	1		
12:39	ZZZZZZ	1		
12:42	MA43352-CCV3	1		
12:45	MA43352-CCB4	1		
12:48	ZZZZZZ	1		
12:51	ZZZZZZ	1		
12:54	ZZZZZZ	1		
12:57	ZZZZZZ	1		
13:00	MP4590-B1	1		
13:03	MP4590-MB1	1		
13:06	MP4590-S1	1		
13:09	MP4590-S2	1		
13:12	JC56504-2A	1		(sample used for QC only; not part of login JC56672)
13:15	MP4590-SD1	5		
13:18	MA43352-CCV4	1		
13:21	MA43352-CCB5	1		
13:24	ZZZZZZ	1		
13:27	ZZZZZZ	1		
13:30	ZZZZZZ	1		
13:33	ZZZZZZ	1		
13:37	ZZZZZZ	1		
13:40	ZZZZZZ	1		
13:43	ZZZZZZ	1		
13:46	ZZZZZZ	1		
13:49	ZZZZZZ	1		
13:52	ZZZZZZ	1		
13:55	MA43352-CCV5	1		
13:58	MA43352-CCB6	1		
14:01	MP4617-MB1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:05	MP4617-B1	1		
14:07	MP4617-S1	1		
14:10	MP4617-S2	1		
14:13	JC56387-25	1		(sample used for QC only; not part of login JC56672)
14:17	MP4617-SD1	5		
14:20	ZZZZZZ	1		
14:23	ZZZZZZ	1		
14:26	ZZZZZZ	1		
14:29	MA43352-CCV6	1		
14:32	MA43352-CCB7	1		
14:35	ZZZZZZ	1		
14:38	ZZZZZZ	1		
14:42	ZZZZZZ	1		
14:45	ZZZZZZ	1		
14:48	ZZZZZZ	1		
14:51	ZZZZZZ	1		
14:54	ZZZZZZ	1		
14:57	ZZZZZZ	1		
15:00	ZZZZZZ	1		
15:04	MA43352-CCV7	1		
15:06	MA43352-CCB8	1		
15:10	ZZZZZZ	1		
15:13	ZZZZZZ	1		
15:16	ZZZZZZ	1		
15:19	ZZZZZZ	1		
15:22	ZZZZZZ	1		
15:25	ZZZZZZ	1		
15:29	MP4637-B1	1		
15:31	MP4637-MB1	1		
15:35	MA43352-CCV8	1		
15:38	MA43352-CCB9	1		
15:41	MP4637-S1	1		
15:44	MP4637-S2	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:46	JC56696-1	1		(sample used for QC only; not part of login JC56672)
15:49	MP4637-D1	1		
15:53	MP4637-SD1	5		
15:56	ZZZZZZ	1		
15:59	ZZZZZZ	1		
16:02	ZZZZZZ	1		
16:05	ZZZZZZ	1		
16:08	MA43352-CCV9	1		
16:11	MA43352-CCB10	1		
16:14	ZZZZZZ	1		
16:17	ZZZZZZ	1		
16:20	ZZZZZZ	1		
16:24	ZZZZZZ	5		
16:27	ZZZZZZ	1		
16:30	MA43352-CRID2	1		
16:33	MA43352-CRI2	1		
16:36	MA43352-ICSA2	1		
16:40	MA43352-ICSAB2	1		
16:43	MA43352-CCV10	1		
16:45	MA43352-CCB11	1		
16:49	MP4623-MB1	1		
16:52	MP4623-B1	1		
16:55	MP4623-S1	1		
16:58	MP4623-S2	1		
17:01	JC56256-1	1		(sample used for QC only; not part of login JC56672)
17:04	MP4623-SD1	5		
17:07	JC56672-7A	1		
17:10	JC56672-8A	1		
17:13	JC56672-9A	1		
---------->	Last reportable sample/prep for job JC56672			
17:16	MA43352-CCV11	1		
17:19	MA43352-CCB12	1		
17:22	MA43352-ICSA3	1		
17:25	MA43352-ICSAB3	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:28	ZZZZZZ	1		
17:32	ZZZZZZ	1		
17:35	ZZZZZZ	1		
17:38	ZZZZZZ	1		
17:41	ZZZZZZ	1		
17:44	ZZZZZZ	1		
17:47	ZZZZZZ	1		
17:51	ZZZZZZ	1		
17:54	MA43352-CCV12	1		
17:57	MA43352-CCB13	1		
---------->	Last reportable CCB for job JC56672			
18:00	ZZZZZZ	1		
18:03	ZZZZZZ	1		
18:06	ZZZZZZ	1		
18:10	ZZZZZZ	1		
18:13	ZZZZZZ	1		
18:16	ZZZZZZ	1		
18:19	ZZZZZZ	1		
18:22	ZZZZZZ	1		
18:25	ZZZZZZ	1		
18:29	ZZZZZZ	1		
18:32	ZZZZZZ	1		
18:35	ZZZZZZ	1		
18:38	MA43352-CCV13	1		
18:41	MA43352-CCB14	1		
18:44	ZZZZZZ	1		
18:47	ZZZZZZ	1		
18:51	ZZZZZZ	1		
18:54	ZZZZZZ	1		
18:57	ZZZZZZ	1		
19:00	ZZZZZZ	1		
19:03	ZZZZZZ	1		
19:06	ZZZZZZ	1		
19:10	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:13	ZZZZZZ	1		
19:16	MA43352-CCV14	1		
19:19	MA43352-CCB15	1		
19:22	MP4603-MB1	1		
19:25	MP4603-B1	1		
19:28	MP4603-S1	1		Fe and Ca high
19:31	MP4603-S2	1		Fe and Ca high
19:34	JC56427-3	1		(sample used for QC only; not part of login JC56672)
19:37	MP4603-SD1	5		
19:40	ZZZZZZ	1		
19:43	ZZZZZZ	1		
19:47	ZZZZZZ	1		
19:50	ZZZZZZ	1		
19:53	MA43352-CCV15	1		
19:56	MA43352-CCB16	1		
19:59	ZZZZZZ	1		
20:02	ZZZZZZ	1		
20:05	ZZZZZZ	1		
20:08	ZZZZZZ	1		
20:11	ZZZZZZ	1		
20:15	ZZZZZZ	1		
20:18	ZZZZZZ	1		
20:21	ZZZZZZ	1		
20:24	ZZZZZZ	1		
20:27	ZZZZZZ	1		
20:30	MA43352-CCV16	1		
20:33	MA43352-CCB17	1		
20:36	ZZZZZZ	1		
20:40	ZZZZZZ	1		
20:43	ZZZZZZ	1		
20:46	ZZZZZZ	1		
20:49	MP4593-B1	1		
20:52	MP4593-MB1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:55	MP4593-S1	1		high elements
20:58	MP4593-S2	1		high elements
21:01	JC56301-17	1		(sample used for QC only; not part of login JC56672)
21:05	MP4593-SD1	5		high elements
21:08	MA43352-CCV17	1		
21:11	MA43352-CCB18	1		
21:14	ZZZZZZ	1		
21:17	ZZZZZZ	1		
21:20	ZZZZZZ	1		
21:23	ZZZZZZ	1		
21:26	ZZZZZZ	1		
21:29	ZZZZZZ	1		
21:32	ZZZZZZ	1		
21:36	ZZZZZZ	1		
21:39	ZZZZZZ	1		
21:42	ZZZZZZ	1		
21:45	MA43352-CCV18	1		
21:48	MA43352-CCB19	1		
21:51	ZZZZZZ	1		
21:54	ZZZZZZ	1		
21:57	ZZZZZZ	1		
22:00	ZZZZZZ	1		
22:03	ZZZZZZ	1		
22:06	ZZZZZZ	1		
22:09	ZZZZZZ	1		
22:13	ZZZZZZ	1		
22:16	ZZZZZZ	1		
22:19	MA43352-CCV19	1		
22:22	MA43352-CCB20	1		
22:25	MP4545-MB1	5		
22:28	MP4545-B1	5		
22:31	MP4545-S1	5		
22:34	MP4545-S2	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
22:37	JC55545-81R	5		(sample used for QC only; not part of login JC56672)
22:40	MP4545-SD1	25		
22:43	MA43352-CRID3	1		
22:47	MA43352-CRI3	1		
22:50	MA43352-CRID4	1		
22:53	MA43352-CCV20	1		
22:56	MA43352-CCB21	1		
22:59	MP4527-MB1	1		
23:02	MP4527-B1	1		
23:05	MP4527-S1	1		
23:08	MP4527-S2	1		
23:11	JC56201-1	1		(sample used for QC only; not part of login JC56672)
23:14	MP4527-SD1	5		
23:17	ZZZZZZ	1		
23:21	ZZZZZZ	1		
23:24	ZZZZZZ	1		
23:27	ZZZZZZ	1		
23:30	MA43352-CCV21	1		
23:33	MA43352-CCB22	1		
23:36	ZZZZZZ	1		
23:39	ZZZZZZ	1		
23:42	ZZZZZZ	1		
23:45	MP4626-B1	1		
23:48	MP4626-MB1	1		
23:51	MP4626-S1	1		
23:54	MP4626-S2	1		
23:57	JC56440-1	1		(sample used for QC only; not part of login JC56672)
00:00	MP4626-SD1	5		
00:04	MA43352-CCV22	1		
00:07	MA43352-CCB23	1		
00:10	ZZZZZZ	1		
00:13	ZZZZZZ	1		
00:16	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:19	ZZZZZZ	1		
00:22	ZZZZZZ	1		
00:25	ZZZZZZ	1		
00:28	ZZZZZZ	1		
00:31	ZZZZZZ	1		
00:35	ZZZZZZ	1		
00:38	MA43352-CCV23	1		
00:41	MA43352-CCB24	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:23	MA43352-STD1	3658 R	224780 R	18335 R	8736 R
10:27	MA43352-STD2	3451	208220	17945	7497
10:30	ZZZZZZ	3535	213890	18086	7788
10:32	ZZZZZZ	3639	222760	18320	8674
10:44	MA43352-ICV1	3537	213300	17947	7822
10:52	MA43352-ICB1	3641	221370	17967	8700
10:57	MA43352-ICCV1	3540	215440	18180	7839
11:02	MA43352-CCB1	3631	223690	18319	8688
11:06	MA43352-CRI1	3593	220860	18292	8494
11:09	MA43352-CRID1	3604	219510	17024	8585
11:12	MA43352-ICSA1	3244	194820	17532	6799
11:16	MA43352-ICSAB1	3233	195000	17465	6795
11:19	MA43352-HSTD1	3594	218580	18254	8450
11:22	MA43352-HSTD2	3330	200160	17710	6932
11:25	ZZZZZZ	3546	218170	18045	8491
11:28	ZZZZZZ	3567	222490	18155	8647
11:31	ZZZZZZ	3606	222940	18218	8654
11:34	MA43352-CCV1	3517	214050	18202	7787
11:37	MA43352-CCB2	3629	222100	18289	8675
11:40	ZZZZZZ	3533	217550	18773	8048
11:43	MP4615-MB1	3626	225610	18760	8724
11:47	MP4615-B1	3482	215590	18234	7879
11:49	MP4615-S1	3418	211760	18488	7354
11:52	MP4615-S2	3500	214460	18396	7596
11:55	JC56449-10	3559	218250	18637	7873
11:58	MP4615-SD1	3627	222610	18588	8388
12:02	ZZZZZZ	3468	213280	18677	7445
12:04	ZZZZZZ	3628	217050	19004	7753
12:08	MA43352-CCV2	3494	213080	18239	7762
12:10	MA43352-CCB3	3603	224470	18408	8648
12:14	ZZZZZZ	3519	217560	18627	7707
12:17	ZZZZZZ	3641	220380	19116	7821
12:20	ZZZZZZ	3544	215710	18739	7710

INTERNAL STANDARD SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:23	ZZZZZZ	3657	220630	19151	7913
12:26	ZZZZZZ	3546	219510	18724	7897
12:29	ZZZZZZ	3634	222320	19182	7839
12:32	ZZZZZZ	3566	218240	18755	7810
12:36	ZZZZZZ	3510	215940	18800	7677
12:39	ZZZZZZ	3580	220420	18956	7790
12:42	MA43352-CCV3	3475	214060	18084	7755
12:45	MA43352-CCB4	3574	222940	18309	8640
12:48	ZZZZZZ	3691	223310	19338	8004
12:51	ZZZZZZ	3551	217430	18821	7817
12:54	ZZZZZZ	3476	214610	18738	7457
12:57	ZZZZZZ	3582	218010	18864	7974
13:00	MP4590-B1	3489	216920	18428	7965
13:03	MP4590-MB1	3560	223330	18448	8629
13:06	MP4590-S1	3443	212710	18198	7704
13:09	MP4590-S2	3430	213210	18340	7687
13:12	JC56504-2A	3462	216640	18425	8097
13:15	MP4590-SD1	3501	221160	18380	8378
13:18	MA43352-CCV4	3482	212780	18207	7763
13:21	MA43352-CCB5	3591	224390	18316	8671
13:24	ZZZZZZ	3501	216680	18354	8231
13:27	ZZZZZZ	3481	217810	18466	8172
13:30	ZZZZZZ	3230	197270	17712	6828
13:33	ZZZZZZ	2841	176150	16797	6046 !a
13:37	ZZZZZZ	3489	218090	18115	8210
13:40	ZZZZZZ	3463	215320	18424	8143
13:43	ZZZZZZ	3059	183630	17505	6360
13:46	ZZZZZZ	2787	174890	16721	5970 !a
13:49	ZZZZZZ	3544	221460	18311	8622
13:52	ZZZZZZ	3514	217990	18320	8082
13:55	MA43352-CCV5	3471	213890	18055	7758
13:58	MA43352-CCB6	3575	222620	18283	8665
14:01	MP4617-MB1	3612	223300	18540	8766

INTERNAL STANDARD SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:05	MP4617-B1	3501	215120	18280	7988
14:07	MP4617-S1	3302	205090	18258	6964
14:10	MP4617-S2	3336	207540	18439	7057
14:13	JC56387-25	3349	209800	18295	7093
14:17	MP4617-SD1	3496	215660	18264	7919
14:20	ZZZZZZ	3250	203110	18170	6757
14:23	ZZZZZZ	3210	199590	17922	6702
14:26	ZZZZZZ	3345	209320	18478	7092
14:29	MA43352-CCV6	3467	212070	18156	7752
14:32	MA43352-CCB7	3567	220410	18122	8641
14:35	ZZZZZZ	3389	210440	18515	7175
14:38	ZZZZZZ	3356	208440	18415	7041
14:42	ZZZZZZ	3361	209130	17940	7137
14:45	ZZZZZZ	3655	223480	19203	7953
14:48	ZZZZZZ	3248	202480	18194	6676
14:51	ZZZZZZ	3515	219050	18988	7389
14:54	ZZZZZZ	3234	200560	17944	6710
14:57	ZZZZZZ	3471	214240	18661	7374
15:00	ZZZZZZ	3220	199190	18030	6639
15:04	MA43352-CCV7	3473	213150	17988	7740
15:06	MA43352-CCB8	3576	222140	18124	8627
15:10	ZZZZZZ	3315	206890	18309	7108
15:13	ZZZZZZ	3676	224520	19168	7898
15:16	ZZZZZZ	3362	208010	18141	7107
15:19	ZZZZZZ	3659	223940	18868	8032
15:22	ZZZZZZ	3385	207720	18329	7233
15:25	ZZZZZZ	3744	225230	19514	8005
15:29	MP4637-B1	3450	213630	17986	7860
15:31	MP4637-MB1	3550	221830	18134	8586
15:35	MA43352-CCV8	3482	212730	17978	7773
15:38	MA43352-CCB9	3584	223570	18130	8636
15:41	MP4637-S1	3420	211750	17754	7775
15:44	MP4637-S2	3416	210700	17871	7774

INTERNAL STANDARD SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:46	JC56696-1	3537	219830	18073	8538
15:49	MP4637-D1	3509	219080	18032	8460
15:53	MP4637-SD1	3622	224550	18571	8756
15:56	ZZZZZZ	3513	220340	18459	8482
15:59	ZZZZZZ	3658	226170	18573	8565
16:02	ZZZZZZ	3524	248960	17746	8127
16:05	ZZZZZZ	3691	225080	18827	8410
16:08	MA43352-CCV9	3530	216430	18249	7838
16:11	MA43352-CCB10	3642	225830	18247	8742
16:14	ZZZZZZ	3666	222950	19115	7906
16:17	ZZZZZZ	3732	226060	19398	7930
16:20	ZZZZZZ	3629	223000	18612	8415
16:24	ZZZZZZ	3491	213760	18257	7981
16:27	ZZZZZZ	3727	229920	18985	8999
16:30	MA43352-CRID2	3635	223660	18390	8647
16:33	MA43352-CRI2	3621	222610	18231	8527
16:36	MA43352-ICSA2	3283	196170	17527	6848
16:40	MA43352-ICSAB2	3278	197310	17433	6851
16:43	MA43352-CCV10	3557	215500	18034	7848
16:45	MA43352-CCB11	3670	223260	18260	8735
16:49	MP4623-MB1	3761	229610	18598	9028
16:52	MP4623-B1	3656	220400	18556	8228
16:55	MP4623-S1	3502	210310	18265	7480
16:58	MP4623-S2	3489	209130	18299	7457
17:01	JC56256-1	3476	209160	18311	7609
17:04	MP4623-SD1	3568	215040	18186	8146
17:07	JC56672-7A	3518	214020	18246	8006
17:10	JC56672-8A	3547	215770	18267	8118
17:13	JC56672-9A	3541	217400	18314	8104
17:16	MA43352-CCV11	3538	212290	18080	7753
17:19	MA43352-CCB12	3673	222060	18112	8684
17:22	MA43352-ICSA3	3292	196120	17607	6828
17:25	MA43352-ICSAB3	3283	196100	17426	6833

INTERNAL STANDARD SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:28	ZZZZZZ	3690	224950	18138	8714
17:32	ZZZZZZ	3661	222060	18796	8286
17:35	ZZZZZZ	2791	163010	16837	5443 !a
17:38	ZZZZZZ	3676	223260	18669	8474
17:41	ZZZZZZ	3538	215260	18524	7870
17:44	ZZZZZZ	3473	204590	18443	6270
17:47	ZZZZZZ	3746	224560	19001	8091
17:51	ZZZZZZ	3685	220980	18508	8255
17:54	MA43352-CCV12	3605	215160	18034	7874
17:57	MA43352-CCB13	3707	225070	18220	8767
18:00	ZZZZZZ	3712	226040	18196	8750
18:03	ZZZZZZ	3706	226060	18220	8740
18:06	ZZZZZZ	3707	224930	18059	8801
18:10	ZZZZZZ	3822	213240	18440	7770
18:13	ZZZZZZ	8747 !	452760 !	28040 !	19871 !
18:16	ZZZZZZ	3427	206990	17659	7470
18:19	ZZZZZZ	3728	224640	18134	8745
18:22	ZZZZZZ	3736	224510	18047	8766
18:25	ZZZZZZ	3760	227880	18124	8809
18:29	ZZZZZZ	3735	225260	18127	8770
18:32	ZZZZZZ	3753	226210	18070	8814
18:35	ZZZZZZ	3733	226330	18048	8788
18:38	MA43352-CCV13	3624	216890	17882	7880
18:41	MA43352-CCB14	3731	225480	18033	8758
18:44	ZZZZZZ	3819	222240	18820	8039
18:47	ZZZZZZ	3676	222480	18483	8073
18:51	ZZZZZZ	3844	227510	18753	8294
18:54	ZZZZZZ	3816	223480	18698	8245
18:57	ZZZZZZ	3843	226050	18937	8176
19:00	ZZZZZZ	3823	227070	19013	8186
19:03	ZZZZZZ	3806	222650	18771	8218
19:06	ZZZZZZ	3820	226960	18711	8188
19:10	ZZZZZZ	3754	220320	18578	8099

INTERNAL STANDARD SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:13	ZZZZZZ	3817	223900	18574	8252
19:16	MA43352-CCV14	3654	216730	17852	7916
19:19	MA43352-CCB15	3764	225530	18038	8826
19:22	MP4603-MB1	3742	225360	18200	8796
19:25	MP4603-B1	3636	215210	17993	8040
19:28	MP4603-S1	3676	218750	19039	7299
19:31	MP4603-S2	3830	227670	19438	7608
19:34	JC56427-3	3753	222570	19153	7555
19:37	MP4603-SD1	3757	224120	18260	8262
19:40	ZZZZZZ	3812	226430	18703	8266
19:43	ZZZZZZ	3797	223450	18503	8270
19:47	ZZZZZZ	3758	222300	18561	8018
19:50	ZZZZZZ	3803	226140	18642	8237
19:53	MA43352-CCV15	3679	216770	17967	7947
19:56	MA43352-CCB16	3767	224530	18113	8822
19:59	ZZZZZZ	3753	222680	18808	7885
20:02	ZZZZZZ	3806	225460	18629	8252
20:05	ZZZZZZ	3671	214810	18216	8449
20:08	ZZZZZZ	3845	227540	18710	8208
20:11	ZZZZZZ	3805	222850	18617	8141
20:15	ZZZZZZ	3843	227330	18661	8213
20:18	ZZZZZZ	3940	232710	19445	8218
20:21	ZZZZZZ	3936	230800	19433	7788
20:24	ZZZZZZ	3449	206310	18139	6615
20:27	ZZZZZZ	3993	232430	19588	8018
20:30	MA43352-CCV16	3690	218090	18079	7960
20:33	MA43352-CCB17	3795	226670	17974	8852
20:36	ZZZZZZ	3845	224320	19024	7712
20:40	ZZZZZZ	4167	247760	21161	7701
20:43	ZZZZZZ	3828	224350	18870	7802
20:46	ZZZZZZ	3549	210320	18189	7203
20:49	MP4593-B1	3622	216420	17740	7994
20:52	MP4593-MB1	3747	228440	18186	8786

INTERNAL STANDARD SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:55	MP4593-S1	3476	210090	17950	7767
20:58	MP4593-S2	3597	215210	18170	7990
21:01	JC56301-17	3686	217340	18289	8275
21:05	MP4593-SD1	3753	224600	18067	8545
21:08	MA43352-CCV17	3642	215790	17794	7868
21:11	MA43352-CCB18	3733	226510	17773	8737
21:14	ZZZZZZ	3777	224800	18137	8549
21:17	ZZZZZZ	3775	224490	18512	8179
21:20	ZZZZZZ	3696	219500	18325	7872
21:23	ZZZZZZ	3830	225650	18887	8029
21:26	ZZZZZZ	3723	219220	18296	8013
21:29	ZZZZZZ	3798	225240	18264	8405
21:32	ZZZZZZ	3783	221230	18218	8267
21:36	ZZZZZZ	3760	223540	18146	8395
21:39	ZZZZZZ	3783	223620	18101	8330
21:42	ZZZZZZ	3794	224050	18207	8327
21:45	MA43352-CCV18	3660	213600	17666	7879
21:48	MA43352-CCB19	3727	224300	17281	8675
21:51	ZZZZZZ	3648	231560	18131	8022
21:54	ZZZZZZ	3770	223720	18007	8493
21:57	ZZZZZZ	3760	225000	17943	8387
22:00	ZZZZZZ	3806	222950	18666	7929
22:03	ZZZZZZ	3869	229370	18318	8530
22:06	ZZZZZZ	3908	229370	19276	7833
22:09	ZZZZZZ	3889	229540	18762	8271
22:13	ZZZZZZ	3832	225220	18497	8364
22:16	ZZZZZZ	3796	223970	18295	8297
22:19	MA43352-CCV19	3691	216660	17875	7902
22:22	MA43352-CCB20	3804	227050	17799	8802
22:25	MP4545-MB1	3582	210910	17792	7631
22:28	MP4545-B1	3598	210340	17585	7600
22:31	MP4545-S1	3597	210630	17573	7600
22:34	MP4545-S2	3594	211070	17587	7578

INTERNAL STANDARD SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
22:37	JC55545-81R	3580	208510	17601	7647
22:40	MP4545-SD1	3706	218300	17610	8270
22:43	MA43352-CRID3	3786	224490	17762	8759
22:47	MA43352-CRI3	3767	224190	17774	8629
22:50	MA43352-CRID4	3788	224080	17815	8752
22:53	MA43352-CCV20	3690	215390	17725	7907
22:56	MA43352-CCB21	3800	226330	17675	8800
22:59	MP4527-MB1	3873	230010	17989	8990
23:02	MP4527-B1	3796	223580	18313	8326
23:05	MP4527-S1	3702	217870	17977	7923
23:08	MP4527-S2	3675	209640	18135	7870
23:11	JC56201-1	3722	218980	18055	8231
23:14	MP4527-SD1	3751	222190	17834	8547
23:17	ZZZZZZ	3798	224030	17961	8438
23:21	ZZZZZZ	3824	225370	18106	8544
23:24	ZZZZZZ	3647	216240	17937	7907
23:27	ZZZZZZ	3791	221760	18046	8550
23:30	MA43352-CCV21	3648	214060	17612	7813
23:33	MA43352-CCB22	3793	225240	17724	8735
23:36	ZZZZZZ	3800	229220	18184	8610
23:39	ZZZZZZ	2999	170780	16532	5816 !a
23:42	ZZZZZZ	3147	179640	16988	6186
23:45	MP4626-B1	3768	219690	17974	8245
23:48	MP4626-MB1	3842	228380	18082	8953
23:51	MP4626-S1	3751	218350	18004	8077
23:54	MP4626-S2	3748	219410	17869	8074
23:57	JC56440-1	3807	223250	17907	8584
00:00	MP4626-SD1	3789	222500	17705	8686
00:04	MA43352-CCV22	3678	213950	17467	7843
00:07	MA43352-CCB23	3804	225480	17490	8760
00:10	ZZZZZZ	No results reported for the elements associated with this internal standard.			
00:13	ZZZZZZ	No results reported for the elements associated with this internal standard.			
00:16	ZZZZZZ	No results reported for the elements associated with this internal standard.			

INTERNAL STANDARD SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA43352
Parameters: Cu,Fe,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
00:19	ZZZZZZ	No results reported for the elements associated with this internal standard.			
00:22	ZZZZZZ	3855	225840	18136	8524
00:25	ZZZZZZ	3856	220850	18809	8608
00:28	ZZZZZZ	3858	225980	18238	8541
00:31	ZZZZZZ	3828	224240	18012	8615
00:35	ZZZZZZ	3668	215860	17876	8115
00:38	MA43352-CCV23	3674	214030	17618	7822
00:41	MA43352-CCB24	3805	225950	17637	8744

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43352 Units: ug/l

Time:			10:52		11:02		11:37		12:10	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.1	anr							
Arsenic	3.0	1.8	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	1.8								
Boron	100	1.3	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	5.5	anr							
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.9	0.30	<10	0.0	<10	0.10	<10	0.30	<10
Iron	100	3.7	-0.80	<100	0.20	<100	-0.40	<100	1.9	<100
Lead	3.0	1.6	anr							
Lithium	50	1.1								
Magnesium	5000	27	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.3	anr							
Phosphorus	50	2.4								
Potassium	10000	51	anr							
Selenium	10	3.2	anr							
Silicon	200	2.2								
Silver	10	.5	-0.20	<10	0.10	<10	-0.20	<10	0.0	<10
Sodium	10000	12	anr							
Strontium	10	.1	anr							
Sulfur	50	5.7								
Thallium	2.0	1.2	anr							
Tin	10	1.3								
Titanium	10	.3								
Tungsten	50	1.4								
Vanadium	50	.4	anr							
Zinc	20	.4	-0.10	<20	-0.10	<20	0.10	<20	-0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43352 Units: ug/l

Time: / Sample ID:			10:52 ICB1		11:02 CCB1		11:37 CCB2		12:10 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43352 Units: ug/l

Time:			12:45		13:21		13:58		14:32	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.1	anr							
Arsenic	3.0	1.8	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	1.8								
Boron	100	1.3	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	5.5	anr							
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.9	0.80	<10	0.20	<10	0.20	<10	0.20	<10
Iron	100	3.7	3.1	<100	3.5	<100	-0.40	<100	3.4	<100
Lead	3.0	1.6	anr							
Lithium	50	1.1								
Magnesium	5000	27	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.3	anr							
Phosphorus	50	2.4								
Potassium	10000	51	anr							
Selenium	10	3.2	anr							
Silicon	200	2.2								
Silver	10	.5	0.10	<10	0.10	<10	-0.10	<10	0.0	<10
Sodium	10000	12	anr							
Strontium	10	.1	anr							
Sulfur	50	5.7								
Thallium	2.0	1.2	anr							
Tin	10	1.3								
Titanium	10	.3								
Tungsten	50	1.4								
Vanadium	50	.4	anr							
Zinc	20	.4	-0.20	<20	-0.20	<20	0.0	<20	0.0	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43352 Units: ug/l

Time: / Sample ID:			12:45 CCB4		13:21 CCB5		13:58 CCB6		14:32 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43352 Units: ug/l

Time:			15:06		15:38		16:11		16:45	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.1	anr							
Arsenic	3.0	1.8	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	1.8								
Boron	100	1.3	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	5.5	anr							
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.9	0.40	<10	1.0	<10	0.0	<10	0.30	<10
Iron	100	3.7	1.3	<100	1.0	<100	-0.20	<100	2.6	<100
Lead	3.0	1.6	anr							
Lithium	50	1.1								
Magnesium	5000	27	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.3	anr							
Phosphorus	50	2.4								
Potassium	10000	51	anr							
Selenium	10	3.2	anr							
Silicon	200	2.2								
Silver	10	.5	0.0	<10	0.0	<10	-0.20	<10	0.0	<10
Sodium	10000	12	anr							
Strontium	10	.1	anr							
Sulfur	50	5.7								
Thallium	2.0	1.2	anr							
Tin	10	1.3								
Titanium	10	.3								
Tungsten	50	1.4								
Vanadium	50	.4	anr							
Zinc	20	.4	0.20	<20	-0.10	<20	0.0	<20	-0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43352 Units: ug/l

Time: / Sample ID:			15:06 CCB8		15:38 CCB9		16:11 CCB10		16:45 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43352 Units: ug/l

Time:			17:19		17:57	
Sample ID:			CCB12		CCB13	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	16	anr			
Antimony	6.0	2.1	anr			
Arsenic	3.0	1.8	anr			
Barium	200	.4	anr			
Beryllium	1.0	.1	anr			
Bismuth	20	1.8				
Boron	100	1.3	anr			
Cadmium	3.0	.2	anr			
Calcium	5000	5.5	anr			
Chromium	10	.3	anr			
Cobalt	50	.4	anr			
Copper	10	.9	0.50	<10	0.30	<10
Iron	100	3.7	2.1	<100	1.9	<100
Lead	3.0	1.6	anr			
Lithium	50	1.1				
Magnesium	5000	27	anr			
Manganese	15	.1	anr			
Molybdenum	20	.6				
Nickel	10	.3	anr			
Phosphorus	50	2.4				
Potassium	10000	51	anr			
Selenium	10	3.2	anr			
Silicon	200	2.2				
Silver	10	.5	-0.30	<10	-0.20	<10
Sodium	10000	12	anr			
Strontium	10	.1	anr			
Sulfur	50	5.7				
Thallium	2.0	1.2	anr			
Tin	10	1.3				
Titanium	10	.3				
Tungsten	50	1.4				
Vanadium	50	.4	anr			
Zinc	20	.4	0.0	<20	-0.10	<20

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA43352 Units: ug/l

Time:			17:19		17:57	
Sample ID:			CCB12		CCB13	
Metal	RL	IDL	raw	final	raw	final
Zirconium	10	.3				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		10:57	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	2000	2040	102.0
Iron	40000	41800	104.5
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	255	102.0
Sodium	anr		
Strontium	anr		
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	2040	102.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		10:57	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		10:44			11:34			12:08	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2010	100.5	2000	2020	101.0	2000	2070	103.5
Iron	40000	41600	104.0	40000	41300	103.3	40000	41900	104.8
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	251	100.4	250	254	101.6	250	257	102.8
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2060	103.0	2000	2050	102.5	2000	2080	104.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		10:44			11:34			12:08	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		12:42			13:18			13:55	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2070	103.5	2000	2080	104.0	2000	2040	102.0
Iron	40000	42100	105.3	40000	42300	105.8	40000	41800	104.5
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	257	102.8	250	258	103.2	250	255	102.0
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2090	104.5	2000	2090	104.5	2000	2070	103.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		12:42			13:18			13:55	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		14:29			15:04			15:35	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2090	104.5	2000	2060	103.0	2000	2060	103.0
Iron	40000	42700	106.8	40000	42200	105.5	40000	42200	105.5
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	259	103.6	250	256	102.4	250	257	102.8
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2080	104.0	2000	2070	103.5	2000	2070	103.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		14:29			15:04			15:35	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		16:08			16:43			17:16	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2010	100.5	2000	2010	100.5	2000	2040	102.0
Iron	40000	40900	102.3	40000	40900	102.3	40000	41100	102.8
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	250	252	100.8	250	251	100.4	250	254	101.6
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								
Zinc	2000	2020	101.0	2000	2010	100.5	2000	2000	100.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		16:08			16:43			17:16	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		17:54	
Sample ID:	CCV	CCV12	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	2000	2000	100.0
Iron	40000	40100	100.3
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	250	250	100.0
Sodium	anr		
Strontium	anr		
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		
Zinc	2000	1990	99.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA43352 Units: ug/l

Time:		17:54	
Sample ID:	CCV	CCV12	
Metal	True	Results	% Rec
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA43352 Units: ug/l

Time:		11:19			11:22	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	5000	5360	107.2			
Iron				150000	155000	103.3
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	625	675	108.0			
Sodium						
Strontium	anr					
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	5000	5270	105.4			

HIGH STANDARD CHECK SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA43352 Units: ug/l

Time:		11:19			11:22	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

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LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA43352 Units: ug/l

Time:				11:06		11:09		16:30	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	10.7	107.0				
Iron	100	500		114	114.0				
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	5.7	114.0				
Sodium	5000		1000	anr					
Strontium	10			anr					
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	22.7	113.5				

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA43352 Units: ug/l

Time:				11:06		11:09		16:30	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

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LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA43352 Units: ug/l

Time:				16:33	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	anr	
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10	anr	
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	10.4	104.0
Iron	100	500		109	109.0
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	5.5	110.0
Sodium	5000		1000	anr	
Strontium	10			anr	
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	
Zinc	20		10	21.7	108.5

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA43352 Units: ug/l

Time:				16:33	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

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INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA43352 Units: ug/l

Time:			11:12		11:16		16:36		16:40	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	563000	112.6	562000	112.4	546000	109.2	557000	111.4
Antimony		1000	5.1		1070	107.0	0.80		1040	104.0
Arsenic		1000	-1.0		1120	112.0	2.6		1090	109.0
Barium		500	1.2		548	109.6	1.0		534	106.8
Beryllium		500	0.0		527	105.4	0.0		512	102.4
Bismuth		500	-1.1		546	109.2	-1.5		534	106.8
Boron		500	1.2		529	105.8	2.3		519	103.8
Cadmium		1000	0.30		1080	108.0	0.30		1060	106.0
Calcium	400000	400000	412000	103.0	424000	106.0	401000	100.3	414000	103.5
Chromium		500	1.8		509	101.8	1.9		498	99.6
Cobalt		500	-0.10		508	101.6	-0.30		500	100.0
Copper		500	-1.4		543	108.6	-1.5		531	106.2
Iron	200000	200000	203000	101.5	211000	105.5	196000	98.0	206000	103.0
Lead		1000	4.5		1010	101.0	1.1		998	99.8
Lithium		500	4.0		584	116.8	3.1		571	114.2
Magnesium	500000	500000	549000	109.8	548000	109.6	534000	106.8	536000	107.2
Manganese		500	-1.6		529	105.8	-1.7		518	103.6
Molybdenum		500	-2.5		516	103.2	-3.0		504	100.8
Nickel		1000	2.4		1020	102.0	3.4		1010	101.0
Phosphorus		500	14.3		549	109.8	15.6		536	107.2
Potassium			4.5		10.7		-42		-21	
Selenium		1000	1.7		1040	104.0	3.9		1010	101.0
Silicon		500	-15		542	108.4	-13		530	106.0
Silver		1000	2.4		1140	114.0	1.2		1120	112.0
Sodium			36.1		-77		-8.4		-110	
Strontium		500	2.6		579	115.8	2.6		567	113.4
Sulfur		500	20.6		558	111.6	22.9		552	110.4
Thallium		1000	-2.9		1020	102.0	0.50		1000	100.0
Tin		500	-3.5		485	97.0	-3.3		474	94.8
Titanium		500	0.40		542	108.4	0.30		531	106.2
Tungsten		500	3.5		507	101.4	4.1		502	100.4
Vanadium		500	-1.0		511	102.2	-0.60		502	100.4
Zinc		1000	0.50		986	98.6	0.50		966	96.6

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA43352 Units: ug/l

Time:			11:12		11:16		16:36		16:40	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zirconium		500	3.8		503	100.6	3.4		488	97.6

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA43352 Units: ug/l

Time:			17:22		17:25	
Sample ID:	ICSA	ICSAB	ICSA3		ICSAB3	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	540000	108.0	547000	109.4
Antimony		1000	0.30		1040	104.0
Arsenic		1000	1.4		1090	109.0
Barium		500	1.2		527	105.4
Beryllium		500	0.10		506	101.2
Bismuth		500	-2.0		531	106.2
Boron		500	2.8		516	103.2
Cadmium		1000	0.40		1050	105.0
Calcium	400000	400000	390000	97.5	409000	102.3
Chromium		500	1.6		495	99.0
Cobalt		500	-0.40		500	100.0
Copper		500	-1.4		530	106.0
Iron	200000	200000	194000	97.0	203000	101.5
Lead		1000	1.0		994	99.4
Lithium		500	5.9		568	113.6
Magnesium	500000	500000	529000	105.8	530000	106.0
Manganese		500	-1.8		520	104.0
Molybdenum		500	-1.7		501	100.2
Nickel		1000	3.2		1010	101.0
Phosphorus		500	16.0		532	106.4
Potassium			12.1		-23	
Selenium		1000	4.7		1000	100.0
Silicon		500	-11		531	106.2
Silver		1000	0.90		1110	111.0
Sodium			39.5		-77	
Strontium		500	2.6		561	112.2
Sulfur		500	18.8		543	108.6
Thallium		1000	0.50		997	99.7
Tin		500	-4.7		471	94.2
Titanium		500	0.20		525	105.0
Tungsten		500	2.8		499	99.8
Vanadium		500	-0.60		497	99.4
Zinc		1000	1.0		962	96.2

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INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: SD120717M1.ICP Date Analyzed: 12/07/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA43352 Units: ug/l

Time:			17:22		17:25	
Sample ID:	ICSA	ICSAB	ICSA3		ICSAB3	
Metal	True	True	Results	% Rec	Results	% Rec
Zirconium		500	3.6		498	99.6

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5120817W1.CSV Date Analyzed: 12/08/17 Methods: EPA 245.1
Analyst: JA Run ID: MA43357
Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:12	MA43357-STD1	1		R=0.9997307, B=1.8952e-4, C=-8.5499e-3
09:13	MA43357-STD2	1		STDB
09:15	MA43357-STD3	1		STDC
09:16	MA43357-STD4	1		STDD
09:18	MA43357-STD5	1		STDE
09:19	MA43357-STD6	1		STDF
09:23	MA43357-STD7	1		STDF
09:42	MA43357-ICV1	1		
09:43	MA43357-ICB1	1		
09:45	MA43357-ICCV1	1		
09:46	MA43357-CCB1	1		
09:49	MA43357-CRI1	1		
09:52	MP4662-MB1	1		
09:54	MP4662-B1	1		
09:55	MP4662-S1	1		
09:57	MP4662-S2	1		
09:58	JC56672-7A	1		
10:00	JC56672-8A	1		
10:02	JC56672-9A	1		
---------->	Last reportable sample/prep for job JC56672			
10:03	MA43357-CCV1	1		
10:04	MA43357-CCB2	1		
10:06	ZZZZZZ	1		
10:07	ZZZZZZ	1		
10:09	ZZZZZZ	2		
10:11	MA43357-CRI2	1		
10:13	MA43357-CCV2	1		
10:15	MA43357-CCB3	1		
---------->	Last reportable CCB for job JC56672			
	Refer to raw data for calibration curve and standards.			

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5120817W1.CSV Date Analyzed: 12/08/17 Methods: EPA 245.1
QC Limits: result < RL Run ID: MA43357 Units: ug/l

Time:			09:43		09:46		10:04		10:15	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.059	-0.066	<0.20	-0.016	<0.20	-0.0059	<0.20	0.011	<0.20

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5120817W1.CSV Date Analyzed: 12/08/17 Methods: EPA 245.1
QC Limits: 95 to 105 % Recovery Run ID: MA43357 Units: ug/l

Time:		09:45	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Mercury	2.5	2.5	100.0

(*) Outside of QC limits
(anr) Analyte not requested

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CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5120817W1.CSV Date Analyzed: 12/08/17 Methods: EPA 245.1
QC Limits: 90 to 110 % Recovery Run ID: MA43357 Units: ug/l

Time:		09:42			10:03			10:13	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	3	2.8	93.3	2.5	2.5	100.0	2.5	2.5	100.0

(*) Outside of QC limits
(anr) Analyte not requested

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LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: H5120817W1.CSV Date Analyzed: 12/08/17 Methods: EPA 245.1
QC Limits: 70 to 130 % Recovery Run ID: MA43357 Units: ug/l

Time:			09:49		10:11	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Mercury	0.20		0.17	85.0	0.18	90.0

(*) Outside of QC limits
(anr) Analyte not requested

8.2.4
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BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/07/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	32		
Antimony	6.0	2.1	3		
Arsenic	3.0	1.8	2.6		
Barium	200	.4	1		
Beryllium	1.0	.1	.31		
Bismuth	20	1.8	5.5		
Boron	100	1.3	7.8		
Cadmium	3.0	.2	.69		
Calcium	5000	5.5	48		
Chromium	10	.3	1.6		
Cobalt	50	.4	.7		
Copper	10	.9	6.5	0.70	<10
Iron	100	3.7	20	-0.70	<100
Lead	3.0	1.6	2.6		
Lithium	50	1.1	11		
Magnesium	5000	27	59		
Manganese	15	.1	.78		
Molybdenum	20	.6	5.7		
Nickel	10	.3	5.2		
Phosphorus	50	2.4	14		
Potassium	10000	51	290		
Selenium	10	3.2	7.2		
Silicon	200	2.2	32		
Silver	10	.5	3	0.0	<10
Sodium	10000	12	170		
Strontium	10	.1	.3		
Sulfur	50	5.7	14		
Thallium	2.0	1.2	1.5		
Tin	50	1.3	7.6		
Titanium	10	.3	1.3		
Tungsten	50	1.4	7.8		
Vanadium	50	.4	.95		
Zinc	20	.4	2.2	0.70	<20

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/07/17

Metal	RL	IDL	MDL	MB raw	final
Zirconium	10	.3	1.2		

Associated samples MP4623: JC56672-7A, JC56672-8A, JC56672-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/07/17

Metal	JC56256-1 Original MS		Spikelot MPEPA200.7% Rec		QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	anr				
Beryllium					
Bismuth					
Boron	anr				
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper	2.7	1980	2000	98.9	70-130
Iron	9.1	25500	25000	102.0	70-130
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium					
Selenium	anr				
Silicon					
Silver	0.80	85.5	80	105.9	70-130
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	0.90	2010	2000	100.5	70-130
Zirconium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/07/17

	JC56256-1	Spikelot	QC
Metal	Original MS	MPEPA200.7% Rec	Limits

Associated samples MP4623: JC56672-7A, JC56672-8A, JC56672-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/07/17

Metal	JC56256-1 Original	MSD	Spikelot MPEPA200.7	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	2.7	2000	2000	99.9	1.0	10
Iron	9.1	25900	25000	103.6	1.6	10
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	0.80	86.7	80	107.4	1.4	10
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	0.90	2030	2000	101.5	1.0	10
Zirconium						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/07/17

Metal	JC56256-1 Original MSD	Spikelot MPEPA200.7% Rec	MSD RPD	QC Limit

Associated samples MP4623: JC56672-7A, JC56672-8A, JC56672-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

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SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/07/17

Metal	BSP Result	Spikelot MPEPA200.7	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Bismuth				
Boron	anr			
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	2050	2000	102.5	85-115
Iron	26100	25000	104.4	85-115
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	84.6	80	105.8	85-115
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	2020	2000	101.0	85-115

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/07/17

Metal	BSP Result	Spikelot MPEPA200.7	% Rec	QC Limits
Zirconium				

Associated samples MP4623: JC56672-7A, JC56672-8A, JC56672-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

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SERIAL DILUTION RESULTS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/07/17

Metal	JC56256-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Bismuth				
Boron	anr			
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	2.70	4.80	77.8 (a)	0-10
Iron	9.10	0.00	100.0(a)	0-10
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	0.800	0.00	100.0(a)	0-10
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	0.900	2.40	166.7(a)	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4623
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/07/17

Metal	JC56256-1 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP4623: JC56672-7A, JC56672-8A, JC56672-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4662 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/08/17

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.059	.082	0.060	<0.20

Associated samples MP4662: JC56672-7A, JC56672-8A, JC56672-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4662 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/08/17

Metal	JC56672-7A Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0	2.2	2	110.0	70-130

Associated samples MP4662: JC56672-7A, JC56672-8A, JC56672-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4662 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/08/17

Metal	JC56672-7A Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.0	2.0	2	100.0	9.5	19

Associated samples MP4662: JC56672-7A, JC56672-8A, JC56672-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

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ACCUTEST
JC56672

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

QC Batch ID: MP4662
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 12/08/17

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	2.1	2	105.0	85-115

Associated samples MP4662: JC56672-7A, JC56672-8A, JC56672-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide	GP9806/GN73619	0.010	0.0	mg/l	0.0833	0.0865	103.8	90-110%
HEM Oil and Grease	GP9794/GN73581	5.0	0.0	mg/l	40.32	38.1	94.5	78-114%
Solids, Total Suspended	GN73566	4.0	0.0	mg/l				

Associated Samples:
Batch GP9794: JC56672-7A, JC56672-8A, JC56672-9A
Batch GP9806: JC56672-7A, JC56672-8A, JC56672-9A
Batch GN73566: JC56672-7A, JC56672-8A, JC56672-9A
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Cyanide	GP9806/GN73619	JC56344-20	mg/l	0.0	0.0	0.0	0-32%
HEM Oil and Grease	GP9794/GN73581	JC56702-1	mg/l	1.3	0.0	200.0(a)	0-18%
Solids, Total Suspended	GN73566	JC56665-1	mg/l	840	855	1.8	0-17%

Associated Samples:
Batch GP9794: JC56672-7A, JC56672-8A, JC56672-9A
Batch GP9806: JC56672-7A, JC56672-8A, JC56672-9A
Batch GN73566: JC56672-7A, JC56672-8A, JC56672-9A
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Cyanide	GP9806/GN73619	JC56344-20	mg/l	0.0	0.0833	0.064	76.8N(a)	90-110%
HEM Oil and Grease	GP9794/GN73581	JC56612-1	mg/l	1.1	40.32	30.7	73.4N(a)	78-114%

Associated Samples:
Batch GP9794: JC56672-7A, JC56672-8A, JC56672-9A
Batch GP9806: JC56672-7A, JC56672-8A, JC56672-9A
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E120717W1.CN Date Analyzed: 12/07/17 Methods: EPA 335.4/LACHAT
Analyst: BM Run ID: GN73619
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:43	GN73619-STD1	1		STDA
14:44	GN73619-STD2	1		STDB
14:45	GN73619-STD3	1		STDC
14:47	GN73619-STD4	1		STDD
14:48	GN73619-STD5	1		STDE
14:49	GN73619-STD6	1		STDF
14:51	GN73619-STD7	1		STDG
14:52	GN73619-ICV1	1		
14:54	GN73619-ICB1	1		
14:55	GN73619-CCV1	1		
14:56	GN73619-CCB1	1		
14:58	GP9806-MB1	1		
14:59	GP9806-B1	1		
15:00	GP9806-S1	1		
15:02	GP9806-S2	1		
15:03	GP9806-D1	1		
15:04	JC56344-20	1		(sample used for QC only; not part of login JC56672)
15:06	JC56518-3	1		(sample used for QC only; not part of login JC56672)
15:07	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:09	JC56672-7A	1		
15:10	ZZZZZZ	1		
15:10	JC56672-8A	1		
15:11	GN73619-CCV2	1		
15:13	GN73619-CCB2	1		
15:14	ZZZZZZ	1		
15:14	JC56672-9A	1		
15:15	ZZZZZZ	1		
15:17	ZZZZZZ	1		
15:18	ZZZZZZ	1		
15:19	ZZZZZZ	1		
15:21	ZZZZZZ	1		
15:22	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E120717W1.CN Date Analyzed: 12/07/17 Methods: EPA 335.4/LACHAT
Analyst: BM Run ID: GN73619
Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:23	ZZZZZZ	1		
15:25	ZZZZZZ	1		
15:26	ZZZZZZ	1		
15:28	GN73619-CCV3	1		
15:29	GN73619-CCB3	1		
15:30	ZZZZZZ	1		
15:44	GN73619-CCV4	1		
15:45	GN73619-CCB4	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC56672
Account: UTC - United Technologies Corporation
Project: SECORINI: Zanesville OH, Monthly

File ID: E120717W1.CN Date Analyzed: 12/07/17 Methods: EPA 335.4/LACHAT
Run ID: GN73619 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN73619-ICV1	Cyanide	0.32	0.010	0.0058	.3	106.7	90-110
GN73619-ICB1	Cyanide	-0.0059	0.010	0.0058			
GN73619-CCV1	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN73619-CCB1	Cyanide	0.0058 U	0.010	0.0058			
GN73619-CCV2	Cyanide	0.44	0.010	0.0058	.4	110.0	90-110
GN73619-CCB2	Cyanide	0.0058 U	0.010	0.0058			
GN73619-CCV3	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN73619-CCB3	Cyanide	0.0058 U	0.010	0.0058			
GN73619-CCV4	Cyanide	0.43	0.010	0.0058	.4	107.5	90-110
GN73619-CCB4	Cyanide	0.0058 U	0.010	0.0058			

(!) Outside of QC limits

Appendix B METHODS & PROCEDURES

METHODS AND PROCEDURES

1.0 INTRODUCTION

This Appendix contains the methods and procedures used to collect and analyze data used in the preparation of the Zanesville Well Field Groundwater Report. The methods and procedures provide a description of the groundwater elevation data collection methods, groundwater sampling procedures, potentiometric surface interpolation processes, and the statistical analyses performed to support the conclusions of this report.

2.0 GROUNDWATER ELEVATION DATA COLLECTION

Depth to groundwater is measured using an electronic water level indicator. The depth to groundwater is measured from the top of well casing, and recorded to the nearest 0.01-foot increment. As a quality assurance/quality control (QA/QC) measure, the water levels are compared to 2-year historical ranges for each well. If the water level measured falls outside the historical range for a given well, the water level is re-measured to verify its accuracy. Groundwater measurements are collected in accordance with the approved schedule summarized in Table 1 of the RGWMP (SECOR, 2007).

Groundwater level data is entered into the water level database. The entered data is checked against the field data sheets for accuracy and to eliminate transcription errors prior to import into the database. Following data import, the depth-to-water measurements are referenced to the national geodetic vertical datum (mean sea level) using the November 12, 2002 surveyed measuring point elevations.

3.0 GROUNDWATER SAMPLING

Prior to sampling, the monitoring wells are purged of a minimum of three well casing volumes or, for wells with low recharge rates, the water column is completely evacuated. Groundwater purging is completed using dedicated bladder pumps, dedicated disposable bailers, or a decontaminated, portable low flow purge pump. All non-dedicated down-hole sampling equipment is decontaminated before sampling the next monitoring well in accordance with the Sampling Analysis Plan (SAP).

The following data is collected and recorded on the Groundwater Sampling Field Data Sheets: purge water volume, color, temperature, conductivity, dissolved oxygen, oxidation-reduction potential (ORP), and pH. Purge water and decontamination water are collected in a portable polyethylene tank or 5 gallon bucket and discharged to the air-stripper for treatment.

Groundwater samples are collected directly from the discharge of the low flow pump or the dedicated disposable bailer. Laboratory prepared volatile organic analytes (VOA) vials containing hydrochloric acid are labeled and then filled without displacing the acid preservative.

The sample containers are placed in an insulated container with ice immediately after sample collection.

4.0 GROUNDWATER ELEVATION DATA ANALYSIS

Potentiometric surfaces for each zone are generated using a method of kriging with log-linear interpolation as described in "Kriging Water Levels with a Regional-Linear and Point Logarithmic Drift" (Ground Water 40, No. 2; Tonkin and Larson; 2002) and are presented in the report figures. Kriging is commonly used in hydrogeologic applications for interpretation of groundwater level data to a regular grid suitable for contouring. The application of the selected interpolation method further adds the ability to incorporate the point logarithmic effects observed at the groundwater extraction wells to be represented more appropriately within the interpolated potentiometric surfaces. The result of the kriging with log-linear interpolation is uniform gridded data that is then contoured and overlain on the Site base maps.

4.1. Potentiometric Surface Interpolation

While the potentiometric surface evaluation using the kriging with log-linear drift algorithm has advantages in interpolation of groundwater extraction wells and uniform treatment of the Site, it is limited by the availability and quality of data points. In some areas where there is a paucity of groundwater elevation data or where groundwater elevation data does not accurately fit the model of log-linear drift, groundwater contours may be less accurately interpreted.

Data used as a basis for the potentiometric surface evaluation includes measured depth to groundwater in the monitoring wells converted to elevation above mean sea level using surveyed datum (top of casing) and extraction well flow rate data from both on-Site and off Site groundwater containment wells (I-1, I-2, I-3, I-4, W-6 and W-12). In addition, the City of Zanesville Well Field personnel provide data regarding the total daily flow rate and individual well operational data for the public water supply wells in the Zanesville Well Field.

4.2. Gradient Vector Analysis

For the purposes of identifying the hydraulic gradient (magnitude and direction) in key portions of the Site, hydraulic gradients were directly calculated from measured groundwater elevations and solved using the "three point method." A plane in space may be described by any three points and an azimuth and magnitude of the slope of the defined potentiometric surface may be calculated. The hydraulic gradient vectors are calculated quarterly at key well locations located at the margins of the identified plume, as available.

4.3. Particle Tracking

A combination of GIS particle tracking algorithm and Target Zone maps are used to evaluate the areal distribution of the capture zone associated with the extraction wells. For each of the potentiometric surface maps developed quarterly for the shallow, intermediate and deep zones,

a particle tracking analysis is completed using particles originating from the extent of the Target Zone.

5.0 STATISTICAL ANALYSIS OF TCE AND 1,2-DCE

5.1. Statistical Analysis of VOC Data

In order to conduct an unbiased statistical analysis of the data, the analytical data for TCE and 1,2-DCE from the most recent sampling events are appended to the data files previously uploaded in the statistical analysis software. TCE and 1,2-DCE values from the most recent sampling events are then statistically evaluated relative to the historic data set. To prepare the data for statistical analysis, the raw data are filtered for software application and usability, formatted to accommodate upload by the USEPA approved statistical software "Sanitas™", and uploaded into the Sanitas™ software database. A description of the database preparation procedures and subsequent statistical analyses follows.

5.1.1. Database Preparation

The preparation of the analytical data prior to use with the Sanitas™ software consists of data scrubbing, formatting, and uploading. Data scrubbing is first conducted by visually scanning the electronic data for well identification (ID) inconsistencies. Once well ID issues are resolved, the "Limit-of-Detection" decision criterion is investigated. Given the historical variety of analytical labs used at the Site, a method to statistically interpret concentrations below the detection limit of the analytical procedure was explored. Typically, these data are reported as not detected (ND) rather than as zero or not present. In the statistical literature, ND results are referred to as censored data. The approved technique is to use the given detection limit for the constituent of concern (COC) divided by two for statistical analysis for sites where a small amount of the analytical data are censored.

5.1.2. Sanitas™ Statistical Analysis

The statistical software used is Sanitas™ for Groundwater. This software is approved by the USEPA and contains statistical programs to be used for Resource Conservation and Recovery Act (RCRA) facilities. These statistical programs meet the statistical requirements mandated in 40 Code of Federal Regulations (CFR) Parts 257, 258, and 264, the USEPA *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance*, and the ASTM *Standard Guide for Developing Appropriate Statistical Approaches for Groundwater Detection Monitoring Programs* D-6312-98.

5.1.2.1. Outlier Analysis

The outlier analysis is performed on the log-normalized data and identifies data points that do not appear to fit the distribution curve of the other VOC data. A laboratory reported concentration of TCE or 1,2-DCE is considered suspect if the concentration is an order of

magnitude larger or smaller than the current data set for that well. The analysis assumes the concentrations are normal or log-normally distributed. A minimum of eight samples is recommended for outlier analysis.

5.1.2.2. Sen's Slope Estimator Analysis

This statistical procedure is a non-parametric analysis used to evaluate whether a potential increase or decrease in the reported TCE and 1,2-DCE concentrations exists over time. The program calculates the slope of the linear relationship between the constituent's concentration and time. Two data sets are reviewed for the Sen's Slope Estimator. The first contains the entire historical record for each well and the second, per EPA request (letter October 26, 2009), contains only the most recent five years of data and is reviewed as part of this report for quarterly and semi-annually sampled wells, while the previous eight years of data is reviewed for annually sampled wells to provide a statistically significant data set.

5.1.2.3. Seasonality

The statistical procedure for seasonality is a non-parametric analysis used to evaluate the effect of the changing seasons on the concentrations of TCE and 1,2-DCE. This procedure requires three data points for each of the four seasons. The majority of the wells contain insufficient data to evaluate seasonality (either insufficient data or all data at or near non-detect).

Appendix C CITY OF ZANESVILLE WELL FIELD DATA

Zanesville Water Well Hours July 2017															
	W-1	W-2	W-3	W-6	W-7	W-9	W-10	W-11	W-12	W-14	W-15	W-16	W-17	W-18	W-20
1	20.9	0	0	24	0	20.8	20.9	20.9	24	20.9	20.9	20.9	20.9	0	0
2	18.3	0	0	24	0	18.3	18.3	18.3	24	18.3	18.3	18.2	18.3	0	0
3	18.2	0	0	24	0	18.3	18.3	18.3	24	18.3	18.2	18.2	18.1	0	0
4	17.6	0	0	24	0	17.6	17.6	17.6	24	17.6	17.6	17.6	17.6	0	0
5	18.8	11.5	9.3	24	0	7.4	9.4	18.8	24	3.4	18.8	18.9	9.5	9.4	9.5
6	18.5	18.5	18.6	24	0	0	0	18.5	24	0	18.6	18.6	0	18.6	18.6
7	17.6	17.5	17.5	24	0	0	0	17.5	24	0	17.5	17.5	0	17.5	17.5
8	15.9	15.9	15.9	24	0	0	0	15.9	24	0	15.9	15.8	0	15.9	15.8
9	18.4	18.4	18.4	24	0	0	0	18.3	24	0	18.5	18.4	0	18.3	18.4
10	17.8	17.8	17.7	24	0	0	0	17.8	24	0	17.5	17.7	0	17.8	17.7
11	16.6	16.6	16.6	24	0	0	0	16.6	24	0	16.6	16.6	0	16.5	16.6
12	17.2	17.2	17.2	24	0	0	0	17.2	24	0	17.2	17.2	0	17.2	17.2
13	17.9	17.9	18	24	0	0	0	17.9	24	0	18.1	18	0	18.1	18
14	17.3	17.3	4.2	24	0	0	13.1	17.3	24	0	17.3	17.4	0	17.3	17.4
15	17.9	17.9	0	24	0	0	17.9	17.9	24	0	17.9	17.9	0	17.9	17.9
16	17	17	0	24	0	0	17	17	24	0	17.1	17	0	17.1	17
17	17.4	17.4	0	24	0	0	17.4	17.5	24	0	17.4	17.5	0	17.4	17.5
18	18.5	18.5	0	24	0	0	18.5	18.4	24	0	18.5	18.4	0	18.5	18.5
19	17.7	17.7	0	24	0	0	17.7	17.8	24	0	17.6	17.7	0	17.6	17.6
20	23.4	23.4	0	24	0	0	23.4	23.3	24	0	23.4	23.3	0	23.4	23.4
21	17.7	17.7	0	24	0	0	17.7	17.7	24	0	17.7	17.7	0	17.7	17.7
22	17.5	17.5	0	24	0	0	17.5	17.6	24	0	17.5	17.6	0	17.5	17.5
23	16.1	16.1	0	24	0	0	16.2	16.1	24	0	16.2	16.1	0	16.3	16.2
24	17.9	17.9	0	24	0	0	17.8	17.8	24	0	17.9	17.9	0	17.8	17.8
25	17.4	17.4	0	24	0	0	17.4	17.4	24	0	17.2	17.3	0	17.2	17.3
26	19.1	19.1	0	24	0	0	19.1	19.1	24	0	19	19	0	19.1	19
27	17.6	17.6	0	24	0	0	17.6	17.6	24	0	17.6	17.6	0	17.5	17.6
28	18.4	18.4	0	24	0	0	18.4	18.4	24	0	18.4	18.3	0	18.4	18.4
29	17.5	17.5	0	24	0	0	17.4	17.5	12.1	0	17.4	17.5	0	17.4	17.6
30	16.9	16.9	0	24	0	0	163.9	16.9	0	0	16.8	16.8	0	16.9	16.9
31	17	17	0	24	0	0	17.1	17	0	0	17.2	17.1	0	17.2	17.1
Total	556	473.6	153.4	744	0	82.4	549.6	555.9	684.1	78.5	555.8	555.7	84.4	471.5	471.7

Zanesville Water Well Hours August 2017															
	W-1	W-2	W-3	W-6	W-7	W-9	W-10	W-11	W-12	W-14	W-15	W-16	W-17	W-18	W-20
1	21.5	21.5	0	24	0	0	21.5	21.5	0	0	21.4	21.5	0	21.4	21.5
2	19	19	0	24	0	0	19	19	0	0	19	19	0	18.9	18.9
3	17.8	17.9	0	24	0	0	17.8	17.9	0	0	17.9	17.9	0	17.9	17.8
4	18.5	18.5	0	24	0	0	18.6	18.5	0	0	18.5	18.5	0	18.5	18.5
5	17.3	17.3	0	24	0	0	17.2	17.2	0	0	17.2	17.2	0	17.2	17.3
6	17.3	17.2	0	24	0	0	17.3	17.3	0	0	17.4	17.3	0	17.4	17.3
7	17.7	17.8	0	24	0	0	17.7	17.7	0	0	17.7	17.8	0	17.7	17.7
8	19.3	19.2	0	24	0	0	19.3	19.3	6	0	19.2	19.1	0	19.1	19.2
9	20	20	0	24	0	0	19.9	20	24	0	19.9	20	0	20	19.9
10	18.1	18.2	0	24	0	0	18.1	18.1	24	0	18.2	18.2	0	18.1	18.2
11	18.4	18.4	0	24	0	0	18.4	18.4	24	0	18.4	18.4	0	18.4	18.4
12	18.1	18.1	0	24	0	0	13.7	18.1	24	0	17.9	17.9	0	17.9	17.9
13	18.8	18.7	0	24	0	0	18.8	18.8	24	0	18.7	18.7	0	18.7	18.6
14	17.8	17.8	0	24	0	0	17.8	17.8	24	0	17.8	17.7	0	17.8	17.8
15	18	18.1	0	24	0	0	18	18	24	0	18	18.1	0	18	18.1
16	23.5	23.4	0	24	0	0	23.5	23.5	24	0	23.5	23.4	0	23.5	23.4
17	17.8	17.9	0	24	0	0	17.8	17.8	21.4	0	17.8	17.9	0	17.8	17.9
18	17.6	17.5	0	24	0	0	17.6	17.6	0	0	17.7	17.6	0	17.6	17.6
19	18.7	18.8	0	24	0	0	18.8	18.8	0	0	18.6	18.7	0	18.7	18.7
20	17	17	0	24	0	0	16.9	16.9	0	0	178	17	0	17	17
21	18.6	18.5	0	24	0	0	18.6	18.6	12.6	0	18.6	18.6	0	18.6	18.6
22	16.3	16.4	0	24	0	0	16.4	16.3	24	0	16.3	16.3	0	16.3	16.2
23	23.3	23.3	0	24	0	0	23.2	23.3	24	0	23.3	23.2	0	23.3	23.3
24	17.6	17.6	0	24	0	0	17.7	17.7	24	0	17.6	17.7	0	17.7	17.7
25	18.6	18.6	0	24	0	0	18.6	18.6	24	0	18.5	18.5	0	18.4	18.5
26	18.3	18.3	0	24	0	0	18.3	18.3	24	0	18.3	18.2	0	18.2	18.2
27	17.2	17.2	0	24	0	0	17.1	17.1	24	0	17.1	17.2	0	17.2	17.2
28	21.9	21.8	0	24	0	0	21.9	21.9	24	0	21.9	21.8	0	21.8	21.8
29	19.8	19.9	0	24	0	0	20.8	19.8	24	0	19.8	19.9	0	19.9	19.8
30	17	17	0	24	0	0	17	17	24	0	17	16.9	0	16.9	17
31	18.2	18.2	0	24	0	0	18.3	18.3	24	0	18.2	18.3	0	18.3	18.2
Total	579	579.1	0	744	0	0	575.6	579.1	472	0	739.4	578.5	0	578.2	578.2

Zanesville Water Well Hours September 2017															
	W-1	W-2	W-3	W-6	W-7	W-9	W-10	W-11	W-12	W-14	W-15	W-16	W-17	W-18	W-20
1	18.7	18.6	0	24	0	0	18.6	18.6	24	0	18.5	18.5	0	18.5	18.5
2	16.8	16.8	0	24	0	0	16.8	16.8	24	0	16.8	16.8	0	16.8	16.8
3	17.5	17.6	0	24	0	0	17.6	17.6	24	0	17.6	17.6	0	17.5	17.6
4	2.7	16.7	0	24	0	14.1	16.7	16.7	24	14.1	2.7	16.8	14	16.8	2.7
5	11.7	17.6	0	24	0	5.8	17.6	17.6	24	5.8	11.8	17.6	5.9	17.7	11.8
6	7.1	17.3	0	24	0	10.2	17.3	17.2	24	10.2	7	17.1	10.1	17.1	17
7	0	19.7	0	24	0	19.7	19.7	19.7	24	19.7	0	19.7	19.7	19.7	0
8	0	20.5	0	24	0	20.5	20.4	20.5	24	20.5	0	20.5	20.5	20.5	0
9	0	16.9	0	24	0	16.9	17	16.9	24	16.8	0	16.9	16.9	16.9	0
10	0	15.9	0	24	0	15.9	16.1	16	24	16	0	16	16	16	0
11	0	20.3	0	24	0	20.3	20.3	20.2	24	20.3	0	20.2	20.2	20.2	0
12	12.9	6.4	0	24	0	19.3	19.3	19.4	24	19.3	0	19.4	19.4	19.4	0
13	18.6	0	0	24	0	18.6	18.6	18.6	24	18.5	0	18.5	18.5	18.5	0
14	17.6	0	0	24	0	17.6	17.8	17.6	24	17.6	0	17.6	17.6	17.6	0
15	16.5	0	0	24	0	16.5	16.5	16.4	24	16.5	0	16.5	16.4	16.4	0
16	23.4	0	0	24	0	23.4	23.4	23.5	24	23.4	0	23.4	23.5	23.5	0
17	16.6	0	0	24	0	16.6	16.5	16.5	24	16.6	0	16.5	16.6	16.6	0
18	18.5	0	0	24	0	18.5	18.6	18.5	24	18.6	0	18.6	18.5	18.5	0
19	19.1	0	0	24	0	19.1	19.1	18.7	24	18.1	0	18.1	18.1	18.1	0
20	18.5	0	0	24	0	18.5	18.5	18.5	24	18.4	0	18.4	18.5	18.5	0
21	18.1	0	0	24	0	18.1	18.1	18	24	18	0	18	18	18	0
22	21.9	0	0	24	0	21.9	21.8	21.9	24	21.8	0	21.9	21.8	21.8	0
23	17.7	0	0	24	0	17.7	17.7	17.7	24	17.7	0	17.7	17.7	17.6	0
24	17.1	0	0	24	0	17.1	17.2	17.2	24	17.1	0	17.1	17.1	17.2	0
25	23.2	0	0	24	0	23.2	23.2	23.1	24	23.2	0	23.1	23.2	23.2	0
26	16.9	0	0	24	0	16.9	16.9	16.9	24	16.9	0	16.9	16.9	16.9	0
27	22.3	0	0	24	0	22.3	22.3	22.3	24	22.2	0	22.2	22.2	22.2	0
28	18.8	0	0	24	0	18.8	18.8	18.8	24	18.8	0	18.8	18.8	18.8	0
29	17.3	0	0	24	0	17.3	17.4	17.1	24	17.2	0	17.2	17.2	17.2	0
30	16.7	0	0	24	0	16.8	16.7	16.7	24	16.7	0	16.7	16.7	16.7	0
31															
Total	426.2	204.3	0	720	0	481.6	556.5	555.2	720	480	74.4	554.3	480	554.4	84.4

Zanesville Water Well Hours October 2017															
	W-1	W-2	W-3	W-6	W-7	W-9	W-10	W-11	W-12	W-14	W-15	W-16	W-17	W-18	W-20
1	17.9	0	0	24	0	17.8	17.9	17.8	24	17.7	0	17.8	17.8	17.8	0
2	23.4	0	0	24	0	23.4	23.4	23.5	24	7.6	15.9	23.4	23.5	7.5	15.9
3	17.2	0	0	24	0	17.1	17.1	17.1	24	0	17.1	17.2	17.1	0	17.2
4	18.4	0	0	24	0	18.5	18.4	18.4	24	0	18.4	18.4	18.4	0	18.4
5	17.5	0	0	24	0	17.5	17.6	17.6	24	0	17.5	17.5	17.5	0	17.5
6	18.1	0	0	24	0	18.1	18.1	18.1	24	0	18.1	18	18.1	0	18
7	16.2	0	0	24	0	16.2	16.2	16.2	24	0	16	16.1	16	0	16.1
8	16	0	0	24	0	16	16	16	24	0	16.3	15.8	15.9	0	15.8
9	17.4	0	0	24	0	17.5	17.4	17.4	24	0	17	17.4	17.3	0	17.4
10	17	0	0	24	0	17	17.6	18	24	0	17	17	17	0	17
11	16.7	0	0	24	0	16.6	16.5	15.7	24	0	16.5	16.5	16.6	0	16.5
12	18.2	0	0	24	0	18.3	18.3	18.3	24	0	18.3	18.3	18.3	0	18.3
13	16.6	0	0	24	0	16.5	16.6	16.8	24	0	16.5	16.6	16.5	0	16.6
14	17.8	0	0	24	0	17.8	17.8	17.5	24	0	17.8	17.7	17.7	0	17.7
15	15.8	0	0	24	0	15.8	15.8	15.8	24	0	15.8	15.9	15.9	0	15.9
16	17.6	0	0	24	0	17.7	17.6	17.7	24	0	17.7	17.6	17.7	0	17.6
17	16.7	0	0	24	0	16.7	16.7	16.7	24	0	16.6	16.7	16.6	0	16.7
18	18.1	0	0	24	0	18	18	18	24	0	18.1	18	18	0	18
19	17.6	0	0	24	0	17.6	17.2	17.6	24	0	17.5	17.6	17.6	0	17.5
20	17.3	0	0	24	0	17.3	17.2	17.3	24	0	17.2	17.3	17.2	0	17.3
21	17.2	0	0	24	0	17.2	17.3	17.2	24	0	17.2	17.2	17.2	0	17.2
22	16	0	0	24	0	16	15.9	16	24	0	16	16	16	0	15.9
23	17.2	0	0	24	0	17.2	17.3	17.2	24	0	17.2	17.2	17.2	0	17.2
24	16.8	0	0	24	0	16.8	16.7	16.8	24	0	16.8	16.7	16.7	0	16.7
25	17.1	0	0	24	0	17.2	17.2	17.1	24	12.8	4.4	17.2	17.3	0	17.2
26	17.6	0	0	24	0	17.5	17.5	17.6	24	17.5	0	17.5	17.4	0	17.5
27	17.7	0	0	24	0	17.7	17.7	17.6	24	17.6	0	17.6	17.6	0	17.6
28	15.7	0	0	24	0	15.7	15.7	15.8	24	15.7	0	15.7	15.8	0	15.7
29	16.5	0	0	24	0	16.5	16.5	16.5	24	16.4	0	16.5	16.4	0	16.5
30	18.4	0	0	24	0	18.4	18.4	18.4	24	18.6	0	18.5	18.6	0	18.5
31	18.4	0	0	24	0	18.4	18.5	18.4	24	18.4	0	18.5	18.4	0	18.5
Total	540.1	0	0	744	0	540	540.1	540.1	744	142.3	396.9	539.4	539.3	25.3	513.9

Zanesville Water Well Hours November 2017															
	W-1	W-2	W-3	W-6	W-7	W-9	W-10	W-11	W-12	W-14	W-15	W-16	W-17	W-18	W-20
1	16.1	0	0	24	0	16.1	1.1	16	24	16.1	15	16	1.1	15	16
2	16.3	0	0	24	0	16.3	0	16.3	24	16.2	16.2	16.3	0	16.3	16.3
3	19.2	0	0	24	0	19.2	0	19.3	24	19.3	19.3	19.3	0	19.2	19.3
4	16.1	0	0	24	0	16.1	0	16	24	16	15.9	16	0	16	16
5	16.9	0	0	23	0	16.7	0	16.8	23	16.7	16.8	16.8	0	16.8	16.7
6	18.3	0	0	24	0	18.2	0	18.2	24	18.2	18.1	18.2	0	18.2	18.2
7	17	0	0	24	0	17.1	0	17.1	24	17.1	17.2	17.1	0	17.1	17.1
8	17	0	0	24	0	17	0	17	24	16.9	16.9	16.9	0	16.9	16.9
9	16	0	0	24	0	16	0	16	24	16	15.9	15.9	0	16	16
10	17.3	0	0	24	0	17.3	0	17.2	24	17.2	17.3	17.3	0	17.2	17.3
11	17.2	0	0	24	0	17.2	0	17.2	24	17.2	17.1	17.1	0	17.2	17.1
12	16.4	0	0	24	0	16.4	0	16.5	24	16.5	16.5	16.5	0	16.5	16.5
13	18.3	0	0	24	0	18.3	0	18.3	24	18.3	18.3	18.3	0	18.3	18.4
14	16.5	0	0	24	0	16.5	0	16.4	24	16.4	15.9	15.9	0	15.9	15.8
15	15.7	0	0	24	0	15.7	0	15.8	24	15.8	15.7	15.7	0	15.7	15.8
16	23.1	0	0	24	0	23	0	23	24	23	23.1	23.1	0	23.1	23
17	16.8	0	0	24	0	16.8	0	16.9	24	16.9	16.9	16.9	0	16.9	16.9
18	15.2	0	0	24	0	15.2	0	15.2	24	15.2	15.1	15.1	0	15.1	15.2
19	16	0	0	24	0	16	0	16	24	16	16	16	0	16	16
20	17	0	0	24	0	17	0	17	24	17	17	17	0	16.8	16.9
21	19.6	0	0	24	0	19.6	0	19.6	24	19.6	19.6	19.6	0	19.6	19.7
22	19.5	0	0	24	0	19.5	0	19.5	24	19.5	19.5	19.5	0	19.5	19.4
23	16.5	0	0	24	0	16.5	0	16.4	24	16.5	16.4	16.4	0	16.5	16.5
24	16.4	0	0	24	0	16.4	0	16.5	24	16.4	16.4	16.4	0	16.3	16.4
25	15.8	0	0	24	0	16.1	0	16.1	24	16.1	16.1	16.1	0	16.2	16.1
26	17.5	0	0	24	0	17.2	0	17.2	24	17.2	17.2	17.6	0	17.2	17.3
27	16.6	0	0	24	0	16.6	0	16.6	24	16.7	16.7	16.6	0	16.6	16.6
28	17	0	0	24	0	17	0	17	24	16.9	16.9	16.9	0	17	17
29	18.5	0	0	24	0	18.5	0	18.5	24	18.6	18.6	18.6	0	18.5	18.5
30	17.9	0	0	24	0	17.9	0	17.9	24	17.9	17.9	17.9	0	17.9	17.9
31															
Total	517.7	0	0	719	0	517.4	1.1	517.5	719	517.4	515.5	517	1.1	515.5	516.8

Zanesville Water Well Hours December 2017															
	W-1	W-2	W-3	W-6	W-7	W-9	W-10	W-11	W-12	W-14	W-15	W-16	W-17	W-18	W-20
1	17	0	0	24	0	17	0	17	24	17	16.9	17	0	17	17
2	16.9	0	0	24	0	16.9	0	16.9	24	16.9	16.9	16.8	0	16.9	16.9
3	16.6	0	0	24	0	16.6	0	16.6	24	16.6	16.6	16.6	0	16.6	16.6
4	17.6	0	0	24	0	17.6	12.6	17.6	24	17.6	7.8	18.4	9.8	5	5
5	18.9	0	0	24	0	18.9	18.9	18.9	24	19	12	19	18.9	0	0
6	17.2	0	0	24	0	17.1	17.1	17.1	24	17	17	17	17	0	0
7	17.9	0	0	24	1.2	18	18	18	24	18	18	18	18	0	0
8	17.4	0	0	24	0	17.4	17.4	1.9	24	17.5	17.5	17.5	17.5	0	0
9	16.6	0	0	24	0	16.6	16.6	12.6	24	16.1	16.1	16.1	16.1	0	0
10	16.8	0	0	24	0	16.9	16.9	16.9	24	16.9	16.9	16.9	17	0	0
11	18.1	0	0	24	0	18.1	18.1	18.1	24	18	18.1	18.1	18.1	16.3	0
12	17.7	0	0	24	0	17.7	17.7	17.7	24	17.8	17.7	17.7	17.7	0	0
13	17.8	0	0	24	0	17.8	17.8	17.9	24	17.8	17.8	17.9	17.8	0	0
14	17.9	0	0	24	0	17.3	17.3	13.8	24	13.8	13.8	14.2	16.8	0	0
15	22.9	0	0	24	0	22.8	22.8	12.6	13	13.1	12.8	0.3	15.4	22.3	0
16	17.1	0	0	24	0	17.2	17.1	17.2	0	17.1	17.1	0	17.1	17.1	10.1
17	17.8	0	0	24	0	17.8	10.5	17.8	0	17.8	17.8	0	17.1	17.7	0
18	18.1	0	0	24	0	18	18	18	0	18.1	18.1	0.5	18.2	14.1	3.5
19	22	0	0	24	0	22	22	22	0	22	22	0	22	7.3	14.7
20	16.6	0	0	24	0	16.6	16.6	16.6	0	16.6	16.6	14.9	1.9	0	16.6
21	17.9	0	0	24	0	18	18	18	12.5	17.9	17.9	18	0	0	17.9
22	17.6	0	0	24	0	17.6	17.5	17.6	24	17.6	17.6	17.5	0	0	17.6
23	21.2	0	0	24	0	21.2	21.2	21.2	24	21.3	21.3	21.3	0	0	21.3
24	17	0	0	24	0	16.9	17.6	16.9	24	16.9	16.9	17	0	0	16.9
25	16.5	0	0	24	0	16.5	16.5	16.5	24	16.5	16.5	16.4	0	0	16.4
26	17.7	0	0	24	0	17.7	17.7	17.7	24	17.6	17.6	17.7	0	0	17.7
27	17.2	0	0	24	0	17.3	17.2	17.3	24	17.2	17.2	17.2	0	0	17.2
28	17.2	0	0	24	0	17.1	17.1	17.1	24	17	17	17	0	0	17
29	17.6	0	0	24	0	17.7	17.7	17.6	24	17.6	17.6	17.5	0	0	17.5
30	17.5	0	0	24	0	17.5	17.5	17.5	24	17.5	17.5	17.5	0	0	17.5
31	15.7	0	0	24	0	15.7	15.7	15.8	24	15.6	15.6	15.7	0	0	15.7
Total	552	0	0	744	1.2	551.5	489.1	518.4	601.5	537.4	520.2	449.7	276.4	150.3	293.1

Appendix D FOURTH QUARTER 2017 GROUNDWATER SAMPLING FIELD DATA SHEETS

Groundwater Development, Monitoring & Sampling Form

Stantec

ESPA-305 | Rev. 2.1 | Jan 2014

WELL I.D. B-2I

Client UTC

Project # 182602727

Site Zanesville Well Field

Field Pers Paul Sonney	**Date** 12/5/17	**Time** 1525	**Temp** 43°F
Sample ID B-2I	**Weather** sunny - Part.Cldy - Overcast - fog - Rain - Snow (circle)		**Wind** (vel/dir) 1 / GSW

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other — Stick up ☒ Flush Mount ☐ **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	60.46	**CASING VOLUME (gal) =**	3.55
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	10.65
DEPTH TO WATER (feet) =	39.58	**ACTUAL PURGE VOL (gal) =**	~~10.75~~ ~3gal
WATER COLUMN HEIGHT (feet) =	20.88	**DID WELL PURGE DRY (Y/N & gal) =**	Yes, ~3gal

PARAMETERS (YORISA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1536	~3	-	7.69	0.575	4.80	11.18	8	clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/5/17 START (2400hr) 1533 END (2400hr) 1536

SEDIMENT THICKNESS (start) — **SEDIMENT THICKNESS (end)** — (Original water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated/ Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) ~50'

(Other equ., purge block, air lifting, ...) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/5/17 SAMPLE TIME (2400hr) 1540

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN ~50' DRAW DOWN LESS THAN ____ % OF INITIAL WL DTW at sample time —

COLOR Clear **ODOR** Faint ☐ Medium ☐ Strong ☐ **NATURE OF ODOR** — **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

Stantec | ESPA-305 | Rev. 2.1 | Jan 2014

WELL I.D. B-25 | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers: P. Sonney	Date: 12/5/17	Time: 1600	Temp: 47°F
Sample ID: B-25	Weather: sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		Wind (vel/dir): 3 6(NW)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material: PVC ☐ Iron ☒ SS ☐ Other — Stick up ☒ Flush Mount ☐ — PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	46.39	CASING VOLUME (gal) =	1.66
DEPTH TO PRODUCT (feet) =	—	CALCULATED PURGE VOL (gal) =	5.05
DEPTH TO WATER (feet) =	42.81	ACTUAL PURGE VOL (gal) =	~1 gal
WATER COLUMN HEIGHT (feet) =	3.58	DID WELL PURGE DRY (Y/N & gal) =	Y ~1 gal

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1614	~1	—	7.56	0.613	2.76	12.71	-131	clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED: 12/5/17 | START (2400hr): 1605 | END (2400hr): 1618

SEDIMENT THICKNESS (start): — | SEDIMENT THICKNESS (end): — | (1original water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | ~~Bailer (PVC)~~ | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft): —

Other equ. (surge block, air lifting ...) | (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED: 12/5/17 | SAMPLE TIME (2400hr): 1620

SAMPLE TYPE: Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN: — | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time: —

COLOR: ~~12/5/17~~ clear | ODOR: Faint ☐ ~~Medium ☐ Strong ☐~~ | NATURE OF ODOR: — | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	~~☒~~	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

Stantec | ESPA-305 | Rev. 2.1 | Jan 2014

WELL I.D. B-4D | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers T. Bonny | Date 12/6/17 | Time 1030 | Temp 39°F

Sample ID B-4D | Weather (sunny) - Part.Cldy - OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 5/5(ESE)

CASING DIAMETER (1 casing vol (gal/linear ft) | 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other | Stick up ☒ Flush Mount ☐ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 83.31 | CASING VOLUME (gal) = 7.44

DEPTH TO PRODUCT (feet) = — | CALCULATED PURGE VOL (gal) = 22.32

DEPTH TO WATER (feet) = 34.55 | ACTUAL PURGE VOL (gal) = ~4 gal

WATER COLUMN HEIGHT (feet) = 43.76 | DID WELL PURGE DRY (Y/N & gal) = Yes, 4 gal

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1102	4	—	9.27	0.405	26.27	10.59	14	clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/6/17 | START (2400hr) 1050 | END (2400hr) 1102

SEDIMENT THICKNESS (start) — | SEDIMENT THICKNESS (end) — | (original water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

(Submersible Pump) | Bailer (Stainless Steel)

Peristaltic Pump | (Dedicated) / Disposable

Pump/Tubing Depth (ft) 261.5' (Other e.g., surge block, air lifting, ...) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/6/17 | SAMPLE TIME (2400hr) 1105

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN ~61.5' | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time —

COLOR clear | ODOR Faint ☐ ~~Medium~~ ☐ ~~Strong~~ ☐ | NATURE OF ODOR — | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

Stantec | ESPA-305 | Rev. 2.1 | Jan 2014 | Site Zanesville Well Field

WELL I.D. B-4I | Client UTC | Project # 182602727

Field Pers P. Sonney | Date 12/6/17 | Time 1000 | Temp 36°F

Sample ID B-4I | Weather sunny - Part Cldy - OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 1 | 5 (S)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other | Stick up ☒ Flush Mount ☐ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	62.93	CASING VOLUME (gal) =	0.94
DEPTH TO PRODUCT (feet) =	—	CALCULATED PURGE VOL (gal) =	2.81
DEPTH TO WATER (feet) =	57.42	ACTUAL PURGE VOL (gal) =	1.25
WATER COLUMN HEIGHT (feet) =	5.51	DID WELL PURGE DRY (Y/N & gal) =	Y ~1.25

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1017	~1.25	--	9.03	0.276	50.00	10.55	34	clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/6/17 | START (2400hr) 1002 | END (2400hr) 1017

SEDIMENT THICKNESS (start) — | SEDIMENT THICKNESS (end) — | (Original water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft) —

Other equ., (surge block, air lifting, ...) | (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/6/17 | SAMPLE TIME (2400hr) 1018

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other —

DEPTH AT WHICH SAMPLE TAKEN — | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time —

COLOR clear | ODOR Faint ☐ Medium ☐ Strong ☐ | NATURE OF ODOR — | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use N
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

Stantec

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WELL I.D. B-45

Client UTC

Project # 182602727

Site Zanesville Well Field

Field Pers P. Sonny	**Date** 12/6/17	**Time** 0930	**Temp** 34°F
Sample ID B-45	**Weather** (sunny) - Part.Cldy - OverCast - fog - Rain - Snow (circle)		**Wind** (vel/dir) 2 | 5 (SSE)

CASING DIAMETER (1 casing vol (gal/linear ft) | 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other — Stick up ☒ Flush Mount ☐ **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	44.81	**CASING VOLUME (gal) =**	1.93
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	3.40
DEPTH TO WATER (feet) =	38.15	**ACTUAL PURGE VOL (gal) =**	~3.5
WATER COLUMN HEIGHT (feet) =	6.66	**DID WELL PURGE DRY (Y/N & gal) =**	Y ~1.5

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
0944	~3.5	—	5.72	0.432	48.22	10.14	166	clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/6/17 START (2400hr) 0935 END (2400hr) 0944

SEDIMENT THICKNESS (start) — **SEDIMENT THICKNESS (end)** — (Original water column)

Bladder Pump; Centrifugal Pump; Submersible Pump; Peristaltic Pump; Bailer (Teflon); Bailer (PVC); Bailer (Stainless Steel); Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) —

Other equ., (surge block, air lifting, ...) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/6/17 SAMPLE TIME (2400hr) 0945

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN — DRAW DOWN LESS THAN ____ % OF INITIAL WL DTW at sample time —

COLOR clear **ODOR** Faint ~~Medium~~ ~~Strong~~ **NATURE OF ODOR** — **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use V.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

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WELL I.D. B-5D

Client UTC

Project # 182602727

Site Zanesville Well Field

Field Pers Paul Sonney	**Date** 12/5/17	**Time** 1445	**Temp** 49°F
Sample ID B-5D	**Weather** sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		**Wind** (vel/dir) 1 / 7 (SE)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other — Stick up ☒ Flush Mount ☐ **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	84.10	**CASING VOLUME (gal) =**	7.54
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	22.63
DEPTH TO WATER (feet) =	39.73	**ACTUAL PURGE VOL (gal) =**	~~22.75~~ 15
WATER COLUMN HEIGHT (feet) =	44.37	**DID WELL PURGE DRY (Y/N & gal) =**	Yes, ~7gal

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1504	~7	—	7.69	0.502	4.40	12.33	-148	clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/4/17 **START (2400hr)** 1455 **END (2400hr)** 1502

SEDIMENT THICKNESS (start) 5 **SEDIMENT THICKNESS (end)** — (original water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | ~~Peristaltic Pump~~

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated / ~~Disposable~~

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) ~62.5'

Other equ. (surge block, air lifting, ...)

(Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/5/17 **SAMPLE TIME (2400hr)** 1525

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN ~62.5' DRAW DOWN LESS THAN ____ % OF INITIAL WL **DTW at sample time** —

COLOR Clear **ODOR** Faint ~~Medium~~ ~~Strong~~ **NATURE OF ODOR** — **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

Stantec | ESPA-305 | Rev. 2.1 | Jan 2014

WELL I.D. B-5I | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers A. Schreiber | Date 12-5-17 | Time 1255 | Temp 54 °F

Sample ID B-5I | Weather sunny - Part Cldy - OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 0mph NE

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..... " (.....)

Well Material: PVC ☐ Iron ☐ SS ☒ Other | Stick up ☒ Flush Mount ☐ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 65.11 | CASING VOLUME (gal) = 446

DEPTH TO PRODUCT (feet) = — | CALCULATED PURGE VOL (gal) = 1340

DEPTH TO WATER (feet) = 38.89 | ACTUAL PURGE VOL (gal) = 5

WATER COLUMN HEIGHT (feet) = 26.22 | DID WELL PURGE DRY (Y/N & gal) = Yes, 5gal

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1350	5	44.10	8.23	0.576	46.8	12.90	171	Cloudy	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-5-17 | START (2400hr) 1315 | END (2400hr) 1330

SEDIMENT THICKNESS (start) — | SEDIMENT THICKNESS (end) — | (Original water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8= 44.3

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft) —

Other equ., (surge block, air lifting, ...) | (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-5-17 | SAMPLE TIME (2400hr) 1350

SAMPLE TYPE: Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other

DEPTH AT WHICH SAMPLE TAKEN 44 | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 44.10

COLOR Cloudy | ODOR: Faint ☐ Medium ☐ Strong ☐ | NATURE OF ODOR NA | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use north
Does DTB sounded correspond with original well completion DTB?	☒	☐	
Well coordinates:			

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

Stantec | ESPA-305 | Rev. 2.1 | Jan 2014

WELL I.D. B-6I | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers A Schreiber | Date 12-6-17 | Time 1020 | Temp 38 °F

Sample ID B-6I | Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 5mph SE

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☐ SS ☒ Other Stick up ☒ Flush Mount ☐ PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = ~~34.26~~ 64.90 | CASING VOLUME (gal) = 5.21

DEPTH TO PRODUCT (feet) = — | CALCULATED PURGE VOL (gal) = 15.63

DEPTH TO WATER (feet) = 34.26 | ACTUAL PURGE VOL (gal) = 7.0

WATER COLUMN HEIGHT (feet) = 30.64 | DID WELL PURGE DRY (Y/N & gal) = Yes 7.0gal

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1315	7.0	40.35	7.11	1.44	56.4	12.46	160	cloudy	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-6-17 | START (2400hr) 1035 | END (2400hr) 1110

SEDIMENT THICKNESS (start) — | SEDIMENT THICKNESS (end) — | (1original water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=40.10

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft) —

Other equ. (purge block, drilling, ...) | (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-6-17 | SAMPLE TIME (2400hr) 1315

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other

DEPTH AT WHICH SAMPLE TAKEN — | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 40.35

COLOR cloudy | ODOR Faint ☐ Medium ☐ Strong ☐ | NATURE OF ODOR n/a | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	6								
FILTERED (Y/N)	No								
QA/QC	DUP-02								

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☑	☐	
Well covers and locks in good condition and secure?	☑	☐	
Is the concrete pad and surface seal in good condition?	☑	☐	
Are soils surrounding the well pad eroded?	☐	☑	
Is there standing water in the flush mount?	☐	☑	
Is the PVC well casing in good condition?	☑	☐	
Is the measuring point on PVC casing well marked?	☐	☑	V2 North
Does DTB sounded correspond with original well completion DTB?	☑	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

Stantec

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WELL I.D. B-6S

Client UTC

Project # 182602727

Site Zanesville Well Field

Field Pers A. Shreiber | **Date** 12-6-17 | **Time** 1130 | **Temp** 41 °F

Sample ID B-6S | **Weather** sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle) | **Wind** (vel/dir) 8mph SW

CASING DIAMETER (1 casing vol (gal/linear ft) | 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☐ SS ☒ Other | Stick up ☑ | Flush Mount ☐ | **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	46.21	**CASING VOLUME (gal) =**	1.19
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	3.57
DEPTH TO WATER (feet) =	36.50	**ACTUAL PURGE VOL (gal) =**	1.75
WATER COLUMN HEIGHT (feet) =	7.01	**DID WELL PURGE DRY (Y/N & gal) =**	Y/S 1.75

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1240	1.75	37.38	3.80	4.76	109.0	1.87	261	Cloudy	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-6-17 | START (2400hr) 1135 | END (2400hr) 1150

SEDIMENT THICKNESS (start) — | **SEDIMENT THICKNESS (end)** — | ((original water column))

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=3.76

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) —

(Other equ., (surge block, air lifting, ...)) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-6-17 | SAMPLE TIME (2400hr) 1240

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other

DEPTH AT WHICH SAMPLE TAKEN — | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 37.38

COLOR Cloudy | **ODOR** Faint ☐ Medium ☐ Strong ☐ | **NATURE OF ODOR** NA | **SHEEN** Y ☐ N ☑

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☑	☐	
Well covers and locks in good condition and secure?	☑	☐	
Is the concrete pad and surface seal in good condition?	☑	☐	
Are soils surrounding the well pad eroded?	☐	☑	
Is there standing water in the flush mount?	☐	☑	
Is the PVC well casing in good condition?	☑	☐	
Is the measuring point on PVC casing well marked?	☐	☑	use north
Does DTB sounded correspond with original well completion DTB?	☑	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

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WELL I.D. B-8D | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers P. Sunney | Date 12/6/17 | Time 1400 | Temp 46°F

Sample ID B-8D | Weather sunny - Parl.Cldy - OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 2 \ 12 (SW)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other | Stick up ☐ Flush Mount ☒ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 62.21 | CASING VOLUME (gal) = 4.50

DEPTH TO PRODUCT (feet) = — | CALCULATED PURGE VOL (gal) = 13.50

DEPTH TO WATER (feet) = 35.74 | ACTUAL PURGE VOL (gal) = ~14

WATER COLUMN HEIGHT (feet) = 26.47 | DID WELL PURGE DRY (Y/N & gal) = —

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1404	~14	—	7.29	0.937	25.21	13.40	76	clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED — | START (2400hr) 1403 | END (2400hr) 1404

SEDIMENT THICKNESS (start) — | SEDIMENT THICKNESS (end) — | (Loriginal water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) —

(Other equ. (surge block air lifting ...)) | (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/6/17 | SAMPLE TIME (2400hr) 1410 1420 PS 12/6/17 PS 12/6/17

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other —

DEPTH AT WHICH SAMPLE TAKEN — | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time —

COLOR Clear | ODOR Faint ☐ Medium ☐ Strong ☐ | NATURE OF ODOR — | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	9								
FILTERED (Y/N)	No								
QA/QC	MS/MSD								

NOTES (Incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

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WELL I.D. B-8I | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers A. Schreiber | Date 12-6-17 | Time 1335 | Temp 46°F

Sample ID B-8I | Weather sunny - (Part.Cldy) - OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 1mph SW

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) (2" (0.17)) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ....." (.....)

Well Material PVC ☐ Iron ☐ SS ☒ Other | Stick up ☐ Flush Mount ☒ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 46.83 | CASING VOLUME (gal) = 1.94

DEPTH TO PRODUCT (feet) = — | CALCULATED PURGE VOL (gal) = 5.82

DEPTH TO WATER (feet) = 35.40 | ACTUAL PURGE VOL (gal) = 2.50

WATER COLUMN HEIGHT (feet) = 11.43 | DID WELL PURGE DRY (Y/N & gal) = Yes, 2.5

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1420	2.5	37.68	6.99	1.45	37.1	12.28	31	Cloudy	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-6-17 | START (2400hr) 1340 | END (2400hr) 1355

SEDIMENT THICKNESS (start) — | SEDIMENT THICKNESS (end) — | ((original water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=37.78

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) — (Other equ. (surge block, air lifting, ...)) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-6-17 | SAMPLE TIME (2400hr) 1420

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ EFF ☐ | Other

DEPTH AT WHICH SAMPLE TAKEN — | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 37.68

COLOR Cloudy | ODOR ~~Faint~~ ☐ Medium ☐ ~~Strong~~ ☐ | NATURE OF ODOR NA | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use north
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

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WELL I.D. B-8s

Client UTC

Project # 182602727

Site Zanesville Well Field

Field Pers: P. Sonny	Date: 12/6/17	Time: 1330	Temp: 46°F
Sample ID: B-8s	Weather: sunny - Part. Cldy - OverCast - fog - Rain - Snow (circle)		Wind (vel/dir): 4 | 11 (SW)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | (2" (0.17)) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..." (.....)

Well Material: PVC ☐ Iron ☒ SS ☐ Other — Stick up ☐ Flush Mount ☒ — PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	44.06	CASING VOLUME (gal) =	1.59
DEPTH TO PRODUCT (feet) =	—	CALCULATED PURGE VOL (gal) =	4.77
DEPTH TO WATER (feet) =	34.71	ACTUAL PURGE VOL (gal) =	~2gal
WATER COLUMN HEIGHT (feet) =	9.35	DID WELL PURGE DRY (Y/N & gal) =	Yes, 2gal

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1350	~2gal	—	7.91	0.603	46.40	13.93	46	Clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED: 12/6/17 START (2400hr): 1385 END (2400hr): 1350

SEDIMENT THICKNESS (start): — SEDIMENT THICKNESS (end): — (Original water column)

Bladder Pump | (Bailer (Teflon)) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft): — (Other equ., (surge block, air lifting, ...)) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED: 12/6/17 SAMPLE TIME (2400hr): 1420

SAMPLE TYPE: Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN: — DRAW DOWN LESS THAN ____ % OF INITIAL WL DTW at sample time: —

COLOR: Clear ODOR: Faint ☒ ~~Medium ☐ Strong ☐~~ NATURE OF ODOR: — SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan): —

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

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WELL I.D. B-45

Client UTC

Project # 182602727

Site Zanesville Well Field

Field Pers P. Sonny	**Date** 12/6/17	**Time** 1230	**Temp** 44°F
Sample ID B-45	**Weather** sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		**Wind** (vel/dir) 4|9(usw)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other — Stick up ☐ Flush Mount ☒ — **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	47.51	**CASING VOLUME (gal) =**	1.91
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	5.73
DEPTH TO WATER (feet) =	36.27	**ACTUAL PURGE VOL (gal) =**	~3gal
WATER COLUMN HEIGHT (feet) =	11.24	**DID WELL PURGE DRY (Y/N & gal) =**	Yes, ~3gal

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1306	–	–	6.42	0.777	42.0	13.92	85	cloudy	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/6/17 START (2400hr) 1245 END (2400hr) 1306

SEDIMENT THICKNESS (start) — **SEDIMENT THICKNESS (end)** — (original water column)

Bladder Pump | (Bailer (Teflon)) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft) —

Other equ. (surge block, air lifting ....) — (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/6/17 SAMPLE TIME (2400hr) 1310

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN — DRAW DOWN LESS THAN ____ % OF INITIAL WL — **DTW at sample time** —

COLOR cloudy **ODOR** Faint ☐ Medium ☐ Strong ☐ **NATURE OF ODOR** — **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

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WELL I.D. B-13D | **Client** UTC | **Project #** 182602727 | **Site** Zanesville Well Field

Field Pers A. Shriber, P. Jones | **Date** 12-5-17 | **Time** 1215 | **Temp** 55 °F

Sample ID B-13D | **Weather** sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle) | **Wind** (vel/dir) 12 mph SW

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☐ SS ☒ Other | Stick up ☐ Flush Mount ☒ | **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	69.44	**CASING VOLUME (gal) =**	5.61
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	16.83
DEPTH TO WATER (feet) =	36.43	**ACTUAL PURGE VOL (gal) =**	17.00
WATER COLUMN HEIGHT (feet) =	33.01	**DID WELL PURGE DRY (Y/N & gal) =**	

PARAMETERS (YORIBA)

TIME (2400hr)	VOL (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1246	17	36.49	7.53	0.591	2.36	13.42	2	clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-5-17 | START (2400hr) 1227 | END (2400hr) 1238

SEDIMENT THICKNESS (start) — | **SEDIMENT THICKNESS (end)** — | (Original water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) 53.0 (Other equ., (surge block, air lifting, ...)) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-5-17 | SAMPLE TIME (2400hr) 1240

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ EFF ☐ | Other —

DEPTH AT WHICH SAMPLE TAKEN 53 ~~53.0~~ XS | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 36.49

COLOR None | **ODOR** Faint ☐ Medium ☐ Strong ☐ | **NATURE OF ODOR** N/A | **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☑	☐	
Well covers and locks in good condition and secure?	☑	☐	
Is the concrete pad and surface seal in good condition?	☑	☐	
Are soils surrounding the well pad eroded?	☐	☑	
Is there standing water in the flush mount?	☐	☑	
Is the PVC well casing in good condition?	☑	☒ XS	
Is the measuring point on PVC casing well marked?	☐	☑	use north
Does DTB sounded correspond with original well completion DTB?	☑	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

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WELL I.D. B-16

Client UTC

Project # 182602727

Site Zanesville Well Field

Field Pers A. Schilder	**Date** 12-6-17	**Time** 0855	**Temp** 33 °F
Sample ID B-16	**Weather** sunny / Part.Cldy - OverCast - fog - Rain - Snow (circle)		**Wind** (vel/dir) 5mph SW

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" ~~(0.17)~~ | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..." (.....)

Well Material PVC ☐ Iron ☐ SS ☒ Other — Stick up ☒ Flush Mount ☐ — **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	52.72	**CASING VOLUME (gal) =**	2.17
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	6.51
DEPTH TO WATER (feet) =	39.93	**ACTUAL PURGE VOL (gal) =**	6.75
WATER COLUMN HEIGHT (feet) =	12.79	**DID WELL PURGE DRY (Y/N & gal) =**	N/A

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
0930	6.25	39.60	3.80	4.76	109.0	1.57	201	cloudy	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-6-17 — START (2400hr) 0905 — END (2400hr) 0925

SEDIMENT THICKNESS (start) — — **SEDIMENT THICKNESS (end)** — ((original water column))

Bladder Pump	Bailer (Teflon)	Calcul of max draw down at time of sampling: ..... X0.8=
Centrifugal Pump	Bailer (PVC)	Disposal method: Purge water disposed of at the onsite remediation system
Submersible Pump	Bailer (Stainless Steel)	
Peristaltic Pump	Dedicated / Disposable	

Pump/Tubing Depth (ft) —

Other equ. (surge block, air lifting, ...) — (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-6-17 — SAMPLE TIME (2400hr) 0930

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN — DRAW DOWN LESS THAN ____ % OF INITIAL WL — DTW at sample time 39.60

COLOR cloudy — **ODOR** ~~Faint ☐ Medium ☐ Strong ☐~~ **NATURE OF ODOR** NA — **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	10									
FILTERED (Y/N)	No									
QA/QC	DUP-03									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use north
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

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WELL I.D. B-18

Client UTC-~~Andrews, IN~~ Zanesville OH

Project # 182602302

Site ~~Andrews, IN~~ Zanesville

Field Pers	A Schreiber, P Janasy	Date 12-5-17	Time 0930	Temp 52 °F
Sample ID	B-18	Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		Wind (vel/dir) 7mph SSE

CASING DIAMETER (1 casing vol (gal/linear ft)) 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..." (.....)

Well Material PVC ☒ Iron ☐ SS ☒ Other Stick up ☐ Flush Mount ☒ PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	55.03	CASING VOLUME (gal) =	3.02
DEPTH TO PRODUCT (feet) =	-----	CALCULATED PURGE VOL (gal) =	9.060
DEPTH TO WATER (feet) =	37.28	ACTUAL PURGE VOL (gal) =	9
WATER COLUMN HEIGHT (feet) =	17.75	PID UPON OPENING WELL (ppm) =	-----

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (L)	DTW (ft)	pH (no units)	CONDUCT. (mS/cm)	TURBID. (VIs/NTU)	DO (mg/L)	TEMP. (°C)	ORP (mV)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1022	9	37.30	7.30	0.625	36.1	2.86	13.11	-95	cloudy	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-5-17 START (2400hr) 0950 END (2400hr) 1020

SEDIMENT THICKNESS (start) ----- SEDIMENT THICKNESS (end) ----- (Original water column)

Bladder Pump | Bailer (Teflon)
Centrifugal Pump | Bailer (PVC)
Submersible Pump | Bailer (Stainless Steel)
Peristalic Pump | Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Monitoring well purge water pumped through onsite groundwater treatment system.

Pump/Tubing Depth (ft) —

(Other equ., (surge block, air lifting....)) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-5-17 SAMPLE TIME (2400hr) 1025

SAMPLE TYPE Groundwater ☐ Surface Water ☐ Treatment INF ☐ EFF ☐ Other -----

DEPTH AT WHICH SAMPLE TAKEN 37.30 DRAW DOWN LESS THAN ____ % OF INITIAL WL DTW at sample time 37.30

COLOR cloudy ODOR ~~Faint~~ ☐ ~~Medium~~ ☐ Strong ☐ NATURE OF ODOR 0 SHEEN Y ☐ N ☒

ANALYSIS	VOC				
PRESERVATIVE	HCL				
CONTAINER TYPE AND CONTENANCE	40ml				
# OF CONT.	3				
FILTERED (Y/N)	N				
QA/QC					

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☐	☐	
Well covers and locks in good condition and secure?	☐	☑	missing 1 bolt
Is the concrete pad and surface seal in good condition?	☑	☐	
Are soils surrounding the well pad eroded?	☐	☑	
Is there standing water in the flush mount?	☐	☑	
Is the PVC well casing in good condition?	☑	☐	
Is the measuring point on PVC casing well marked?	☐	☑	use north
Does DTB sounded correspond with original well completion DTB?	☑	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Stantec	Groundwater Development, Monitoring & Sampling Form		ESPA-305
	WELL I.D. B-23I/D	Client UTC	Rev. 2.1 Jan 2014
		Project # 182602727	Site Zanesville Well Field

Field Pers P. Sanney	Date 12/7/17	Time 1315	Temp 37°F
Sample ID B-23I/D	Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		Wind (vel/dir) 2 5(SW)

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other Stick up ☒ Flush Mount ☐ PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	64.37	CASING VOLUME (gal) =	8.17
DEPTH TO PRODUCT (feet) =	—	CALCULATED PURGE VOL (gal) =	24.50
DEPTH TO WATER (feet) =	16.34	ACTUAL PURGE VOL (gal) =	~25 gal
WATER COLUMN HEIGHT (feet) =	48.03	DID WELL PURGE DRY (Y/N & gal) =	no, 25

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1338	~25	—	7.46	0.434	0.00	10.19	-106	Clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/7/17 START (2400hr) 1325 END (2400hr) 1338

SEDIMENT THICKNESS (start) — SEDIMENT THICKNESS (end) — (original water column)

Bladder Pump
Centrifugal Pump
Submersible Pump
Peristalic Pump

Bailer (Teflon)
Bailer (PVC)
Bailer (Stainless Steel)
Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=
Disposal method Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) ~40'

Other equ., (surge block, air lifting, ...) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/7/17 SAMPLE TIME (2400hr) 1340

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN ~40' DRAW DOWN LESS THAN ____ % OF INITIAL WL DTW at sample time —

COLOR Clear ODOR Faint ☐ Medium ☐ Strong ☐ NATURE OF ODOR — SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use N.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

Stantec | ESPA-305 | Rev. 2.1 | Jan 2014

WELL I.D. C-1D | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers A. Schreiber | Date 12-7-12 | Time 1145 | Temp 37°F

Sample ID C-1D | Weather sunny - Part.Cldy - (OverCast) - fog - Rain - Snow (circle) | Wind (vel/dir) 8mph SE

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) (2" (0.17)) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ..." (.....)

Well Material PVC ☐ Iron ☐ SS ☒ Other | Stick up ☒ Flush Mount ☐ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 80.71 | CASING VOLUME (gal) = 11.04

DEPTH TO PRODUCT (feet) = | CALCULATED PURGE VOL (gal) = 33.12

DEPTH TO WATER (feet) = 15.78 | ACTUAL PURGE VOL (gal) = 33.25

WATER COLUMN HEIGHT (feet) = 64.93 | DID WELL PURGE DRY (Y/N & gal) = NO

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1250	3325	3329	6.26	21.0	5.1	10.20	-21	Clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-7-17 | START (2400hr) 1230 | END (2400hr) 1245

SEDIMENT THICKNESS (start) | SEDIMENT THICKNESS (end) | ((original water column))

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | (Dedicated) / Disposable

Pump/Tubing Depth (ft) 48.25 (Other eqv., (purge block, air lifting,...)) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-7-17 | SAMPLE TIME (2400hr) 1250

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other

DEPTH AT WHICH SAMPLE TAKEN 48.25 | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 33.29

COLOR Clear | ODOR Faint ☐ Medium ☐ Strong ☐ | NATURE OF ODOR NA | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	6									
FILTERED (Y/N)	No									
QA/QC	DUP-01									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use north
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

Stantec

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WELL I.D. C-1I | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers A. Schreiber | Date 12-7-17 | Time 1445 | Temp 37 °F

Sample ID C-1I | Weather sunny (Part.Cldy) OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 8mph SW

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☐ SS ☒ Other | Stick up ☐ Flush Mount ☑ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 50.97 | CASING VOLUME (gal) = 5.90

DEPTH TO PRODUCT (feet) = — | CALCULATED PURGE VOL (gal) = 17.70

DEPTH TO WATER (feet) = 16.29 | ACTUAL PURGE VOL (gal) = 18.0

WATER COLUMN HEIGHT (feet) = 34.68 | DID WELL PURGE DRY (Y/N & gal) = NO

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1520	18.0	16.41	7.55	0.052	1.1	10.99	29	clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-7-17 | START (2400hr) 1500 | END (2400hr) 1515

SEDIMENT THICKNESS (start) — | SEDIMENT THICKNESS (end) — | (1original water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method Purge water disposed of at the onsite remediation system

(Submersible Pump) | Bailer (Stainless Steel)

Peristalic Pump | (Dedicated) Disposable

Pump/Tubing Depth (ft) 33.63 (Other equ. (surge block, air lifting, ...)) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-7-17 | SAMPLE TIME (2400hr) 1520

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other —

DEPTH AT WHICH SAMPLE TAKEN 33.63 DUP | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 16.41

COLOR clear | ODOR Faint ☐ Medium ☐ Strong ☐ | NATURE OF ODOR NA | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use north
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

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WELL I.D. C-1S | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers A. Schreiber | Date 12-7-17 | Time 1355 | Temp 38 °F

Sample ID C-1S | Weather sunny - Part.Cldy (OverCast) - fog - Rain - Snow (circle) | Wind (vel/dir) 0 mph SW

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☐ SS ☐ Other | Stick up ☒ | Flush Mount ☐ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 26.83 | CASING VOLUME (gal) = 1.82

DEPTH TO PRODUCT (feet) = ---- | CALCULATED PURGE VOL (gal) = 5.46

DEPTH TO WATER (feet) = 16.13 | ACTUAL PURGE VOL (gal) = 5.5

WATER COLUMN HEIGHT (feet) = 10.70 | DID WELL PURGE DRY (Y/N & gal) = NO

PARAMETERS (YORIBA)

TIME (2400hr)	VOL (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1430	5.5	16.11	7.09	0.855	0.0	9.79	13	Clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-7-17 | START (2400hr) 1410 | END (2400hr) 1425

SEDIMENT THICKNESS (start) ---- | SEDIMENT THICKNESS (end) ---- | (Original water column)

Bladder Pump | Centrifugal Pump | (Submersible Pump) | Peristaltic Pump

Bailer (Teflon) | (Bailer (PVC)) | Bailer (Stainless Steel) | (Dedicated) / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) 21.48 (Other equ., purge block, air lifting, ...) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-7-17 | SAMPLE TIME (2400hr) 1430

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other

DEPTH AT WHICH SAMPLE TAKEN 21.48 | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 16.11

COLOR Clear | ODOR Faint ☐ Medium ☐ Strong ☐ | NATURE OF ODOR NA | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	----								

NOTES (Incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	1/2 notch
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

Stantec

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WELL I.D. C-2D

Client UTC

Project # 182602727

Site Zanesville Well Field

Field Pers: P. Sonney	Date: 12/6/17	Time: 1530	Temp: 46°F
Sample ID: C-2D	Weather: sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		Wind (vel/dir): 3 / 14(SW)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material: PVC ☐ Iron ☒ SS ☐ Other — Stick up ☒ Flush Mount ☐ — PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	67.49	CASING VOLUME (gal) =	8.66
DEPTH TO PRODUCT (feet) =	—	CALCULATED PURGE VOL (gal) =	26.0
DEPTH TO WATER (feet) =	16.52	ACTUAL PURGE VOL (gal) =	~27
WATER COLUMN HEIGHT (feet) =	50.97	DID WELL PURGE DRY (Y/N & gal) =	No

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1552	~27	—	7.56	0.485	5.45	13.67	-114	Clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED: 12/6/17 START (2400hr): 1540 END (2400hr): 1552

SEDIMENT THICKNESS (start): — SEDIMENT THICKNESS (end): — (if original water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | ~~Bailer (Stainless Steel)~~

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft): ~42'

Other equ. (surge block, air lifting, ...) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED: 12/6/17 SAMPLE TIME (2400hr): 1535

SAMPLE TYPE: Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN: ~42' DRAW DOWN LESS THAN ____ % OF INITIAL WL DTW at sample time: —

COLOR: Clear ODOR: Faint ☐ Medium ☐ Strong ☐ NATURE OF ODOR: — SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (Incl. deviation from plan): —

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

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WELL I.D. C-2I | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers A. Schmiper | Date 12-6-17 | Time 1535 | Temp 45 °F

Sample ID C-2I | Weather sunny (Part.Cldy) OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 10mph (W)

CASING DIAMETER (1 casing vol (gal/linear ft) | 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..... (.....)

Well Material PVC ☐ Iron ☐ SS ☒ Other | Stick up ☒ Flush Mount ☐ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 52.80 | CASING VOLUME (gal) = 6.14

DEPTH TO PRODUCT (feet) = — | CALCULATED PURGE VOL (gal) = 18.42

DEPTH TO WATER (feet) = 16.66 | ACTUAL PURGE VOL (gal) = 19.00

WATER COLUMN HEIGHT (feet) = 36.14 | DID WELL PURGE DRY (Y/N & gal) = NO

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1600	19.0	16.75	7.59	0.721	6.4	12.29	-6	Clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-6-17 | START (2400hr) 1540 | END (2400hr) 1555

SEDIMENT THICKNESS (start) — | SEDIMENT THICKNESS (end) — | (1original water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft) 34.73 (Other equ., (surge block, air lifting, ...)) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-6-17 | SAMPLE TIME (2400hr) 1600

SAMPLE TYPE Groundwater ☐ Surface Water ☐ Treatment INF ☐ EFF ☐ Other

DEPTH AT WHICH SAMPLE TAKEN 34.73 | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 16.75

COLOR Clear | ODOR Faint ☐ Medium ☐ Strong ☐ | NATURE OF ODOR NA | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use north
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Stantec	Groundwater Development, Monitoring & Sampling Form		ESPA-305
	WELL I.D. B-C-2S	Client UTC	Rev. 2.1 Jan 2014
		Project # 182602727	Site Zanesville Well Field

Field Pers P. Sumey	Date 12/7/17	Time 1400	Temp 37°F
Sample ID C-2S	Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		Wind (vel/dir) 4 | 4 (SSW)

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other Stick up ☒ Flush Mount ☐ PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	27.52	CASING VOLUME (gal) =	1.82
DEPTH TO PRODUCT (feet) =	—	CALCULATED PURGE VOL (gal) =	5.45
DEPTH TO WATER (feet) =	16.83	ACTUAL PURGE VOL (gal) =	~5.5
WATER COLUMN HEIGHT (feet) =	10.69	DID WELL PURGE DRY (Y/N & gal) =	

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1424	~5.5	—	7.25	0.508	2.81	12.81	-3	clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/7/17 START (2400hr) 1410 END (2400hr) 1424

SEDIMENT THICKNESS (start) — SEDIMENT THICKNESS (end) — (original water column)

Bladder Pump — Bailer (Teflon)
Centrifugal Pump — Bailer (PVC)
Submersible Pump — Bailer (Stainless Steel)
Peristalic Pump — Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=
Disposal method Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) —

Other equ. (surge block, air lifting, ...) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/7/17 SAMPLE TIME (2400hr) 1425

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN — DRAW DOWN LESS THAN ____ % OF INITIAL WL DTW at sample time —

COLOR Clear ODOR Faint ☐ Medium ☐ Strong ☐ NATURE OF ODOR — SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use N.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

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WELL I.D. C-3D | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers C-3D A.Schreiber | Date 12-6-17 | Time 1455 | Temp 46 °F

Sample ID C-3D | Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 4mphW

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....."(.....)

Well Material PVC ☐ Iron ☐ SS ☒ Other | Stick up ☒ Flush Mount ☐ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 59.66 | CASING VOLUME (gal) = 7.16

DEPTH TO PRODUCT (feet) = | CALCULATED PURGE VOL (gal) = 21.48

DEPTH TO WATER (feet) = 17.54 | ACTUAL PURGE VOL (gal) = 22.0

WATER COLUMN HEIGHT (feet) = 42.12 | DID WELL PURGE DRY (Y/N & gal) = NO

PARAMETERS (YORIBA)

TIME (2400hr)	~~VOL DTW~~ (gal)	~~DTW~~ VOL (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
~~1535~~ 1515	18.96	22.0	7.80	0.1084	7.2	11.98	-84	clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-6-17 | START (2400hr) 1505 | END (2400hr) 1520

SEDIMENT THICKNESS (start) | SEDIMENT THICKNESS (end) | (1original water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated | Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) 38.6 (Other equ., purge block, air lifting, ...) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-6-17 | SAMPLE TIME (2400hr) 1525

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other

DEPTH AT WHICH SAMPLE TAKEN 38.6 | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 18.96

COLOR clear | ODOR Faint ☐ Medium ☐ Strong ☐ | NATURE OF ODOR NA | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (Incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use North
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Stantec	Groundwater Development, Monitoring & Sampling Form		ESPA-305
	WELL I.D. C-3I	Client UTC	Rev. 2.1 Jan 2014
		Project # 182602727	Site Zanesville Well Field

Field Pers P. Sonney	Date 12/6/17	Time 1455	Temp 46°F
Sample ID C-3I ~~PPS / 3 TPS~~	Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		Wind (vel/dir) 2 14(SSW)

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other Stick up ☒ Flush Mount ☐ PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	52.61	CASING VOLUME (gal) =	5.82
DEPTH TO PRODUCT (feet) =	—	CALCULATED PURGE VOL (gal) =	17.48
DEPTH TO WATER (feet) =	18.38	ACTUAL PURGE VOL (gal) =	~18
WATER COLUMN HEIGHT (feet) =	34.23	DID WELL PURGE DRY (Y/N & gal) =	no

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1511	~18	–	7.58	0.449	48.21	13.62	82	clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/6/17 START (2400hr) 1505 END (2400hr) 1511

SEDIMENT THICKNESS (start) _____ SEDIMENT THICKNESS (end) _____ (↓original water column)

Bladder Pump
Centrifugal Pump
Submersible Pump
Peristaltic Pump

Bailer (Teflon)
Bailer (PVC)
Bailer (Stainless Steel)
Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=
Disposal method Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) ~35'

Other equ. (surge block, air lifting, ...) (identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/6/17 SAMPLE TIME (2400hr) 1513

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN ~35' DRAW DOWN LESS THAN ____ % OF INITIAL WL DTW at sample time —

COLOR _____ ODOR Faint ☐ Medium ☐ Strong ☐ NATURE OF ODOR — SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (Incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use North
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

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WELL I.D. C-35

Client UTC

Project # 182602727

Site Zanesville Well Field

Field Pers: P. Sunny	Date: 12/7/17	Time: 1015	Temp: 36°F
Sample ID: ~~C-35~~ C-35	Weather: sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		Wind (vel/dir): 2 6(SW)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material: PVC ☐ Iron ☒ SS ☐ Other — Stick up ☒ Flush Mount ☐ — PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	28.43	CASING VOLUME (gal) =	1.76
DEPTH TO PRODUCT (feet) =	—	CALCULATED PURGE VOL (gal) =	5.28
DEPTH TO WATER (feet) =	18.04	ACTUAL PURGE VOL (gal) =	~25.5
WATER COLUMN HEIGHT (feet) =	10.35	DID WELL PURGE DRY (Y/N & gal) =	no

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1043	5.5	—	6.60	0.548	2.35	15.36	109	clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED: 12/7/17 START (2400hr): 1020 END (2400hr): 1043

SEDIMENT THICKNESS (start): — SEDIMENT THICKNESS (end): — (Loriginal water column)

Bladder Pump; Centrifugal Pump; Submersible Pump; Peristaltic Pump; ~~Bailer (Teflon)~~; ~~Bailer (PVC)~~; Bailer (Stainless Steel); Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft): —

Other equ., (surge block, air lifting, ...) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED: 12/7/17 SAMPLE TIME (2400hr): 1045

SAMPLE TYPE: Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN: — DRAW DOWN LESS THAN ____ % OF INITIAL WL DTW at sample time: —

COLOR: Clear ODOR: Faint ☐ ~~Medium ☐~~ ~~Strong ☐~~ NATURE OF ODOR: — SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan): —

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use N.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

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WELL I.D. C-6 | **Client** UTC | **Project #** 182602727 | **Site** Zanesville Well Field

Field Pers P. Scanlon	**Date** 12/7/17	**Time** 0920	**Temp** 35° F
Sample ID C-6	**Weather** sunny - Part Cldy - OverCast - fog - Rain - Snow (circle)		**Wind** (vel/dir) 2 | S (SW)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other | Stick up ☒ Flush Mount ☐ | **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	58.89	**CASING VOLUME (gal) =**	7.09
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	21.27
DEPTH TO WATER (feet) =	17.19	**ACTUAL PURGE VOL (gal) =**	~22 gal
WATER COLUMN HEIGHT (feet) =	41.70	**DID WELL PURGE DRY (Y/N & gal) =**	No

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
0955	~22	—	6.46	0.448	0.70	12.84	72	Clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/7/17 | START (2400hr) 0943 | END (2400hr) 0955

SEDIMENT THICKNESS (start) — | **SEDIMENT THICKNESS (end)** — | (Original water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump | Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) ~38' (Other equ., (surge block, air lifting, ...)) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/7/17 | SAMPLE TIME (2400hr) 0958

SAMPLE TYPE Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN ~38' | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time —

COLOR Clear | **ODOR** Faint ☐ Medium ☐ Strong ☐ | **NATURE OF ODOR** — | **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

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WELL I.D. C-8 | **Client** UTC | **Project #** 182602727 | **Site** Zanesville Well Field

Field Pers P. Sonney	**Date** 12/7/17	**Time** 1140	**Temp** 37°F
Sample ID C-8	**Weather** sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		**Wind** (vel/dir) 7/S(SE)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other | Stick up ☐ Flush Mount ☐ | **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	46.32	**CASING VOLUME (gal) =**	5.75
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	17.25
DEPTH TO WATER (feet) =	12.50	**ACTUAL PURGE VOL (gal) =**	~18
WATER COLUMN HEIGHT (feet) =	33.82	**DID WELL PURGE DRY (Y/N & gal) =**	N. 18gal

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1201	~18	--	6.83	0.900	0.00	11.16	-102	clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/7/17 | START (2400hr) 1148 | END (2400hr) 1201

SEDIMENT THICKNESS (start) — | **SEDIMENT THICKNESS (end)** — | (Loriginal water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft) 229.5'

Other equ. (surge block, air lifting, ...) | (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/7/17 | SAMPLE TIME (2400hr) 1205

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other —

DEPTH AT WHICH SAMPLE TAKEN 229.5' | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time —

COLOR Clear | **ODOR** Faint ☐ Medium ☐ Strong ☐ | **NATURE OF ODOR** — | **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use North
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

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WELL I.D. C-9 | **Client** UTC | **Project #** 182602727 | **Site** Zanesville Well Field

Field Pers P.S.	**Date** 12/7/17	**Time** 1230	**Temp** 36°F
Sample ID C-9	**Weather** sunny - Part Cldy - OverCast - fog - Rain - snow (circle)		**Wind** (vel/dir) 4 S(SSW)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ....." (.....)

Well Material PVC ☐ Iron ☒ SS ☐ Other | Stick up ☒ Flush Mount ☐ | **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	53.13	**CASING VOLUME (gal) =**	6.51
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	19.53
DEPTH TO WATER (feet) =	14.84	**ACTUAL PURGE VOL (gal) =**	20 gal
WATER COLUMN HEIGHT (feet) =	38.29	**DID WELL PURGE DRY (Y/N & gal) =**	

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1246	20	-	6.86	0.789	053	11.13	-74	Clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12/7/17 | START (2400hr) 1235 | END (2400hr) 1246

SEDIMENT THICKNESS (start) — | **SEDIMENT THICKNESS (end)** — (1original water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) ~34'

Other equ. (surge block, air lifting, ...)

(Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12/7/17 | SAMPLE TIME (2400hr) 1250

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other —

DEPTH AT WHICH SAMPLE TAKEN ~34' | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time —

COLOR Clear | **ODOR** Faint ☐ ~~Medium ☐~~ ~~Strong ☐~~ | **NATURE OF ODOR** — | **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3									
FILTERED (Y/N)	No									
QA/QC	—									

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N.
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Groundwater Development, Monitoring & Sampling Form

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WELL I.D. C-10D | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers A. Schreiber | Date 12-7-17 | Time 1050 | Temp 37°F

Sample ID C-10D | Weather sunny - Part.Cldy - (OverCast) - fog - Rain - Snow (circle) | Wind (vel/dir) 1 mph SW

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) (2" (0.17)) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ....." (.....)

Well Material: PVC [X] Iron [ ] SS [ ] Other | Stick up [X] Flush Mount [ ] | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 68.27 | CASING VOLUME (gal) = 8.63

DEPTH TO PRODUCT (feet) = — | CALCULATED PURGE VOL (gal) = 25.89

DEPTH TO WATER (feet) = 17.49 | ACTUAL PURGE VOL (gal) = 26.0

WATER COLUMN HEIGHT (feet) = 50.78 | DID WELL PURGE DRY (Y/N & gal) = NO

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1125	26.0	17.40	6.74	0.636	0.0	9.81	-116	Clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-7-17 | START (2400hr) 1100 | END (2400hr) 1120

SEDIMENT THICKNESS (start) — | SEDIMENT THICKNESS (end) — | (Original water column)

Bladder Pump | Centrifugal Pump | (Submersible Pump) | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | (Dedicated) Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft): 42.88 (Other equ., (surge block, air lifting, ...))

(Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-7-17 | SAMPLE TIME (2400hr) 1125

SAMPLE TYPE: Groundwater [X] | Surface Water [ ] | Treatment INF [ ] | EFF [ ] | Other

DEPTH AT WHICH SAMPLE TAKEN 42.88 | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 17.46

COLOR Clear | ODOR Faint [ ] Medium [ ] Strong [ ] | NATURE OF ODOR NA | SHEEN Y [ ] N [X]

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	[X]	[ ]	
Well covers and locks in good condition and secure?	[X]	[ ]	
Is the concrete pad and surface seal in good condition?	[X]	[ ]	
Are soils surrounding the well pad eroded?	[ ]	[X]	
Is there standing water in the flush mount?	[ ]	[X]	
Is the PVC well casing in good condition?	[X]	[ ]	
Is the measuring point on PVC casing well marked?	[ ]	[X]	use north
Does DTB sounded correspond with original well completion DTB?	[X]	[ ]	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

Stantec | ESPA-305 | Rev. 2.1 | Jan 2014

WELL I.D. C-11I | **Client** UTC | **Project #** 182602727 | **Site** Zanesville Well Field

Field Pers A. Schreiber	**Date** 12-7-17	**Time** 0950	**Temp** 35°F
Sample ID C-11I	**Weather** sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		**Wind** (vel/dir) 5mph SW

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..." (.....)

Well Material PVC ☒ Iron ☐ SS ☐ Other | Stick up ☒ Flush Mount ☐ | **PLEASE CIRCLE WELL DIAMETER**

DEPTH TO BOTTOM (feet) =	44.58	**CASING VOLUME (gal) =**	4.59
DEPTH TO PRODUCT (feet) =	—	**CALCULATED PURGE VOL (gal) =**	13.77
DEPTH TO WATER (feet) =	17.57	**ACTUAL PURGE VOL (gal) =**	14.0
WATER COLUMN HEIGHT (feet) =	27.01	**DID WELL PURGE DRY (Y/N & gal) =**	NO

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1025	14.0	17.81	6.43	0.607	0.0	15.72	98	Clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-7-17 | START (2400hr) 1004 | END (2400hr) 1020

SEDIMENT THICKNESS (start) — | **SEDIMENT THICKNESS (end)** — ([1original water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) 31.08 (Other e.g., surge block, air lifting....) (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-7-17 | SAMPLE TIME (2400hr) 1025

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other

DEPTH AT WHICH SAMPLE TAKEN 31.08 | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 17.81

COLOR Clear | **ODOR** Faint ☐ Medium ☐ Strong ☐ | **NATURE OF ODOR** NA | **SHEEN** Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	9									
FILTERED (Y/N)	No									
QA/QC	MS/MSD									

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use north
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

Stantec | ESPA-305 | Rev. 2.1 | Jan 2014

WELL I.D. SM-1 | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers A Schreiber | Date 12-5-17 | Time 1040 | Temp 45 °F

Sample ID | Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle) | Wind (vel/dir) 7mph SW

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..." (.....)

Well Material (PVC) Iron ☐ SS ☒ Other | Stick up ☐ | Flush Mount ☒ | PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 47.30

DEPTH TO PRODUCT (feet) =

DEPTH TO WATER (feet) = 36.78

WATER COLUMN HEIGHT (feet) = 10.52

CASING VOLUME (gal) = 1.80

CALCULATED PURGE VOL (gal) = 5.40

ACTUAL PURGE VOL (gal) = 5.50

DID WELL PURGE DRY (Y/N & gal) = NO

PARAMETERS (YORIBA)

TIME (2400hr)	VOL. (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1720	5.5	36.97	8.16	0.828	6.80	11.91	148	Clear	

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED 12-5-17 | START (2400hr) 1655 | END (2400hr) 1715

SEDIMENT THICKNESS (start) | SEDIMENT THICKNESS (end) | (1original water column)

Bladder Pump | Centrifugal Pump | Submersible Pump | Peristaltic Pump

Bailer (Teflon) | Bailer (PVC) | Bailer (Stainless Steel) | Dedicated / Disposable

Calcul of max draw down at time of sampling: ..... X0.8=

Disposal method: Purge water disposed of at the onsite remediation system

Pump/Tubing Depth (ft) —

Other equ., (surge block, air lifting, ...) | (Identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED 12-5-17 | SAMPLE TIME (2400hr) 1720

SAMPLE TYPE Groundwater ☒ | Surface Water ☐ | Treatment INF ☐ | EFF ☐ | Other

DEPTH AT WHICH SAMPLE TAKEN — | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time 36.97

COLOR Clear | ODOR ~~Faint ☐ Medium ☐ Strong ☐~~ | NATURE OF ODOR N/A | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2								
PRESERVATIVE	HCl								
CONTAINER TYPE AND CONTENANCE	40 mL VOAs								
# OF CONT.	3								
FILTERED (Y/N)	No								
QA/QC	—								

NOTES (incl. deviation from plan)

WELL INTEGRITY

LOCK KEY #

	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	use north
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair:

Groundwater Development, Monitoring & Sampling Form

Stantec | ESPA-305 | Rev. 2.1 | Jan 2014

WELL I.D. SM-2 | Client UTC | Project # 182602727 | Site Zanesville Well Field

Field Pers: P. Sonney	Date: 12/5/17	Time: 1645	Temp: 45°F
Sample ID: SM-2	Weather: sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)		Wind (vel/dir): 7 / 7(NW)

CASING DIAMETER (1 casing vol (gal/linear ft): 1" (0.04) | 2" (0.17) | 3" (0.37) | 4" (0.65) | 5" (1.02) | 6" (1.47) | 6.5" (1.7) | 8" (2.61) | 10" (4.10) | ..." (.....)

Well Material: PVC ☐ Iron ☒ SS ☐ Other — Stick up ☐ Flush Mount ☒ — PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) =	45.61	CASING VOLUME (gal) =	1.55
DEPTH TO PRODUCT (feet) =	—	CALCULATED PURGE VOL (gal) =	4.65
DEPTH TO WATER (feet) =	36.49	ACTUAL PURGE VOL (gal) =	~4.75
WATER COLUMN HEIGHT (feet) =	9.12	DID WELL PURGE DRY (Y/N & gal) =	

PARAMETERS (YORIBA)

TIME (2400hr)	VOL (gal)	DTW (ft)	pH (no units)	CONDUCT. (mmhos/cm)	DO (%)	TEMP. (°C)	ORP (mg/L)	COLOR (visual)	COMMENTS / OTHERS (Fe, TDS, ...)
1704	~4.75	—	7.49	0.645	8.34	13.64	5	clear	—

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

Development / Purging

DATE PURGED: 12/5/17 | START (2400hr): 1655 | END (2400hr): 1704

SEDIMENT THICKNESS (start): — | SEDIMENT THICKNESS (end): — | ((original water column)

Bladder Pump | Bailer (Teflon) | Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump | Bailer (PVC) | Disposal method: Purge water disposed of at the onsite remediation system

Submersible Pump | Bailer (Stainless Steel)

Peristaltic Pump | Dedicated / Disposable

Pump/Tubing Depth (ft): —

Other equ., (surge block, air lifting, ...) | (identify analytes sampled with which equipment)

SAMPLE INFORMATION AT TIME OF SAMPLING

DATE SAMPLED: 12/5/17 | SAMPLE TIME (2400hr): 1700

SAMPLE TYPE: Groundwater ☒ Surface Water ☐ Treatment INF ☐ EFF ☐ Other —

DEPTH AT WHICH SAMPLE TAKEN: — | DRAW DOWN LESS THAN ____ % OF INITIAL WL | DTW at sample time: —

COLOR: Clear | ODOR: Faint ☐ ~~Medium ☐~~ Strong ☐ | NATURE OF ODOR: — | SHEEN Y ☐ N ☒

ANALYSIS	VOCs 624.2									
PRESERVATIVE	HCl									
CONTAINER TYPE AND CONTENANCE	40 mL VOAs									
# OF CONT.	3(3)									
FILTERED (Y/N)	No									
QA/QC	Dup-04									

NOTES (incl. deviation from plan) —

WELL INTEGRITY

LOCK KEY #	Yes	No	Comments
Well identification number clearly marked?	☒	☐	
Well covers and locks in good condition and secure?	☒	☐	
Is the concrete pad and surface seal in good condition?	☒	☐	
Are soils surrounding the well pad eroded?	☐	☒	
Is there standing water in the flush mount?	☐	☒	
Is the PVC well casing in good condition?	☒	☐	
Is the measuring point on PVC casing well marked?	☐	☒	Use N
Does DTB sounded correspond with original well completion DTB?	☒	☐	

Well coordinates: —

Others: instructions to find well, missing bolts (size), need retaping, other repair: —

Appendix E VALIDATED LABORATORY ANALYTICAL RESULTS FOURTH QUARTER 2017

Stantec Analytical Validation Checklist — Report No. 050718-EC-03

Project Name: UTC Zanesville	Project Number: 182603199
Stantec Validator: Elizabeth A Crowley	Laboratory: SGS – Dayton, NJ
Date Validated: 05/06/18	Laboratory Project Number: JC56966
Sample Start-End Date: 12/05-12/07/17	Laboratory Report Date: 12/28/17

Parameters Validated: Volatile Organic Compounds (VOC) by EPA 624

Samples Validated - Associated Chain(s) of Custody – 39 groundwater samples and 1 Trip Blank - no CofC numbers

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

U The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

B The analyte was detected in the method, field and/or trip blank.

	Yes	No
1. Were all the analyses requested for the samples submitted with each CofC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?		X
Comments:		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		
7. Were detections found in laboratory blank samples?		X
Comments:		

8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	Yes	No X
Comments:		
9. Were instrument calibrations within method criteria?	Yes X	No
Comments:		
10. Were surrogate recoveries within control limits?	Yes X	No
Comments:		
11. Were laboratory control sample recoveries within control limits?	Yes X	No
Comments:		
12. Were matrix spike recoveries within control limits?	Yes X	No
Comments:		
13. Were RPDs within control limits?	Yes X	No
Comments:		
14. Were dilutions required on any samples?	Yes X	No
Comments: Samples analyzed at multiple dilutions to achieve the lowest possible reporting limits. No qualifying action required.		
15. Were Tentatively Identified Compounds (TIC) present?	Yes	No X
Comments:		
16. Were organic system performance criteria met?	Yes X	No
Comments:		
17. Were GC/MS internal standards within method criteria?	Yes X	No
Comments:		
18. Were inorganic system performance criteria met? NA	Yes	No
Comments: No inorganic analyses requested.		
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	Yes X	No
Duplicate Sample No. Primary Sample No. DUP-01 B-1D (Pair 1) DUP-02 B-6I (Pair 2)		

DUP-03	B-16	(Pair 3)
DUP-04	SM-2	(Pair 4)

Comments: Pair 1 – All RPDs within limits.

Pair 2 – All RPDs within limits.

Pair 3 – All RPDs within limits except trans-1,2-Dichloroethene. Associated result flagged "J" if positive or "UJ" if non-detect for duplicate pair only.

Pair 4 – All RPDs within limits.

Reason Code – FDUP

20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes	No	Initials
	X		EAC

Comments:

21. Other:	Yes	No
A). Validation Level	X	
B). Analyte Identification		

Comments: A). All data was validated at Level III.

B). The chromatogram for cis-1,2-Dichloroethene is questionable and/or ion absorbance ratios out of limits for C-3I and DUP-04.

The chromatogram for Trichloroethene is questionable and/or ion ratio out of limits for B-6S, DUP-02 and W-6.

Associated results flagged "J".

Reason Code – ID

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Stantec Analytical Validation Checklist — Report No. 050718-EC-04

Project Name: UTC Zanesville	Project Number: 182603199
Stantec Validator: Elizabeth A Crowley	Laboratory: SGS – Dayton, NJ
Date Validated: 05/07/18	Laboratory Project Number: JC58534
Sample Start-End Date: 01/10/18	Laboratory Report Date: 01/22/18

Parameters Validated: Volatile Organic Compounds (VOC) by EPA 624

Samples Validated - Associated Chain(s) of Custody – 1 groundwater sample - no CofC numbers

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

U The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

B The analyte was detected in the method, field and/or trip blank.

	Yes	No
1. Were all the analyses requested for the samples submitted with each CofC completed by the lab?	X	
Comments:		
2. Did the laboratory identify any non-conformances related to the analytical result?		X
Comments:		
3. Were sample Chain-of-Custody forms complete?	X	
Comments:		
4. Were samples received in good condition and at the appropriate temperature?	X	
Comments		
5. Were sample holding times met?	X	
Comments:		
6. Were correct concentration units reported?	X	
Comments:		
7. Were detections found in laboratory blank samples?		X
Comments:		

8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples? NA	Yes	No
Comments: No blank sample submitted. No qualifying action required.		
9. Were instrument calibrations within method criteria?	Yes X	No
Comments:		
10. Were surrogate recoveries within control limits?	Yes X	No
Comments:		
11. Were laboratory control sample recoveries within control limits?	Yes X	No
Comments:		
12. Were matrix spike recoveries within control limits?	Yes X	No
Comments:		
13. Were RPDs within control limits?	Yes X	No
Comments:		
14. Were dilutions required on any samples?	Yes	No X
Comments:		
15. Were Tentatively Identified Compounds (TIC) present?	Yes	No X
Comments:		
16. Were organic system performance criteria met?	Yes X	No
Comments:		
17. Were GC/MS internal standards within method criteria?	Yes X	No
Comments:		
18. Were inorganic system performance criteria met? NA	Yes	No
Comments: No inorganic analyses requested.		
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results. Duplicate Sample No. Primary Sample No.	Yes	No X
Comments:		

20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other: A). Validation Level	Yes X	No	
Comments: A). All data was validated at Level III.			

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			

Appendix F FOURTH QUARTER 2017 LABORATORY ANALYTICAL

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

United Technologies Corporation

SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

182602727

SGS Job Number: JC56966

Sampling Dates: 12/05/17 - 12/07/17

Report to:

Stantec Consulting Corporation
8770 Guion Road Suite B
Indianapolis, IN 46268
susan.hall@stantec.com

ATTN: Susan Hall

Total number of pages in report: 545

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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SGS North America Inc.

Sample Summary

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, [redacted] Zanesville, OH
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC56966-1	12/05/17	15:40	PJ	12/08/17	AQ	Ground Water	B-2I
JC56966-2	12/06/17	11:05	PJ	12/08/17	AQ	Ground Water	B-4D
JC56966-3	12/06/17	10:18	PJ	12/08/17	AQ	Ground Water	B-4I
JC56966-4	12/06/17	09:45	PJ	12/08/17	AQ	Ground Water	B-4S
JC56966-5	12/06/17	15:05	PJ	12/08/17	AQ	Ground Water	B-5D
JC56966-6	12/06/17	13:50	PJ	12/08/17	AQ	Ground Water	B-5I
JC56966-7	12/06/17	13:15	PJ	12/08/17	AQ	Ground Water	B-6I
JC56966-8	12/06/17	12:40	PJ	12/08/17	AQ	Ground Water	B-6S
JC56966-9	12/06/17	14:10	PJ	12/08/17	AQ	Ground Water	B-8D
JC56966-9D	12/06/17	14:10	PJ	12/08/17	AQ	Water Dup/MSD	B-8D
JC56966-9S	12/06/17	14:10	PJ	12/08/17	AQ	Water Matrix Spike	B-8D
JC56966-10	12/06/17	14:20	PJ	12/08/17	AQ	Ground Water	B-8I
JC56966-11	12/06/17	00:00	PJ	12/08/17	AQ	Ground Water	DUP-02

Sample Summary
(continued)

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, [redacted] Zanesville, OH
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC56966-12	12/06/17	14:20	PJ	12/08/17	AQ	Ground Water	B-8S
JC56966-13	12/06/17	13:10	PJ	12/08/17	AQ	Ground Water	B-9S
JC56966-14	12/05/17	12:40	PJ	12/08/17	AQ	Ground Water	B-13D
JC56966-15	12/06/17	09:30	PJ	12/08/17	AQ	Ground Water	B-16
JC56966-16	12/05/17	10:25	PJ	12/08/17	AQ	Ground Water	B-18
JC56966-17	12/07/17	13:40	PJ	12/08/17	AQ	Ground Water	B-23I/D
JC56966-18	12/07/17	12:50	PJ	12/08/17	AQ	Ground Water	C-1D
JC56966-19	12/07/17	15:20	PJ	12/08/17	AQ	Ground Water	C-1I
JC56966-20	12/07/17	14:30	PJ	12/08/17	AQ	Ground Water	C-1S
JC56966-21	12/06/17	15:55	PJ	12/08/17	AQ	Ground Water	C-2D
JC56966-22	12/06/17	00:00	PJ	12/08/17	AQ	Ground Water	DUP-03
JC56966-23	12/06/17	16:00	PJ	12/08/17	AQ	Ground Water	C-2I
JC56966-24	12/07/17	14:25	PJ	12/08/17	AQ	Ground Water	C-2S

Sample Summary
(continued)

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC56966-25	12/06/17	15:25	PJ	12/08/17	AQ	Ground Water	C-3D
JC56966-26	12/06/17	15:13	PJ	12/08/17	AQ	Ground Water	C-3I
JC56966-27	12/07/17	10:45	PJ	12/08/17	AQ	Ground Water	C-3S
JC56966-28	12/06/17	09:58	PJ	12/08/17	AQ	Ground Water	C-6
JC56966-29	12/07/17	12:05	PJ	12/08/17	AQ	Ground Water	C-8
JC56966-30	12/07/17	12:50	PJ	12/08/17	AQ	Ground Water	C-9
JC56966-31	12/07/17	10:25	PJ	12/08/17	AQ	Ground Water	C-11I
JC56966-31D	12/07/17	10:25	PJ	12/08/17	AQ	Water Dup/MSD	C-11I
JC56966-31S	12/07/17	10:25	PJ	12/08/17	AQ	Water Matrix Spike	C-11I
JC56966-32	12/07/17	11:25	PJ	12/08/17	AQ	Ground Water	C-10D
JC56966-33	12/07/17	00:00	PJ	12/08/17	AQ	Ground Water	DUP-01
JC56966-34	12/05/17	17:20	PJ	12/08/17	AQ	Ground Water	SM-1
JC56966-35	12/05/17	17:10	PJ	12/08/17	AQ	Ground Water	SM-2

Sample Summary
(continued)

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, [redacted] Zanesville, OH
Project No: 182602727

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC56966-36	12/06/17	11:25	PJ	12/08/17	AQ	Ground Water	W-6
JC56966-37	12/06/17	10:55	PJ	12/08/17	AQ	Ground Water	W-7
JC56966-38	12/06/17	11:15	PJ	12/08/17	AQ	Ground Water	W-12
JC56966-39	12/05/17	00:00	PJ	12/08/17	AQ	Ground Water	DUP-04
JC56966-40	12/07/17	15:20	PJ	12/08/17	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	United Technologies Corporation	**Job No**	JC56966
Site:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH	**Report Date**	12/28/2017 6:42:23 P

On 12/08/2017, 39 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 4.3 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC56966 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method EPA 624

Matrix: AQ **Batch ID:** VN11234

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC56966-9MS, JC56966-9MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** VN11237

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC57306-7MS, JC57306-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Trichloroethene, 1,2-Dichloroethene (total), cis-1,2-Dichloroethene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- JC57306-7MSD: (pH=6) Sample is not acid preserved per method/client criteria. Sample analyzed within 3 days holding time as required for acrolein and acrylonitrile. Other compounds within 7 days as required by the method.
- JC57306-7MS: (pH=6) Sample is not acid preserved per method/client criteria. Sample analyzed within 3 days holding time as required for acrolein and acrylonitrile. Other compounds within 7 days as required by the method.

Matrix: AQ **Batch ID:** VN11239

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC57351-3DUP, JC57351-4MS were used as the QC samples indicated.

Matrix: AQ **Batch ID:** VN11240

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC57152-1MS, JC57152-1MSD were used as the QC samples indicated.
- Blank Spike Recovery(s) for Trichloroethene are outside control limits.
- VN11240-BS for Trichloroethene: High percent recoveries and no associated positive reported in the QC batch.

Matrix: AQ **Batch ID:** VN11241

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC57328-1MS, JC57328-2DUP were used as the QC samples indicated.

Matrix: AQ **Batch ID:** VN11243

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC57103-2MS, JC57103-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GCMS By Method EPA 624

Matrix: AQ **Batch ID:** VT9393

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC56966-31MS, JC56966-31MSD were used as the QC samples indicated.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JC56966
Account: United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Collected: 12/05/17 thru 12/07/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC56966-1	**B-2I**					
No hits reported in this sample.						
JC56966-2	**B-4D**					
No hits reported in this sample.						
JC56966-3	**B-4I**					
cis-1,2-Dichloroethene		1.2	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		1.2	1.0		ug/l	EPA 624
JC56966-4	**B-4S**					
No hits reported in this sample.						
JC56966-5	**B-5D**					
No hits reported in this sample.						
JC56966-6	**B-5I**					
Trichloroethene		1.4	1.0		ug/l	EPA 624
JC56966-7	**B-6I**					
Trichloroethene		2.6	1.0		ug/l	EPA 624
JC56966-8	**B-6S**					
Trichloroethene		1.1	1.0		ug/l	EPA 624
JC56966-9	**B-8D**					
No hits reported in this sample.						
JC56966-10	**B-8I**					
No hits reported in this sample.						
JC56966-11	**DUP-02**					
Trichloroethene		2.1	1.0		ug/l	EPA 624

Summary of Hits

Job Number: JC56966
Account: United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Collected: 12/05/17 thru 12/07/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC56966-12	**B-8S**					
No hits reported in this sample.						
JC56966-13	**B-9S**					
No hits reported in this sample.						
JC56966-14	**B-13D**					
No hits reported in this sample.						
JC56966-15	**B-16**					
cis-1,2-Dichloroethene		78.4	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		78.4	1.0		ug/l	EPA 624
Trichloroethene		220	10		ug/l	EPA 624
JC56966-16	**B-18**					
No hits reported in this sample.						
JC56966-17	**B-23I/D**					
Trichloroethene		3.3	1.0		ug/l	EPA 624
JC56966-18	**C-1D**					
No hits reported in this sample.						
JC56966-19	**C-1I**					
cis-1,2-Dichloroethene		3.5	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		3.5	1.0		ug/l	EPA 624
Trichloroethene		22.9	1.0		ug/l	EPA 624
JC56966-20	**C-1S**					
No hits reported in this sample.						
JC56966-21	**C-2D**					
cis-1,2-Dichloroethene		7.1	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		7.1	1.0		ug/l	EPA 624
Trichloroethene		6.3	1.0		ug/l	EPA 624

Summary of Hits

Job Number: JC56966
Account: United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Collected: 12/05/17 thru 12/07/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC56966-22	**DUP-03**					
cis-1,2-Dichloroethene		86.4	1.0		ug/l	EPA 624
trans-1,2-Dichloroethene		2.2	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		88.6	1.0		ug/l	EPA 624
Trichloroethene		219	10		ug/l	EPA 624
JC56966-23	**C-2I**					
cis-1,2-Dichloroethene		1.7	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		1.7	1.0		ug/l	EPA 624
Trichloroethene		75.3	1.0		ug/l	EPA 624
JC56966-24	**C-2S**					
No hits reported in this sample.						
JC56966-25	**C-3D**					
No hits reported in this sample.						
JC56966-26	**C-3I**					
cis-1,2-Dichloroethene		1.6	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		1.6	1.0		ug/l	EPA 624
Trichloroethene		18.7	1.0		ug/l	EPA 624
JC56966-27	**C-3S**					
No hits reported in this sample.						
JC56966-28	**C-6**					
Trichloroethene		4.8	1.0		ug/l	EPA 624
JC56966-29	**C-8**					
No hits reported in this sample.						
JC56966-30	**C-9**					
No hits reported in this sample.						

Summary of Hits

Job Number: JC56966
Account: United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Collected: 12/05/17 thru 12/07/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC56966-31	**C-11I**					
No hits reported in this sample.						
JC56966-32	**C-10D**					
No hits reported in this sample.						
JC56966-33	**DUP-01**					
No hits reported in this sample.						
JC56966-34	**SM-1**					
Trichloroethene		68.4	1.0		ug/l	EPA 624
JC56966-35	**SM-2**					
cis-1,2-Dichloroethene		24.3	4.0		ug/l	EPA 624
1,2-Dichloroethene (total)		24.3	4.0		ug/l	EPA 624
Trichloroethene		579	4.0		ug/l	EPA 624
JC56966-36	**W-6**					
cis-1,2-Dichloroethene		9.4	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		9.4	1.0		ug/l	EPA 624
Trichloroethene		5.6	1.0		ug/l	EPA 624
JC56966-37	**W-7**					
No hits reported in this sample.						
JC56966-38	**W-12**					
cis-1,2-Dichloroethene		1.8	1.0		ug/l	EPA 624
1,2-Dichloroethene (total)		1.8	1.0		ug/l	EPA 624
Trichloroethene		6.5	1.0		ug/l	EPA 624
JC56966-39	**DUP-04**					
cis-1,2-Dichloroethene		23.5	4.0		ug/l	EPA 624
1,2-Dichloroethene (total)		23.5	4.0		ug/l	EPA 624
Trichloroethene		593	4.0		ug/l	EPA 624

Summary of Hits

Job Number: JC56966
Account: United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Collected: 12/05/17 thru 12/07/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC56966-40	**TRIP BLANK**					

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID: B-2I
Lab Sample ID: JC56966-1 **Date Sampled:** 12/05/17
Matrix: AQ - Ground Water **Date Received:** 12/08/17
Method: EPA 624 **Percent Solids:** n/a
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266598.D	1	12/13/17 03:30	CSF	n/a	n/a	VN11234
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	111%		76-122%
2037-26-5	Toluene-D8 (SUR)	95%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	117%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-4D		
Lab Sample ID:	JC56966-2	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266599.D	1	12/13/17 04:00	CSF	n/a	n/a	VN11234
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	115%		76-122%
2037-26-5	Toluene-D8 (SUR)	94%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	117%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-4I		
Lab Sample ID:	JC56966-3	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266600.D	1	12/13/17 04:29	CSF	n/a	n/a	VN11234
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	1.2	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	1.2	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	117%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	119%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-4S		
Lab Sample ID:	JC56966-4	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266601.D	1	12/13/17 04:58	CSF	n/a	n/a	VN11234
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	118%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	114%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-5D		
Lab Sample ID:	JC56966-5	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266602.D	1	12/13/17 05:28	CSF	n/a	n/a	VN11234
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	95%		80-120%
1868-53-7	Dibromofluoromethane (S)	117%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-5I		
Lab Sample ID:	JC56966-6	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T228722.D	1	12/13/17 04:51	CSF	n/a	n/a	VT9393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	1.4	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%		76-122%
2037-26-5	Toluene-D8 (SUR)	104%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	109%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-6I		
Lab Sample ID:	JC56966-7	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266603.D	1	12/13/17 05:57	CSF	n/a	n/a	VN11234
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	2.6	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%		76-122%
2037-26-5	Toluene-D8 (SUR)	94%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	110%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-6S		
Lab Sample ID:	JC56966-8	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266604.D	1	12/13/17 06:27	CSF	n/a	n/a	VN11234
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	1.1	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	118%		76-122%
2037-26-5	Toluene-D8 (SUR)	92%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	113%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-8D		
Lab Sample ID:	JC56966-9	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266597.D	1	12/13/17 03:01	CSF	n/a	n/a	VN11234
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	100%		76-122%
2037-26-5	Toluene-D8 (SUR)	95%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%		80-120%
1868-53-7	Dibromofluoromethane (S)	105%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-8I		
Lab Sample ID:	JC56966-10	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T228723.D	1	12/13/17 05:21	CSF	n/a	n/a	VT9393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	118%		76-122%
2037-26-5	Toluene-D8 (SUR)	101%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	111%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DUP-02		
Lab Sample ID:	JC56966-11	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T228724.D	1	12/13/17 05:51	CSF	n/a	n/a	VT9393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	2.1	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	113%		76-122%
2037-26-5	Toluene-D8 (SUR)	105%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	96%		80-120%
1868-53-7	Dibromofluoromethane (S)	113%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-8S		
Lab Sample ID:	JC56966-12	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T228725.D	1	12/13/17 06:21	CSF	n/a	n/a	VT9393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%		76-122%
2037-26-5	Toluene-D8 (SUR)	102%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	115%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-9S		
Lab Sample ID:	JC56966-13	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T228726.D	1	12/13/17 06:52	CSF	n/a	n/a	VT9393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	115%		76-122%
2037-26-5	Toluene-D8 (SUR)	104%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	113%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-13D		
Lab Sample ID:	JC56966-14	**Date Sampled:**	12/05/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266714.D	1	12/15/17 16:52	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	108%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-16		
Lab Sample ID:	JC56966-15	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266757.D	1	12/18/17 13:45	CSF	n/a	n/a	VN11241
Run #2	N266758.D	10	12/18/17 14:24	CSF	n/a	n/a	VN11241

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	78.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	78.4	1.0	ug/l	
79-01-6	Trichloroethene	220 [a]	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	109%	115%	76-122%
2037-26-5	Toluene-D8 (SUR)	98%	94%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	107%	102%	80-120%
1868-53-7	Dibromofluoromethane (S)	107%	112%	80-120%

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-18		
Lab Sample ID:	JC56966-16	**Date Sampled:**	12/05/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266679.D	1	12/14/17 23:04	CSF	n/a	n/a	VN11237
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	118%		76-122%
2037-26-5	Toluene-D8 (SUR)	94%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	115%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	B-23I/D		
Lab Sample ID:	JC56966-17	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266753.D	1	12/18/17 11:47	CSF	n/a	n/a	VN11241
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	3.3	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	110%		76-122%
2037-26-5	Toluene-D8 (SUR)	94%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%		80-120%
1868-53-7	Dibromofluoromethane (S)	109%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-1D		
Lab Sample ID:	JC56966-18	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266680.D	1	12/14/17 23:33	CSF	n/a	n/a	VN11237
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	120%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	113%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-1I		
Lab Sample ID:	JC56966-19	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266720.D	1	12/15/17 19:49	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	3.5	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	3.5	1.0	ug/l	
79-01-6	Trichloroethene	22.9	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	111%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	108%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-1S		
Lab Sample ID:	JC56966-20	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266721.D	1	12/15/17 20:18	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	117%		76-122%
2037-26-5	Toluene-D8 (SUR)	90%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	116%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-2D		
Lab Sample ID:	JC56966-21	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266722.D	1	12/15/17 20:47	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	7.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	7.1	1.0	ug/l	
79-01-6	Trichloroethene	6.3	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	113%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DUP-03		
Lab Sample ID:	JC56966-22	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266802.D	1	12/19/17 13:34	CSF	n/a	n/a	VN11243
Run #2	N266803.D	10	12/19/17 14:38	CSF	n/a	n/a	VN11243

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	86.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	2.2	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	88.6	1.0	ug/l	
79-01-6	Trichloroethene	219 [a]	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	113%	110%	76-122%
2037-26-5	Toluene-D8 (SUR)	95%	91%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	104%	109%	80-120%
1868-53-7	Dibromofluoromethane (S)	113%	113%	80-120%

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-2I		
Lab Sample ID:	JC56966-23	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266723.D	1	12/15/17 21:17	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	1.7	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	1.7	1.0	ug/l	
79-01-6	Trichloroethene	75.3	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	115%		76-122%
2037-26-5	Toluene-D8 (SUR)	92%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	114%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-2S		
Lab Sample ID:	JC56966-24	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266733.D	1	12/16/17 02:10	CSF	n/a	n/a	VN11240
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	107%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-3D		
Lab Sample ID:	JC56966-25	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266734.D	1	12/16/17 02:40	CSF	n/a	n/a	VN11240
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	109%		76-122%
2037-26-5	Toluene-D8 (SUR)	91%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%		80-120%
1868-53-7	Dibromofluoromethane (S)	111%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-3I		
Lab Sample ID:	JC56966-26	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266754.D	1	12/18/17 12:17	CSF	n/a	n/a	VN11241
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	1.6	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	1.6	1.0	ug/l	
79-01-6	Trichloroethene	18.7	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%		80-120%
1868-53-7	Dibromofluoromethane (S)	106%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-3S		
Lab Sample ID:	JC56966-27	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266736.D	1	12/16/17 03:38	CSF	n/a	n/a	VN11240
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	113%		76-122%
2037-26-5	Toluene-D8 (SUR)	90%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	111%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-6		
Lab Sample ID:	JC56966-28	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266755.D	1	12/18/17 12:46	CSF	n/a	n/a	VN11241
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	4.8	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%		76-122%
2037-26-5	Toluene-D8 (SUR)	92%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%		80-120%
1868-53-7	Dibromofluoromethane (S)	116%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-8		
Lab Sample ID:	JC56966-29	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266738.D	1	12/16/17 04:37	CSF	n/a	n/a	VN11240
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	115%		76-122%
2037-26-5	Toluene-D8 (SUR)	91%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%		80-120%
1868-53-7	Dibromofluoromethane (S)	110%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-9		
Lab Sample ID:	JC56966-30	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266739.D	1	12/16/17 05:06	CSF	n/a	n/a	VN11240
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%		76-122%
2037-26-5	Toluene-D8 (SUR)	90%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%		80-120%
1868-53-7	Dibromofluoromethane (S)	113%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-11I		
Lab Sample ID:	JC56966-31	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T228721.D	1	12/13/17 04:21	CSF	n/a	n/a	VT9393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	117%		76-122%
2037-26-5	Toluene-D8 (SUR)	103%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	114%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-10D		
Lab Sample ID:	JC56966-32	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266756.D	1	12/18/17 13:16	CSF	n/a	n/a	VN11241
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	112%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DUP-01		
Lab Sample ID:	JC56966-33	**Date Sampled:**	12/07/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266741.D	1	12/16/17 06:05	CSF	n/a	n/a	VN11240
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	113%		76-122%
2037-26-5	Toluene-D8 (SUR)	89%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	109%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	SM-1		
Lab Sample ID:	JC56966-34	**Date Sampled:**	12/05/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266708.D	1	12/15/17 13:56	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	68.4	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	110%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	SM-2		
Lab Sample ID:	JC56966-35	**Date Sampled:**	12/05/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266716.D	4	12/15/17 17:51	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	24.3	4.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	4.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	24.3	4.0	ug/l	
79-01-6	Trichloroethene	579	4.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%		76-122%
2037-26-5	Toluene-D8 (SUR)	94%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%		80-120%
1868-53-7	Dibromofluoromethane (S)	112%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-6		
Lab Sample ID:	JC56966-36	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266715.D	1	12/15/17 17:22	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	9.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	9.4	1.0	ug/l	
79-01-6	Trichloroethene	5.6	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	113%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%		80-120%
1868-53-7	Dibromofluoromethane (S)	111%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-7		
Lab Sample ID:	JC56966-37	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266717.D	1	12/15/17 18:20	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	115%		76-122%
2037-26-5	Toluene-D8 (SUR)	94%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	110%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-12		
Lab Sample ID:	JC56966-38	**Date Sampled:**	12/06/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266718.D	1	12/15/17 18:50	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	1.8	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	1.8	1.0	ug/l	
79-01-6	Trichloroethene	6.5	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	112%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DUP-04		
Lab Sample ID:	JC56966-39	**Date Sampled:**	12/05/17
Matrix:	AQ - Ground Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N266719.D	4	12/15/17 19:19	CSF	n/a	n/a	VN11239
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	23.5	4.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	4.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	23.5	4.0	ug/l	
79-01-6	Trichloroethene	593	4.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%		76-122%
2037-26-5	Toluene-D8 (SUR)	93%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	110%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JC56966-40	**Date Sampled:**	12/07/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/08/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T228720.D	1	12/13/17 03:51	CSF	n/a	n/a	VT9393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%		76-122%
2037-26-5	Toluene-D8 (SUR)	103%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	115%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 4

FED-EX Tracking # 4077 3094 1951 | Bottle Order Control # JC56966
SGS Accutest Quote # | SGS Accutest Job #

Client / Reporting Information

Company Name: Spitzer Consulting
Street Address: 8770 Guion Rd Ste B
City: Indianapolis State: Indiana Zip: 46268
Project Contact: Susan Hall E-mail: Susan.Hall@stantec.com
Phone #: 317-870-8375 Fax #:
Sampler(s) Name(s): A Schreiber, P Janney Phone #:

Project Information

Project Name: ITC - Zanesville Well Field
Street:
City: Zanesville State: Ohio
Project #: 182602727
Client Purchase Order #:
Project Manager: Susan Hall

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

VOC 624.2
MS1 MSD

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	LAB USE ONLY
1	B-2I		12/5/17	1540	PJ	GW	3	X								
2	B-4D		12/6/17	1105	PJ	GW	3	X								V422
3	B-4I		12/6/17	1018	PJ	GW	3	X								V423
4	B-4S		12/6/17	0945	PJ	GW	3	X								
5	B-5D		12/5/17	1505	PJ	GW	3	X								
6	B-5I		12/5/17	1350	AS	GW	3	X								
7	B-6I		12/6/17	1315	AS	GW	3	X								
8	B-6S		12/6/17	1240	AS	GW	3	X								
9	B-8D		12/6/17	1416	PJ	GW	9	X								
10	B-8I		12/6/17	1420	AS	GW	3	X								
11	DUP-02		12/6/17	—	AS	GW	3	X								

Turnaround Time (Business days)

Approved By (SGS Accutest PM): / Date:

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Emergency & Rush T/A data available VIA Labtink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [X] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

INITIAL ASESSMENT 3B Dom

LABEL VERIFICATION

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler	Date Time	Received By	Relinquished By	Date Time	Received By
1	Paul M Janney	12/7/17 1800	Fed Ex	2 Fed Ex	12/8/17 9:40	2
3	Relinquished by Sampler	Date Time	Received By	Relinquished By	Date Time	Received By
			3	4		4
5	Relinquished by:	Date Time	Received By: 5	Custody Seal # 492 [ ] Intact [ ] Not Intact	Preserved where applicable [ ]	On Ice Cooler Temp: 3.4 4

Form:SM088-01CRev.Date:9/13/16

SGS ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking # 407730941951
Bottle Order Control # JC56966
SGS Accutest Quote #
SGS Accutest Job #

Client / Reporting Information

Company Name: Stantec Consulting
Street Address: 8770 Guion Rd Ste B
City: Indianapolis State: Indiana Zip: 46268
Project Contact: Susan Hall E-mail: susan.hall@stantec.com
Phone #: 317-876-8375 Fax #:
Sampler(s) Name(s): A. Schreiber, P. Janney Phone #:

Project Information

Project Name: UTC - Zanesville Well Field
Street:
City: Zanesville State: Ohio
Project #: 182602727
Client Purchase Order #:
Project Manager: Susan Hall

Billing Information (if different from Report to)
Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	VOC 624.2	MS/MSD	LAB USE ONLY
12	B-8S		12/6/17	1420	PJ	GW	3	X								X		
13	B-9S		12/6/17	1310	PJ	GW	3	X								X		
14	B-13D		12/5/17	1240	AS	GW	3	X								X		
15	B-16		12/6/17	0930	AS	GW	3	X								X		
16	B-18		12/5/17	1025	AS	GW	3	X								X		
17	B-23I/D		12/7/17	1340	PJ	GW	3	X								X		
18	C-1D		12/7/17	1250	AS	GW	3	X								X		
19	C-1I		12/7/17	1520	AS	GW	3	X								X		
20	C-1S		12/7/17	1430	AS	GW	3	X								X		
21	C-2D		12/6/17	1555	PJ	GW	3	X								X		
22	DUP-03		12/6/17	—	AS	GW	3	X								X		

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Approved By (SGS Accutest PM) / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [x] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler	Date Time	Received By	Relinquished By	Date Time	Received By
1 Paul M. Janney	12/7/17 1800	1 Fed Ex	2 Fed Ex	12/8/17 9:40	2 [signature]
3		3	4		4
5		5	Custody Seal # 492 ☐ Intact ☐ Not Intact	Preserved where applicable ☐	On Ice ☒ Cooler Temp. 3.4°C

Form SM088-01CRev Date 9/13/16

JC56966: Chain of Custody
Page 2 of 5

SGS ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 3 OF 4

FED-EX Tracking #: 407730141951 | Bottle Order Control #: JC56966
SGS Accutest Quote #: | SGS Accutest Job #:

Client / Reporting Information

Company Name: Stantec Consulting
Street Address: 8778 Guion Rd Ste B
City / State / Zip: Indianapolis, Indiana 46268
Project Contact / E-mail: Susan Hall susan.hall@stantec.com
Phone # / Fax #: 317-876-8375
Sampler(s) Name(s) / Phone #: A. Schreiber, P. Janney

Project Information

Project Name: UTC - Zanesville Well Field
Street:
City / State:
Project #: 182602727
Client Purchase Order #:
Project Manager: Susan Hall

Billing Information (if different from Report to)

Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

VOC (624.2) | DRO / MS / MSD

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED - Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB - Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	VOC (624.2)	DRO / MS / MSD	LAB USE ONLY
23	C-2I		12/6/17	1600	AS	GW	3	X								X		
24	C-2S		12/7/17	1425	PJ	GW	3	X								X		
25	C-3D		12/6/17	1525	AS	GW	3	X								X		
26	C-3I		12/6/17	1513	PJ	GW	3	X								X		
27	C-3S		12/7/17	1045	PJ	GW	3	X								X		
28	C-6		12/6/17	0958	PJ	GW	3	X								X		
29	C-8		12/7/17	1205	PJ	GW	3	X								X		
30	C-9		12/7/17	1250	PJ	GW	3	X								X		
31	C-11I		12/7/17	1025	AS	GW	9	X								X	X	
32	C-10D		12/7/17	1125	AS	GW	3	X								X		
33	DUP-01		12/7/17	—	AS	GW	3	X								X		

Turnaround Time (Business days)

Approved By (SGS Accutest PM): / Date:

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Emergency & Rush T/A data available VIA Labtink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [X] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler	Date Time	Received By	Relinquished By	Date Time	Received By
1	Paul M. Janney	12/7/17 1800	Fed Ex	Fed Ex	12/8/17 9:40	
2						
3						
4						
5						

Custody Seal # 492 [ ] Intact [ ] Not Intact | Preserved where applicable [ ] | On Ice [X] | Cooler Temp: 3.4

SGS ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 4 OF 4

FED-EX Tracking # 407736941951 | Bottle Order Control # JC56966
SGS Accutest Quote # | SGS Accutest Job #

Client / Reporting Information

Company Name: Stantec Consulting
Street Address: 8778 Guion Rd Ste B
City: Indianapolis State: Indiana Zip: 46268
Project Contact: Susan Hall E-mail: susan.hall@stantec.com
Phone #: 317-876-8375 Fax #:
Sampler(s) Name(s): A Schreiber, P Janney Phone #:

Project Information

Project Name: UTC - Zanesville Well Field
Street:
City: Zanesville State: Ohio
Project #: 182632727
Client Purchase Order #:
Project Manager: Susan Hall
Attention:

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:

Requested Analysis (see TEST CODE sheet)

VOC 624.2 MS / MSD

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE		LAB USE ONLY
34	~~S-9DR~~ SM-1		12/5/17	1720	AS	GW	3	X								X	
35	SM-2		12/5/17	1710	PJ	GW	3	X								X	
36	W-6		12/7/17	1125	PJ	GW	3	X								X	
37	W-7		12/7/17	1055	PJ	GW	3	X								X	
38	W-12		12/7/17	1115	PJ	GW	3	X								X	
39	DUP-04		12/5/17	—	PJ	GW	3	X								X	
40	Trip Blank		11/30/17	1130	—	TB	2	X								X	

Turnaround Time (Business days)

Approved By (SGS Accutest PM): / Date:

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Emergency & Rush T/A data available VIA Labilink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [X] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler	Date Time	Received By	Relinquished By	Date Time	Received By
1	Paul M. Janney	12/7/17 1800	1 Fed Ex	2 Fed Ex	12/8/17 9:40	2
3	Relinquished by Sampler:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal # 492 [ ] Intact [ ] Not Intact	Preserved where applicable: [ ]	On Ice: Ø Cooler Temp: 3.4°

Form SM088-01CRev.Date:9/13/16

SGS Accutest Sample Receipt Summary

Job Number: JC56966 **Client:** _____ **Project:** _____

Date / Time Received: 12/8/2017 9:40:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (4.3);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 216017 pH 12+: 208717 Other: (Specify) _____ _____

Comments

SM089-03
Rev. Date 12/7/17

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56966-1 B-2I	Collected: 05-DEC-17 15:40 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-1	EPA 624	13-DEC-17 03:30	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-2 B-4D	Collected: 06-DEC-17 11:05 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-2	EPA 624	13-DEC-17 04:00	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-3 B-4I	Collected: 06-DEC-17 10:18 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-3	EPA 624	13-DEC-17 04:29	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-4 B-4S	Collected: 06-DEC-17 09:45 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-4	EPA 624	13-DEC-17 04:58	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-5 B-5D	Collected: 06-DEC-17 15:05 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-5	EPA 624	13-DEC-17 05:28	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-6 B-5I	Collected: 06-DEC-17 13:50 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-6	EPA 624	13-DEC-17 04:51	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-7 B-6I	Collected: 06-DEC-17 13:15 By: PJ		Received: 08-DEC-17 By: AS			

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56966-7	EPA 624	13-DEC-17 05:57	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-8 B-6S	Collected: 06-DEC-17 12:40 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-8	EPA 624	13-DEC-17 06:27	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-9 B-8D	Collected: 06-DEC-17 14:10 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-9	EPA 624	13-DEC-17 03:01	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-10 B-8I	Collected: 06-DEC-17 14:20 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-10	EPA 624	13-DEC-17 05:21	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-11 DUP-02	Collected: 06-DEC-17 00:00 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-11	EPA 624	13-DEC-17 05:51	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-12 B-8S	Collected: 06-DEC-17 14:20 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-12	EPA 624	13-DEC-17 06:21	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-13 B-9S	Collected: 06-DEC-17 13:10 By: PJ		Received: 08-DEC-17 By: AS			
JC56966-13	EPA 624	13-DEC-17 06:52	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56966-14 Collected: 05-DEC-17 12:40 By: PJ B-13D			Received: 08-DEC-17	By: AS		
JC56966-14	EPA 624	15-DEC-17 16:52	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-15 Collected: 06-DEC-17 09:30 By: PJ B-16			Received: 08-DEC-17	By: AS		
JC56966-15	EPA 624	18-DEC-17 13:45	CSF			VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-15	EPA 624	18-DEC-17 14:24	CSF			V624TCE
JC56966-16 Collected: 05-DEC-17 10:25 By: PJ B-18			Received: 08-DEC-17	By: AS		
JC56966-16	EPA 624	14-DEC-17 23:04	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-17 Collected: 07-DEC-17 13:40 By: PJ B-23I/D			Received: 08-DEC-17	By: AS		
JC56966-17	EPA 624	18-DEC-17 11:47	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-18 Collected: 07-DEC-17 12:50 By: PJ C-1D			Received: 08-DEC-17	By: AS		
JC56966-18	EPA 624	14-DEC-17 23:33	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-19 Collected: 07-DEC-17 15:20 By: PJ C-1I			Received: 08-DEC-17	By: AS		
JC56966-19	EPA 624	15-DEC-17 19:49	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56966-20 Collected: 07-DEC-17 14:30 By: PJ C-1S			Received: 08-DEC-17	By: AS		
JC56966-20	EPA 624	15-DEC-17 20:18	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-21 Collected: 06-DEC-17 15:55 By: PJ C-2D			Received: 08-DEC-17	By: AS		
JC56966-21	EPA 624	15-DEC-17 20:47	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-22 Collected: 06-DEC-17 00:00 By: PJ DUP-03			Received: 08-DEC-17	By: AS		
JC56966-22	EPA 624	19-DEC-17 13:34	CSF			VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-22	EPA 624	19-DEC-17 14:38	CSF			V624TCE
JC56966-23 Collected: 06-DEC-17 16:00 By: PJ C-2I			Received: 08-DEC-17	By: AS		
JC56966-23	EPA 624	15-DEC-17 21:17	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-24 Collected: 07-DEC-17 14:25 By: PJ C-2S			Received: 08-DEC-17	By: AS		
JC56966-24	EPA 624	16-DEC-17 02:10	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-25 Collected: 06-DEC-17 15:25 By: PJ C-3D			Received: 08-DEC-17	By: AS		
JC56966-25	EPA 624	16-DEC-17 02:40	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56966-26 Collected: 06-DEC-17 15:13 By: PJ C-3I			Received: 08-DEC-17	By: AS		
JC56966-26	EPA 624	18-DEC-17 12:17	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-27 Collected: 07-DEC-17 10:45 By: PJ C-3S			Received: 08-DEC-17	By: AS		
JC56966-27	EPA 624	16-DEC-17 03:38	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-28 Collected: 06-DEC-17 09:58 By: PJ C-6			Received: 08-DEC-17	By: AS		
JC56966-28	EPA 624	18-DEC-17 12:46	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-29 Collected: 07-DEC-17 12:05 By: PJ C-8			Received: 08-DEC-17	By: AS		
JC56966-29	EPA 624	16-DEC-17 04:37	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-30 Collected: 07-DEC-17 12:50 By: PJ C-9			Received: 08-DEC-17	By: AS		
JC56966-30	EPA 624	16-DEC-17 05:06	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-31 Collected: 07-DEC-17 10:25 By: PJ C-11I			Received: 08-DEC-17	By: AS		
JC56966-31	EPA 624	13-DEC-17 04:21	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-32 Collected: 07-DEC-17 11:25 By: PJ C-10D			Received: 08-DEC-17	By: AS		

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56966-32	EPA 624	18-DEC-17 13:16	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-33 Collected: 07-DEC-17 00:00 By: PJ DUP-01			Received: 08-DEC-17 By: AS			
JC56966-33	EPA 624	16-DEC-17 06:05	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-34 Collected: 05-DEC-17 17:20 By: PJ SM-1			Received: 08-DEC-17 By: AS			
JC56966-34	EPA 624	15-DEC-17 13:56	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-35 Collected: 05-DEC-17 17:10 By: PJ SM-2			Received: 08-DEC-17 By: AS			
JC56966-35	EPA 624	15-DEC-17 17:51	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-36 Collected: 06-DEC-17 11:25 By: PJ W-6			Received: 08-DEC-17 By: AS			
JC56966-36	EPA 624	15-DEC-17 17:22	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-37 Collected: 06-DEC-17 10:55 By: PJ W-7			Received: 08-DEC-17 By: AS			
JC56966-37	EPA 624	15-DEC-17 18:20	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-38 Collected: 06-DEC-17 11:15 By: PJ W-12			Received: 08-DEC-17 By: AS			
JC56966-38	EPA 624	15-DEC-17 18:50	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC56966

SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Project No: 182602727

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC56966-39 Collected: 05-DEC-17 00:00 By: PJ DUP-04				Received: 08-DEC-17	By: AS	
JC56966-39	EPA 624	15-DEC-17 19:19	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE
JC56966-40 Collected: 07-DEC-17 15:20 By: PJ TRIP BLANK				Received: 08-DEC-17	By: AS	
JC56966-40	EPA 624	13-DEC-17 03:51	CSF			V624TCE, VMS+ 12DCE, VMS+ DCE, VMS+ T12DCE

SGS Internal Chain of Custody

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Received: 12/08/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56966-1.2	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-1.2	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-1.2	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-1.2	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage
JC56966-2.1	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-2.1	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-2.1	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-2.1	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage
JC56966-3.1	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-3.1	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-3.1	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-3.1	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage
JC56966-4.2	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-4.2	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-4.2	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-4.2	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage
JC56966-5.2	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-5.2	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-5.2	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-5.2	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage
JC56966-6.2	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-6.2	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-6.2	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-6.2	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage
JC56966-7.2	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-7.2	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-7.2	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-7.2	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage
JC56966-8.2	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-8.2	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-8.2	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-8.2	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage
JC56966-9.4	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-9.4	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-9.4	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-9.4	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage

SGS Internal Chain of Custody

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, [NON RESPONSIVE] Zanesville, OH
Received: 12/08/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56966-9.6	Secured Storage	Chelsea San Filippo	12/12/17 15:54	Retrieve from Storage
JC56966-9.6	Chelsea San Filippo	GCMST	12/12/17 15:54	Load on Instrument
JC56966-9.6	GCMST	Chelsea San Filippo	12/13/17 10:48	Unload from Instrument
JC56966-9.6	Chelsea San Filippo	Secured Storage	12/13/17 10:48	Return to Storage
JC56966-9.7	Secured Storage	Chelsea San Filippo	12/12/17 16:02	Retrieve from Storage
JC56966-9.7	Chelsea San Filippo	GCMSN	12/12/17 16:02	Load on Instrument
JC56966-9.7	GCMSN	Chelsea San Filippo	12/13/17 10:47	Unload from Instrument
JC56966-9.7	Chelsea San Filippo	Secured Storage	12/13/17 10:47	Return to Storage
JC56966-10.1	Secured Storage	Chelsea San Filippo	12/12/17 15:54	Retrieve from Storage
JC56966-10.1	Chelsea San Filippo	GCMST	12/12/17 15:54	Load on Instrument
JC56966-10.1	GCMST	Chelsea San Filippo	12/13/17 10:48	Unload from Instrument
JC56966-10.1	Chelsea San Filippo	Secured Storage	12/13/17 10:48	Return to Storage
JC56966-11.1	Secured Storage	Chelsea San Filippo	12/12/17 15:54	Retrieve from Storage
JC56966-11.1	Chelsea San Filippo	GCMST	12/12/17 15:54	Load on Instrument
JC56966-11.1	GCMST	Chelsea San Filippo	12/13/17 10:48	Unload from Instrument
JC56966-11.1	Chelsea San Filippo	Secured Storage	12/13/17 10:48	Return to Storage
JC56966-12.1	Secured Storage	Chelsea San Filippo	12/12/17 15:54	Retrieve from Storage
JC56966-12.1	Chelsea San Filippo	GCMST	12/12/17 15:54	Load on Instrument
JC56966-12.1	GCMST	Chelsea San Filippo	12/13/17 10:48	Unload from Instrument
JC56966-12.1	Chelsea San Filippo	Secured Storage	12/13/17 10:48	Return to Storage
JC56966-13.2	Secured Storage	Chelsea San Filippo	12/12/17 15:54	Retrieve from Storage
JC56966-13.2	Chelsea San Filippo	GCMST	12/12/17 15:54	Load on Instrument
JC56966-13.2	GCMST	Chelsea San Filippo	12/13/17 10:48	Unload from Instrument
JC56966-13.2	Chelsea San Filippo	Secured Storage	12/13/17 10:48	Return to Storage
JC56966-14.1	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-14.1	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-14.1	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-14.1	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-14.2	Secured Storage	Chelsea San Filippo	12/14/17 15:59	Retrieve from Storage
JC56966-14.2	Chelsea San Filippo	GCMSN	12/14/17 15:59	Load on Instrument
JC56966-14.2	GCMSN	Bridget Kelly	12/15/17 09:18	Unload from Instrument
JC56966-14.2	Bridget Kelly	Secured Storage	12/15/17 09:18	Return to Storage
JC56966-15.1	Secured Storage	Chelsea San Filippo	12/18/17 11:25	Retrieve from Storage
JC56966-15.1	Chelsea San Filippo	GCMSN	12/18/17 11:25	Load on Instrument
JC56966-15.1	GCMSN	Chelsea San Filippo	12/19/17 14:32	Unload from Instrument

SGS Internal Chain of Custody

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, [redacted] Zanesville, OH
Received: 12/08/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56966-15.1	Chelsea San Filippo	Secured Storage	12/19/17 14:32	Return to Storage
JC56966-15.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-15.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-15.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-15.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-16.1	Secured Storage	Chelsea San Filippo	12/14/17 15:59	Retrieve from Storage
JC56966-16.1	Chelsea San Filippo	GCMSN	12/14/17 15:59	Load on Instrument
JC56966-16.1	GCMSN	Bridget Kelly	12/15/17 09:18	Unload from Instrument
JC56966-16.1	Bridget Kelly	Secured Storage	12/15/17 09:18	Return to Storage
JC56966-17.1	Secured Storage	Chelsea San Filippo	12/18/17 11:25	Retrieve from Storage
JC56966-17.1	Chelsea San Filippo	GCMSN	12/18/17 11:25	Load on Instrument
JC56966-17.1	GCMSN	Chelsea San Filippo	12/19/17 14:32	Unload from Instrument
JC56966-17.1	Chelsea San Filippo	Secured Storage	12/19/17 14:32	Return to Storage
JC56966-17.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-17.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-17.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-17.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-18.2	Secured Storage	Chelsea San Filippo	12/14/17 15:59	Retrieve from Storage
JC56966-18.2	Chelsea San Filippo	GCMSN	12/14/17 15:59	Load on Instrument
JC56966-18.2	GCMSN	Bridget Kelly	12/15/17 09:18	Unload from Instrument
JC56966-18.2	Bridget Kelly	Secured Storage	12/15/17 09:18	Return to Storage
JC56966-19.1	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-19.1	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-19.1	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-19.1	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-20.1	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-20.1	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-20.1	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-20.1	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-21.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-21.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-21.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-21.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-22.1	Secured Storage	Chelsea San Filippo	12/19/17 14:33	Retrieve from Storage
JC56966-22.1	Chelsea San Filippo	GCMSN	12/19/17 14:33	Load on Instrument

SGS Internal Chain of Custody

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Received: 12/08/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56966-22.1	GCMSN	Chelsea San Filippo	12/20/17 10:40	Unload from Instrument
JC56966-22.1	Chelsea San Filippo	Secured Storage	12/20/17 10:40	Return to Storage
JC56966-22.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-22.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-22.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-22.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-23.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-23.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-23.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-23.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-24.1	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-24.1	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-24.1	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-24.1	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-25.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-25.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-25.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-25.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-26.1	Secured Storage	Chelsea San Filippo	12/18/17 11:25	Retrieve from Storage
JC56966-26.1	Chelsea San Filippo	GCMSN	12/18/17 11:25	Load on Instrument
JC56966-26.1	GCMSN	Chelsea San Filippo	12/19/17 14:32	Unload from Instrument
JC56966-26.1	Chelsea San Filippo	Secured Storage	12/19/17 14:32	Return to Storage
JC56966-26.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-26.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-26.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-26.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-27.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-27.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-27.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-27.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-28.1	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-28.1	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-28.1	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-28.1	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-28.2	Secured Storage	Chelsea San Filippo	12/18/17 11:25	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, [NON RESPONSIVE] Zanesville, OH
Received: 12/08/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56966-28.2	Chelsea San Filippo	GCMSN	12/18/17 11:25	Load on Instrument
JC56966-28.2	GCMSN	Chelsea San Filippo	12/19/17 14:32	Unload from Instrument
JC56966-28.2	Chelsea San Filippo	Secured Storage	12/19/17 14:32	Return to Storage
JC56966-29.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-29.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-29.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-29.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-30.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-30.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-30.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-30.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-31.4	Secured Storage	Chelsea San Filippo	12/12/17 15:54	Retrieve from Storage
JC56966-31.4	Chelsea San Filippo	GCMST	12/12/17 15:54	Load on Instrument
JC56966-31.4	GCMST	Chelsea San Filippo	12/13/17 10:48	Unload from Instrument
JC56966-31.4	Chelsea San Filippo	Secured Storage	12/13/17 10:48	Return to Storage
JC56966-31.7	Secured Storage	Chelsea San Filippo	12/12/17 15:54	Retrieve from Storage
JC56966-31.7	Chelsea San Filippo	GCMST	12/12/17 15:54	Load on Instrument
JC56966-31.7	GCMST	Chelsea San Filippo	12/13/17 10:48	Unload from Instrument
JC56966-31.7	Chelsea San Filippo	Secured Storage	12/13/17 10:48	Return to Storage
JC56966-31.8	Secured Storage	Chelsea San Filippo	12/12/17 15:54	Retrieve from Storage
JC56966-31.8	Chelsea San Filippo	GCMST	12/12/17 15:54	Load on Instrument
JC56966-31.8	GCMST	Chelsea San Filippo	12/13/17 10:48	Unload from Instrument
JC56966-31.8	Chelsea San Filippo	Secured Storage	12/13/17 10:48	Return to Storage
JC56966-32.1	Secured Storage	Chelsea San Filippo	12/18/17 11:25	Retrieve from Storage
JC56966-32.1	Chelsea San Filippo	GCMSN	12/18/17 11:25	Load on Instrument
JC56966-32.1	GCMSN	Chelsea San Filippo	12/19/17 14:32	Unload from Instrument
JC56966-32.1	Chelsea San Filippo	Secured Storage	12/19/17 14:32	Return to Storage
JC56966-32.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-32.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-32.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-32.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-33.1	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-33.1	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-33.1	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-33.1	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage

SGS Internal Chain of Custody

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH
Received: 12/08/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC56966-34.1	Secured Storage	Bridget Kelly	12/15/17 14:42	Retrieve from Storage
JC56966-34.1	Bridget Kelly	GCMST	12/15/17 14:42	Load on Instrument
JC56966-34.1	GCMST	Chelsea San Filippo	12/18/17 10:58	Unload from Instrument
JC56966-34.1	Chelsea San Filippo	Secured Storage	12/18/17 10:58	Return to Storage
JC56966-35.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-35.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-35.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-35.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-36.1	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-36.1	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-36.1	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-36.1	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-37.1	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-37.1	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-37.1	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-37.1	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-38.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-38.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-38.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-38.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-39.2	Secured Storage	Bridget Kelly	12/15/17 14:41	Retrieve from Storage
JC56966-39.2	Bridget Kelly	GCMSN	12/15/17 14:41	Load on Instrument
JC56966-39.2	GCMSN	Chelsea San Filippo	12/18/17 10:59	Unload from Instrument
JC56966-39.2	Chelsea San Filippo	Secured Storage	12/18/17 10:59	Return to Storage
JC56966-40.2	Secured Storage	Chelsea San Filippo	12/12/17 15:54	Retrieve from Storage
JC56966-40.2	Chelsea San Filippo	GCMST	12/12/17 15:54	Load on Instrument
JC56966-40.2	GCMST	Chelsea San Filippo	12/13/17 10:48	Unload from Instrument
JC56966-40.2	Chelsea San Filippo	Secured Storage	12/13/17 10:48	Return to Storage

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11234-MB	N266592.D	1	12/13/17	CSF	n/a	n/a	VN11234

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-1, JC56966-2, JC56966-3, JC56966-4, JC56966-5, JC56966-7, JC56966-8, JC56966-9

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	122%	76-122%
2037-26-5	Toluene-D8 (SUR)	93%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	95%	80-120%
1868-53-7	Dibromofluoromethane (S)	115%	80-120%

Method Blank Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9393-MB	T228715.D	1	12/13/17	CSF	n/a	n/a	VT9393

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-6, JC56966-10, JC56966-11, JC56966-12, JC56966-13, JC56966-31, JC56966-40

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%	76-122%
2037-26-5	Toluene-D8 (SUR)	102%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	95%	80-120%
1868-53-7	Dibromofluoromethane (S)	117%	80-120%

Method Blank Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11237-MB	N266654.D	1	12/14/17	CSF	n/a	n/a	VN11237

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-16, JC56966-18

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%	76-122%
2037-26-5	Toluene-D8 (SUR)	95%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	104%	80-120%
1868-53-7	Dibromofluoromethane (S)	116%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.40	180	ug/l	J
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11239-MB	N266698.D	1	12/15/17	CSF	n/a	n/a	VN11239

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-14, JC56966-19, JC56966-20, JC56966-21, JC56966-23, JC56966-34, JC56966-35, JC56966-36, JC56966-37, JC56966-38, JC56966-39

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%	76-122%
2037-26-5	Toluene-D8 (SUR)	93%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%	80-120%
1868-53-7	Dibromofluoromethane (S)	111%	80-120%

Method Blank Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11240-MB	N266725.D	1	12/15/17	CSF	n/a	n/a	VN11240

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-24, JC56966-25, JC56966-27, JC56966-29, JC56966-30, JC56966-33

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	119%	76-122%
2037-26-5	Toluene-D8 (SUR)	93%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%	80-120%
1868-53-7	Dibromofluoromethane (S)	114%	80-120%

Method Blank Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11241-MB	N266750.D	1	12/18/17	CSF	n/a	n/a	VN11241

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-15, JC56966-17, JC56966-26, JC56966-28, JC56966-32

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%	76-122%
2037-26-5	Toluene-D8 (SUR)	93%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	104%	80-120%
1868-53-7	Dibromofluoromethane (S)	110%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.40	200	ug/l	J
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11243-MB	N266799.D	1	12/19/17	CSF	n/a	n/a	VN11243

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-22

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	110%	76-122%
2037-26-5	Toluene-D8 (SUR)	96%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	110%	80-120%
1868-53-7	Dibromofluoromethane (S)	106%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.40	210	ug/l	J
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11234-BS	N266593.D	1	12/13/17	CSF	n/a	n/a	VN11234

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-1, JC56966-2, JC56966-3, JC56966-4, JC56966-5, JC56966-7, JC56966-8, JC56966-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	20.3	102	72-115
156-60-5	trans-1,2-Dichloroethene	20	20.7	104	70-121
540-59-0	1,2-Dichloroethene (total)	40	40.9	102	72-117
79-01-6	Trichloroethene	20	21.6	108	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	109%	76-122%
2037-26-5	Toluene-D8 (SUR)	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%	80-120%
1868-53-7	Dibromofluoromethane (S)	105%	80-120%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9393-BS	T228716.D	1	12/13/17	CSF	n/a	n/a	VT9393

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-6, JC56966-10, JC56966-11, JC56966-12, JC56966-13, JC56966-31, JC56966-40

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	20.9	105	72-115
156-60-5	trans-1,2-Dichloroethene	20	22.2	111	70-121
540-59-0	1,2-Dichloroethene (total)	40	43.0	108	72-117
79-01-6	Trichloroethene	20	18.6	93	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	110%	76-122%
2037-26-5	Toluene-D8 (SUR)	105%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	80-120%
1868-53-7	Dibromofluoromethane (S)	111%	80-120%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11237-BS	N266655.D	1	12/14/17	CSF	n/a	n/a	VN11237

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-16, JC56966-18

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	20.0	100	72-115
156-60-5	trans-1,2-Dichloroethene	20	19.2	96	70-121
540-59-0	1,2-Dichloroethene (total)	40	39.1	98	72-117
79-01-6	Trichloroethene	20	22.0	110	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	107%	76-122%
2037-26-5	Toluene-D8 (SUR)	98%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	105%	80-120%
1868-53-7	Dibromofluoromethane (S)	107%	80-120%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11239-BS	N266700.D	1	12/15/17	CSF	n/a	n/a	VN11239

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-14, JC56966-19, JC56966-20, JC56966-21, JC56966-23, JC56966-34, JC56966-35, JC56966-36, JC56966-37, JC56966-38, JC56966-39

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	21.0	105	72-115
156-60-5	trans-1,2-Dichloroethene	20	20.3	102	70-121
540-59-0	1,2-Dichloroethene (total)	40	41.3	103	72-117
79-01-6	Trichloroethene	20	22.8	114	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	109%	76-122%
2037-26-5	Toluene-D8 (SUR)	97%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	106%	80-120%
1868-53-7	Dibromofluoromethane (S)	107%	80-120%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11240-BS	N266726.D	1	12/15/17	CSF	n/a	n/a	VN11240

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-24, JC56966-25, JC56966-27, JC56966-29, JC56966-30, JC56966-33

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	19.8	99	72-115
156-60-5	trans-1,2-Dichloroethene	20	19.8	99	70-121
540-59-0	1,2-Dichloroethene (total)	40	39.6	99	72-117
79-01-6	Trichloroethene	20	25.8	129* [a]	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	108%	76-122%
2037-26-5	Toluene-D8 (SUR)	94%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%	80-120%
1868-53-7	Dibromofluoromethane (S)	104%	80-120%

(a) High percent recoveries and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11241-BS	N266751.D	1	12/18/17	CSF	n/a	n/a	VN11241

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-15, JC56966-17, JC56966-26, JC56966-28, JC56966-32

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	18.0	90	72-115
156-60-5	trans-1,2-Dichloroethene	20	17.7	89	70-121
540-59-0	1,2-Dichloroethene (total)	40	35.7	89	72-117
79-01-6	Trichloroethene	20	19.9	100	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%	76-122%
2037-26-5	Toluene-D8 (SUR)	95%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%	80-120%
1868-53-7	Dibromofluoromethane (S)	102%	80-120%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN11243-BS	N266800.D	1	12/19/17	CSF	n/a	n/a	VN11243

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-22

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	18.6	93	72-115
156-60-5	trans-1,2-Dichloroethene	20	17.9	90	70-121
540-59-0	1,2-Dichloroethene (total)	40	36.5	91	72-117
79-01-6	Trichloroethene	20	19.5	98	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	109%	76-122%
2037-26-5	Toluene-D8 (SUR)	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	112%	80-120%
1868-53-7	Dibromofluoromethane (S)	110%	80-120%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, [redacted] Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC57351-4MS	N266709.D	1	12/15/17	CSF	n/a	n/a	VN11239
JC57351-4 [a]	N266704.D	1	12/15/17	CSF	n/a	n/a	VN11239

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-14, JC56966-19, JC56966-20, JC56966-21, JC56966-23, JC56966-34, JC56966-35, JC56966-36, JC56966-37, JC56966-38, JC56966-39

CAS No.	Compound	JC57351-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
156-59-2	cis-1,2-Dichloroethene	ND		20	21.8	109	50-134
156-60-5	trans-1,2-Dichloroethene	ND		20	22.5	113	63-129
540-59-0	1,2-Dichloroethene (total)	ND		40	44.3	111	48-138
79-01-6	Trichloroethene	ND		20	25.4	127	46-145

CAS No.	Surrogate Recoveries	MS	JC57351-4	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	106%	117%	76-122%
2037-26-5	Toluene-D8 (SUR)	97%	94%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	103%	99%	80-120%
1868-53-7	Dibromofluoromethane (S)	99%	110%	80-120%

(a) (pH= 6) Sample is not acid preserved per method/client criteria. Sample analyzed within 3 days holding time as required for acrolein and acrylonitrile. Other compounds within 7 days as required by the method.

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC57328-1MS	N266763.D	1	12/18/17	CSF	n/a	n/a	VN11241
JC57328-1 [a]	N266759.D	1	12/18/17	CSF	n/a	n/a	VN11241

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-15, JC56966-17, JC56966-26, JC56966-28, JC56966-32

CAS No.	Compound	JC57328-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
156-59-2	cis-1,2-Dichloroethene	0.82	J	20	18.1	86	50-134
156-60-5	trans-1,2-Dichloroethene	ND		20	18.5	93	63-129
540-59-0	1,2-Dichloroethene (total)	0.82	J	40	36.5	89	48-138
79-01-6	Trichloroethene	ND		20	19.8	99	46-145

CAS No.	Surrogate Recoveries	MS	JC57328-1	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	102%	114%	76-122%
2037-26-5	Toluene-D8 (SUR)	97%	95%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	104%	100%	80-120%
1868-53-7	Dibromofluoromethane (S)	103%	109%	80-120%

(a) Results reported from the HCl preserved sample. The reported result for acrolein is for screening only and cannot be used for compliance purposes.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC56966-9MS	N266594.D	1	12/13/17	CSF	n/a	n/a	VN11234
JC56966-9MSD	N266595.D	1	12/13/17	CSF	n/a	n/a	VN11234
JC56966-9	N266597.D	1	12/13/17	CSF	n/a	n/a	VN11234

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-1, JC56966-2, JC56966-3, JC56966-4, JC56966-5, JC56966-7, JC56966-8, JC56966-9

CAS No.	Compound	JC56966-9 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	ND		20	21.2	106	20	21.7	109	2	50-134/14
156-60-5	trans-1,2-Dichloroethene	ND		20	20.7	104	20	21.6	108	4	63-129/18
540-59-0	1,2-Dichloroethene (total)	ND		40	41.9	105	40	43.2	108	3	48-138/15
79-01-6	Trichloroethene	ND		20	23.6	118	20	21.8	109	8	46-145/12

CAS No.	Surrogate Recoveries	MS	MSD	JC56966-9	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	110%	106%	100%	76-122%
2037-26-5	Toluene-D8 (SUR)	97%	98%	95%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	105%	103%	80-120%
1868-53-7	Dibromofluoromethane (S)	106%	107%	105%	80-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC56966-31MS	T228717.D	1	12/13/17	CSF	n/a	n/a	VT9393
JC56966-31MSD	T228718.D	1	12/13/17	CSF	n/a	n/a	VT9393
JC56966-31	T228721.D	1	12/13/17	CSF	n/a	n/a	VT9393

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-6, JC56966-10, JC56966-11, JC56966-12, JC56966-13, JC56966-31, JC56966-40

CAS No.	Compound	JC56966-31 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	ND		20	20.9	105	20	20.6	103	1	50-134/14
156-60-5	trans-1,2-Dichloroethene	ND		20	23.2	116	20	22.6	113	3	63-129/18
540-59-0	1,2-Dichloroethene (total)	ND		40	44.1	110	40	43.2	108	2	48-138/15
79-01-6	Trichloroethene	0.30		20	21.0	104	20	20.6	102	2	46-145/12

CAS No.	Surrogate Recoveries	MS	MSD	JC56966-31	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	113%	122%	117%	76-122%
2037-26-5	Toluene-D8 (SUR)	102%	104%	103%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	97%	97%	80-120%
1868-53-7	Dibromofluoromethane (S)	113%	112%	114%	80-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC57306-7MS [a]	N266664.D	5	12/14/17	CSF	n/a	n/a	VN11237
JC57306-7MSD [a]	N266665.D	5	12/14/17	CSF	n/a	n/a	VN11237
JC57306-7 [a]	N266663.D	5	12/14/17	CSF	n/a	n/a	VN11237
JC57306-7 [a]	N266661.D	10	12/14/17	CSF	n/a	n/a	VN11237

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-16, JC56966-18

CAS No.	Compound	JC57306-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	853		100	812	-41* [b]	100	807	-46* [b]	1	50-134/14
156-60-5	trans-1,2-Dichloroethene	ND		100	97.2	97	100	100	100	3	63-129/18
540-59-0	1,2-Dichloroethene (total)	853		200	910	29* [b]	200	908	28* [b]	0	48-138/15
79-01-6	Trichloroethene	1130 [c]		100	956	-174* [b]	100	928	-202* [b]	3	46-145/12

CAS No.	Surrogate Recoveries	MS	MSD	JC57306-7	JC57306-7	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	108%	105%	110%	117%	76-122%
2037-26-5	Toluene-D8 (SUR)	99%	99%	96%	95%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	104%	103%	100%	80-120%
1868-53-7	Dibromofluoromethane (S)	108%	103%	110%	109%	80-120%

(a) (pH= 6) Sample is not acid preserved per method/client criteria. Sample analyzed within 3 days holding time as required for acrolein and acrylonitrile. Other compounds within 7 days as required by the method.
(b) Outside control limits due to high level in sample relative to spike amount.
(c) Result is from Run #2.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC57152-1MS	N266727.D	20	12/15/17	CSF	n/a	n/a	VN11240
JC57152-1MSD	N266728.D	20	12/15/17	CSF	n/a	n/a	VN11240
JC57152-1	N266730.D	20	12/16/17	CSF	n/a	n/a	VN11240
JC57152-1	N266731.D	200	12/16/17	CSF	n/a	n/a	VN11240

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-24, JC56966-25, JC56966-27, JC56966-29, JC56966-30, JC56966-33

CAS No.	Compound	JC57152-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	ND		400	415	104	400	429	107	3	50-134/14
156-60-5	trans-1,2-Dichloroethene	ND		400	406	102	400	403	101	1	63-129/18
540-59-0	1,2-Dichloroethene (total)	ND		800	821	103	800	832	104	1	48-138/15
79-01-6	Trichloroethene	ND		400	465	116	400	459	115	1	46-145/12

CAS No.	Surrogate Recoveries	MS	MSD	JC57152-1	JC57152-1	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	102%	102%	105%	109%	76-122%
2037-26-5	Toluene-D8 (SUR)	96%	97%	94%	93%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%	106%	103%	102%	80-120%
1868-53-7	Dibromofluoromethane (S)	101%	97%	109%	106%	80-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC57103-2MS	N266808.D	20	12/19/17	CSF	n/a	n/a	VN11243
JC57103-2MSD	N266810.D	20	12/19/17	CSF	n/a	n/a	VN11243
JC57103-2 [a]	N266806.D	20	12/19/17	CSF	n/a	n/a	VN11243

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-22

CAS No.	Compound	JC57103-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	ND		400	377	94	400	365	91	3	50-134/14
156-60-5	trans-1,2-Dichloroethene	ND		400	381	95	400	358	90	6	63-129/18
540-59-0	1,2-Dichloroethene (total)	ND		800	759	95	800	723	90	5	48-138/15
79-01-6	Trichloroethene	ND		400	386	97	400	387	97	0	46-145/12

CAS No.	Surrogate Recoveries	MS	MSD	JC57103-2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	101%	97%	107%	76-122%
2037-26-5	Toluene-D8 (SUR)	97%	98%	95%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	110%	107%	106%	80-120%
1868-53-7	Dibromofluoromethane (S)	104%	97%	113%	80-120%

(a) Results reported from the HCl preserved sample. The reported result for acrolein is for screening only and cannot be used for compliance purposes.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC57351-3DUP	N266711.D	1	12/15/17	CSF	n/a	n/a	VN11239
JC57351-3	N266705.D	1	12/15/17	CSF	n/a	n/a	VN11239

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-14, JC56966-19, JC56966-20, JC56966-21, JC56966-23, JC56966-34, JC56966-35, JC56966-36, JC56966-37, JC56966-38, JC56966-39

CAS No.	Compound	JC57351-3 ug/l	Q	DUP ug/l	Q	RPD	Limits
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	22
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	14
540-59-0	1,2-Dichloroethene (total)	ND		ND		nc	22
79-01-6	Trichloroethene	ND		ND		nc	18

CAS No.	Surrogate Recoveries	DUP	JC57351-3	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	111%	113%	76-122%
2037-26-5	Toluene-D8 (SUR)	90%	93%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	102%	80-120%
1868-53-7	Dibromofluoromethane (S)	111%	111%	80-120%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, [redacted] Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC57328-2DUP	N266765.D	1	12/18/17	CSF	n/a	n/a	VN11241
JC57328-2 [a]	N266760.D	1	12/18/17	CSF	n/a	n/a	VN11241

The QC reported here applies to the following samples: **Method:** EPA 624

JC56966-15, JC56966-17, JC56966-26, JC56966-28, JC56966-32

CAS No.	Compound	JC57328-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	22
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	14
540-59-0	1,2-Dichloroethene (total)	ND		ND		nc	22
79-01-6	Trichloroethene	ND		ND		nc	18

CAS No.	Surrogate Recoveries	DUP	JC57328-2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	107%	117%	76-122%
2037-26-5	Toluene-D8 (SUR)	91%	91%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%	101%	80-120%
1868-53-7	Dibromofluoromethane (S)	111%	109%	80-120%

(a) Results reported from the HCl preserved sample. The reported result for acrolein is for screening only and cannot be used for compliance purposes.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11221-BFB	**Injection Date:**	11/30/17
Lab File ID:	N266321.D	**Injection Time:**	18:21
Instrument ID:	GCMSN		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	14190	15.7		Pass
75	30.0 - 60.0% of mass 95	45477	50.2		Pass
95	Base peak, 100% relative abundance	90506	100.0		Pass
96	5.0 - 9.0% of mass 95	6478	7.16		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	82157	90.8		Pass
175	5.0 - 9.0% of mass 174	6550	7.24	(7.97) [a]	Pass
176	95.0 - 101.0% of mass 174	79565	87.9	(96.8) [a]	Pass
177	5.0 - 9.0% of mass 176	5248	5.80	(6.60) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11221-IC11221	N266322.D	11/30/17	19:36	01:15	Initial cal 0.5
VN11221-IC11221	N266323.D	11/30/17	20:10	01:49	Initial cal 0.2
VN11221-IC11221	N266324.D	11/30/17	20:39	02:18	Initial cal 1
VN11221-IC11221	N266325.D	11/30/17	21:08	02:47	Initial cal 2
VN11221-IC11221	N266326.D	11/30/17	21:38	03:17	Initial cal 5
VN11221-ICC11221	N266327.D	11/30/17	22:07	03:46	Initial cal 20
VN11221-IC11221	N266328.D	11/30/17	22:36	04:15	Initial cal 50
VN11221-IC11221	N266329.D	11/30/17	23:06	04:45	Initial cal 100
VN11221-IC11221	N266330.D	11/30/17	23:36	05:15	Initial cal 200
VN11221-ICV11221	N266333.D	12/01/17	01:04	06:43	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11223-BFB	**Injection Date:**	12/04/17
Lab File ID:	N266343.D	**Injection Time:**	14:36
Instrument ID:	GCMSN		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	14951	17.1		Pass
75	30.0 - 60.0% of mass 95	44850	51.2		Pass
95	Base peak, 100% relative abundance	87661	100.0		Pass
96	5.0 - 9.0% of mass 95	5856	6.68		Pass
173	Less than 2.0% of mass 174	539	0.61	(0.69) [a]	Pass
174	50.0 - 120.0% of mass 95	78381	89.4		Pass
175	5.0 - 9.0% of mass 174	6875	7.84	(8.77) [a]	Pass
176	95.0 - 101.0% of mass 174	77560	88.5	(99.0) [a]	Pass
177	5.0 - 9.0% of mass 176	5162	5.89	(6.66) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11223-IC11221	N266344.D	12/04/17	16:53	02:17	Initial cal 0.5
VN11223-IC11221	N266345.D	12/04/17	17:22	02:46	Initial cal 1
VN11223-IC11221	N266346.D	12/04/17	17:51	03:15	Initial cal 2
VN11223-IC11221	N266347.D	12/04/17	18:20	03:44	Initial cal 5
VN11223-IC11221	N266348.D	12/04/17	18:49	04:13	Initial cal 20
VN11223-IC11221	N266349.D	12/04/17	19:19	04:43	Initial cal 50
VN11223-IC11221	N266350.D	12/04/17	19:48	05:12	Initial cal 100
VN11223-IC11221	N266351.D	12/04/17	20:17	05:41	Initial cal 200
VN11223-ICV11221	N266354.D	12/04/17	21:45	07:09	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11233-BFB	**Injection Date:**	12/12/17
Lab File ID:	N266563.D	**Injection Time:**	08:31
Instrument ID:	GCMSN		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	9943	15.7		Pass
75	30.0 - 60.0% of mass 95	29373	46.3		Pass
95	Base peak, 100% relative abundance	63379	100.0		Pass
96	5.0 - 9.0% of mass 95	4125	6.51		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	57347	90.5		Pass
175	5.0 - 9.0% of mass 174	4600	7.26	(8.02) [a]	Pass
176	95.0 - 101.0% of mass 174	55027	86.8	(96.0) [a]	Pass
177	5.0 - 9.0% of mass 176	3808	6.01	(6.92) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11233-CC11221	N266565.D	12/12/17	10:33	02:02	Continuing cal 20
VN11233-MB	N266566.D	12/12/17	11:20	02:49	Method Blank
VN11233-BS	N266567.D	12/12/17	12:02	03:31	Blank Spike
ZZZZZZ	N266568.D	12/12/17	12:32	04:01	(unrelated sample)
ZZZZZZ	N266569.D	12/12/17	13:02	04:31	(unrelated sample)
ZZZZZZ	N266570.D	12/12/17	13:31	05:00	(unrelated sample)
ZZZZZZ	N266571.D	12/12/17	14:01	05:30	(unrelated sample)
ZZZZZZ	N266572.D	12/12/17	14:30	05:59	(unrelated sample)
ZZZZZZ	N266573.D	12/12/17	15:00	06:29	(unrelated sample)
ZZZZZZ	N266575.D	12/12/17	16:11	07:40	(unrelated sample)
ZZZZZZ	N266576.D	12/12/17	16:40	08:09	(unrelated sample)
ZZZZZZ	N266577.D	12/12/17	17:10	08:39	(unrelated sample)
ZZZZZZ	N266578.D	12/12/17	17:39	09:08	(unrelated sample)
ZZZZZZ	N266579.D	12/12/17	18:09	09:38	(unrelated sample)
ZZZZZZ	N266580.D	12/12/17	18:39	10:08	(unrelated sample)
ZZZZZZ	N266581.D	12/12/17	19:08	10:37	(unrelated sample)
ZZZZZZ	N266582.D	12/12/17	19:38	11:07	(unrelated sample)
ZZZZZZ	N266583.D	12/12/17	20:08	11:37	(unrelated sample)
JC56947-1MS	N266584.D	12/12/17	20:37	12:06	Matrix Spike
JC56947-1MSD	N266585.D	12/12/17	21:07	12:36	Matrix Spike Duplicate
ZZZZZZ	N266587.D	12/12/17	22:06	13:35	(unrelated sample)
JC56947-1	N266588.D	12/12/17	22:36	14:05	(used for QC only; not part of job JC56966)
ZZZZZZ	N266589.D	12/12/17	23:05	14:34	(unrelated sample)
ZZZZZZ	N266590.D	12/12/17	23:35	15:04	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11233-BFB	**Injection Date:**	12/12/17
Lab File ID:	N266563.D	**Injection Time:**	08:31
Instrument ID:	GCMSN		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11234-MB	N266592.D	12/13/17	00:34	16:03	Method Blank
VN11234-BS	N266593.D	12/13/17	01:03	16:32	Blank Spike
JC56966-9MS	N266594.D	12/13/17	01:33	17:02	Matrix Spike
JC56966-9MSD	N266595.D	12/13/17	02:02	17:31	Matrix Spike Duplicate
JC56966-9	N266597.D	12/13/17	03:01	18:30	B-8D
JC56966-1	N266598.D	12/13/17	03:30	18:59	B-2I
JC56966-2	N266599.D	12/13/17	04:00	19:29	B-4D
JC56966-3	N266600.D	12/13/17	04:29	19:58	B-4I
JC56966-4	N266601.D	12/13/17	04:58	20:27	B-4S
JC56966-5	N266602.D	12/13/17	05:28	20:57	B-5D
JC56966-7	N266603.D	12/13/17	05:57	21:26	B-6I
JC56966-8	N266604.D	12/13/17	06:27	21:56	B-6S

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11237-BFB	**Injection Date:**	12/14/17
Lab File ID:	N266652.D	**Injection Time:**	08:26
Instrument ID:	GCMSN		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	9848	16.5		Pass
75	30.0 - 60.0% of mass 95	29149	48.9		Pass
95	Base peak, 100% relative abundance	59557	100.0		Pass
96	5.0 - 9.0% of mass 95	4309	7.24		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	56622	95.1		Pass
175	5.0 - 9.0% of mass 174	3824	6.42	(6.75) [a]	Pass
176	95.0 - 101.0% of mass 174	53877	90.5	(95.2) [a]	Pass
177	5.0 - 9.0% of mass 176	4148	6.96	(7.70) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11237-CC11221	N266653.D	12/14/17	09:15	00:49	Continuing cal 20
VN11237-MB	N266654.D	12/14/17	10:00	01:34	Method Blank
VN11237-BS	N266655.D	12/14/17	10:29	02:03	Blank Spike
ZZZZZZ	N266657.D	12/14/17	11:29	03:03	(unrelated sample)
ZZZZZZ	N266658.D	12/14/17	11:58	03:32	(unrelated sample)
ZZZZZZ	N266659.D	12/14/17	12:28	04:02	(unrelated sample)
ZZZZZZ	N266660.D	12/14/17	12:57	04:31	(unrelated sample)
ZZZZZZ	N266661A.D	12/14/17	13:26	05:00	(unrelated sample)
JC57306-7	N266661.D	12/14/17	13:56	05:30	(used for QC only; not part of job JC56966)
ZZZZZZ	N266662.D	12/14/17	14:26	06:00	(unrelated sample)
JC57306-7	N266663.D	12/14/17	15:14	06:48	(used for QC only; not part of job JC56966)
JC57306-7MS	N266664.D	12/14/17	15:43	07:17	Matrix Spike
JC57306-7MSD	N266665.D	12/14/17	16:13	07:47	Matrix Spike Duplicate
ZZZZZZ	N266667.D	12/14/17	17:12	08:46	(unrelated sample)
ZZZZZZ	N266668.D	12/14/17	17:41	09:15	(unrelated sample)
ZZZZZZ	N266669.D	12/14/17	18:11	09:45	(unrelated sample)
ZZZZZZ	N266670.D	12/14/17	18:40	10:14	(unrelated sample)
ZZZZZZ	N266671.D	12/14/17	19:09	10:43	(unrelated sample)
ZZZZZZ	N266672.D	12/14/17	19:39	11:13	(unrelated sample)
ZZZZZZ	N266673.D	12/14/17	20:08	11:42	(unrelated sample)
ZZZZZZ	N266674.D	12/14/17	20:37	12:11	(unrelated sample)
ZZZZZZ	N266675.D	12/14/17	21:07	12:41	(unrelated sample)
ZZZZZZ	N266676.D	12/14/17	21:36	13:10	(unrelated sample)
JC56966-16	N266679.D	12/14/17	23:04	14:38	B-18

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11237-BFB	**Injection Date:**	12/14/17
Lab File ID:	N266652.D	**Injection Time:**	08:26
Instrument ID:	GCMSN		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JC56966-18	N266680.D	12/14/17	23:33	15:07	C-1D
ZZZZZZ	N266681.D	12/15/17	00:03	15:37	(unrelated sample)
ZZZZZZ	N266682.D	12/15/17	00:32	16:06	(unrelated sample)
ZZZZZZ	N266683.D	12/15/17	01:01	16:35	(unrelated sample)
VN11238-MB	N266685.D	12/15/17	02:00	17:34	Method Blank
VN11238-BS	N266686.D	12/15/17	02:29	18:03	Blank Spike
JC57260-1MS	N266687.D	12/15/17	02:58	18:32	Matrix Spike
JC57260-1MSD	N266688.D	12/15/17	03:28	19:02	Matrix Spike Duplicate
ZZZZZZ	N266690.D	12/15/17	04:26	20:00	(unrelated sample)
ZZZZZZ	N266691.D	12/15/17	04:55	20:29	(unrelated sample)
JC57260-1	N266692.D	12/15/17	05:25	20:59	(used for QC only; not part of job JC56966)

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, [NON RESPONSIVE] Zanesville, OH

Sample: VN11239-BFB
Lab File ID: N266696.D
Instrument ID: GCMSN
Injection Date: 12/15/17
Injection Time: 07:22

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	11311	18.6		Pass
75	30.0 - 60.0% of mass 95	30371	49.9		Pass
95	Base peak, 100% relative abundance	60851	100.0		Pass
96	5.0 - 9.0% of mass 95	3667	6.03		Pass
173	Less than 2.0% of mass 174	248	0.41	(0.46) [a]	Pass
174	50.0 - 120.0% of mass 95	54397	89.4		Pass
175	5.0 - 9.0% of mass 174	4447	7.31	(8.18) [a]	Pass
176	95.0 - 101.0% of mass 174	52725	86.6	(96.9) [a]	Pass
177	5.0 - 9.0% of mass 176	3528	5.80	(6.69) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11239-CC11221	N266697.D	12/15/17	08:15	00:53	Continuing cal 20
VN11239-MB	N266698.D	12/15/17	08:59	01:37	Method Blank
ZZZZZZ	N266699.D	12/15/17	09:29	02:07	(unrelated sample)
VN11239-BS	N266700.D	12/15/17	09:58	02:36	Blank Spike
ZZZZZZ	N266702.D	12/15/17	10:58	03:36	(unrelated sample)
ZZZZZZ	N266703.D	12/15/17	11:27	04:05	(unrelated sample)
JC57351-4	N266704.D	12/15/17	11:58	04:36	(used for QC only; not part of job JC56966)
JC57351-3	N266705.D	12/15/17	12:28	05:06	(used for QC only; not part of job JC56966)
ZZZZZZ	N266706.D	12/15/17	12:57	05:35	(unrelated sample)
ZZZZZZ	N266707.D	12/15/17	13:27	06:05	(unrelated sample)
JC56966-34	N266708.D	12/15/17	13:56	06:34	SM-1
JC57351-4MS	N266709.D	12/15/17	14:25	07:03	Matrix Spike
JC57351-3DUP	N266711.D	12/15/17	15:24	08:02	Duplicate
ZZZZZZ	N266712.D	12/15/17	15:54	08:32	(unrelated sample)
ZZZZZZ	N266713.D	12/15/17	16:23	09:01	(unrelated sample)
JC56966-14	N266714.D	12/15/17	16:52	09:30	B-13D
JC56966-36	N266715.D	12/15/17	17:22	10:00	W-6
JC56966-35	N266716.D	12/15/17	17:51	10:29	SM-2
JC56966-37	N266717.D	12/15/17	18:20	10:58	W-7
JC56966-38	N266718.D	12/15/17	18:50	11:28	W-12
JC56966-39	N266719.D	12/15/17	19:19	11:57	DUP-04
JC56966-19	N266720.D	12/15/17	19:49	12:27	C-1I
JC56966-20	N266721.D	12/15/17	20:18	12:56	C-1S
JC56966-21	N266722.D	12/15/17	20:47	13:25	C-2D

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11239-BFB	**Injection Date:**	12/15/17
Lab File ID:	N266696.D	**Injection Time:**	07:22
Instrument ID:	GCMSN		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JC56966-23	N266723.D	12/15/17	21:17	13:55	C-2I
VN11240-MB	N266725.D	12/15/17	22:15	14:53	Method Blank
VN11240-BS	N266726.D	12/15/17	22:45	15:23	Blank Spike
JC57152-1MS	N266727.D	12/15/17	23:14	15:52	Matrix Spike
JC57152-1MSD	N266728.D	12/15/17	23:43	16:21	Matrix Spike Duplicate
JC57152-1	N266730.D	12/16/17	00:42	17:20	(used for QC only; not part of job JC56966)
JC57152-1	N266731.D	12/16/17	01:11	17:49	(used for QC only; not part of job JC56966)
ZZZZZZ	N266732.D	12/16/17	01:41	18:19	(unrelated sample)
JC56966-24	N266733.D	12/16/17	02:10	18:48	C-2S
JC56966-25	N266734.D	12/16/17	02:40	19:18	C-3D
JC56966-27	N266736.D	12/16/17	03:38	20:16	C-3S
JC56966-29	N266738.D	12/16/17	04:37	21:15	C-8
JC56966-30	N266739.D	12/16/17	05:06	21:44	C-9
JC56966-33	N266741.D	12/16/17	06:05	22:43	DUP-01

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11241-BFB	**Injection Date:**	12/18/17
Lab File ID:	N266748.D	**Injection Time:**	08:44
Instrument ID:	GCMSN		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	9957	18.5		Pass
75	30.0 - 60.0% of mass 95	27555	51.2		Pass
95	Base peak, 100% relative abundance	53789	100.0		Pass
96	5.0 - 9.0% of mass 95	3800	7.06		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	46221	85.9		Pass
175	5.0 - 9.0% of mass 174	3891	7.23	(8.42) [a]	Pass
176	95.0 - 101.0% of mass 174	44277	82.3	(95.8) [a]	Pass
177	5.0 - 9.0% of mass 176	3353	6.23	(7.57) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11241-CC11221	N266749.D	12/18/17	09:36	00:52	Continuing cal 20
VN11241-MB	N266750.D	12/18/17	10:19	01:35	Method Blank
VN11241-BS	N266751.D	12/18/17	10:48	02:04	Blank Spike
JC56966-17	N266753.D	12/18/17	11:47	03:03	B-23I/D
JC56966-26	N266754.D	12/18/17	12:17	03:33	C-3I
JC56966-28	N266755.D	12/18/17	12:46	04:02	C-6
JC56966-32	N266756.D	12/18/17	13:16	04:32	C-10D
JC56966-15	N266757.D	12/18/17	13:45	05:01	B-16
JC56966-15	N266758.D	12/18/17	14:24	05:40	B-16
JC57328-1	N266759.D	12/18/17	14:54	06:10	(used for QC only; not part of job JC56966)
JC57328-2	N266760.D	12/18/17	15:23	06:39	(used for QC only; not part of job JC56966)
ZZZZZZ	N266761.D	12/18/17	15:52	07:08	(unrelated sample)
ZZZZZZ	N266762.D	12/18/17	16:21	07:37	(unrelated sample)
JC57328-1MS	N266763.D	12/18/17	17:01	08:17	Matrix Spike
JC57328-2DUP	N266765.D	12/18/17	17:59	09:15	Duplicate
ZZZZZZ	N266766.D	12/18/17	18:29	09:45	(unrelated sample)
ZZZZZZ	N266767.D	12/18/17	18:59	10:15	(unrelated sample)
ZZZZZZ	N266768.D	12/18/17	19:28	10:44	(unrelated sample)
ZZZZZZ	N266769.D	12/18/17	19:58	11:14	(unrelated sample)
ZZZZZZ	N266770.D	12/18/17	20:27	11:43	(unrelated sample)
ZZZZZZ	N266771.D	12/18/17	20:57	12:13	(unrelated sample)
ZZZZZZ	N266772.D	12/18/17	21:27	12:43	(unrelated sample)
ZZZZZZ	N266773.D	12/18/17	21:57	13:13	(unrelated sample)
ZZZZZZ	N266774.D	12/18/17	22:26	13:42	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11241-BFB	**Injection Date:**	12/18/17
Lab File ID:	N266748.D	**Injection Time:**	08:44
Instrument ID:	GCMSN		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	N266775.D	12/18/17	22:56	14:12	(unrelated sample)
ZZZZZZ	N266776.D	12/18/17	23:26	14:42	(unrelated sample)
VN11242-MB	N266779.D	12/19/17	00:25	15:41	Method Blank
VN11242-BS	N266780.D	12/19/17	00:55	16:11	Blank Spike
JC57103-1MS	N266781.D	12/19/17	01:25	16:41	Matrix Spike
JC57103-1MSD	N266782.D	12/19/17	01:55	17:11	Matrix Spike Duplicate
ZZZZZZ	N266784.D	12/19/17	02:54	18:10	(unrelated sample)
JC57103-1	N266784A.D	12/19/17	03:24	18:40	(used for QC only; not part of job JC56966)
ZZZZZZ	N266786.D	12/19/17	04:23	19:39	(unrelated sample)
ZZZZZZ	N266787.D	12/19/17	04:53	20:09	(unrelated sample)
ZZZZZZ	N266788.D	12/19/17	05:23	20:39	(unrelated sample)
ZZZZZZ	N266790.D	12/19/17	06:46	22:02	(unrelated sample)
ZZZZZZ	N266791.D	12/19/17	07:15	22:31	(unrelated sample)
ZZZZZZ	N266792.D	12/19/17	07:45	23:01	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VN11243-BFB	**Injection Date:**	12/19/17
Lab File ID:	N266797.D	**Injection Time:**	10:22
Instrument ID:	GCMSN		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	11006	17.8		Pass
75	30.0 - 60.0% of mass 95	32347	52.4		Pass
95	Base peak, 100% relative abundance	61715	100.0		Pass
96	5.0 - 9.0% of mass 95	3986	6.46		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	50382	81.6		Pass
175	5.0 - 9.0% of mass 174	4120	6.68	(8.18) [a]	Pass
176	95.0 - 101.0% of mass 174	50117	81.2	(99.5) [a]	Pass
177	5.0 - 9.0% of mass 176	3319	5.38	(6.62) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VN11243-CC11221	N266798.D	12/19/17	11:04	00:42	Continuing cal 20
VN11243-MB	N266799.D	12/19/17	11:46	01:24	Method Blank
VN11243-BS	N266800.D	12/19/17	12:16	01:54	Blank Spike
ZZZZZZ	N266801.D	12/19/17	13:04	02:42	(unrelated sample)
JC56966-22	N266802.D	12/19/17	13:34	03:12	DUP-03
JC56966-22	N266803.D	12/19/17	14:38	04:16	DUP-03
ZZZZZZ	N266804.D	12/19/17	15:07	04:45	(unrelated sample)
ZZZZZZ	N266805.D	12/19/17	15:37	05:15	(unrelated sample)
JC57103-2	N266806.D	12/19/17	16:06	05:44	(used for QC only; not part of job JC56966)
ZZZZZZ	N266807.D	12/19/17	16:35	06:13	(unrelated sample)
JC57103-2MS	N266808.D	12/19/17	17:57	07:35	Matrix Spike
JC57103-2MSD	N266810.D	12/19/17	18:26	08:04	Matrix Spike Duplicate
ZZZZZZ	N266812A.D	12/19/17	19:25	09:03	(unrelated sample)
ZZZZZZ	N266812.D	12/19/17	19:55	09:33	(unrelated sample)
ZZZZZZ	N266813.D	12/19/17	20:25	10:03	(unrelated sample)
ZZZZZZ	N266814.D	12/19/17	20:55	10:33	(unrelated sample)
ZZZZZZ	N266815.D	12/19/17	21:25	11:03	(unrelated sample)
ZZZZZZ	N266816.D	12/19/17	21:55	11:33	(unrelated sample)
ZZZZZZ	N266817.D	12/19/17	22:25	12:03	(unrelated sample)
ZZZZZZ	N266818.D	12/19/17	22:55	12:33	(unrelated sample)
ZZZZZZ	N266819.D	12/19/17	23:25	13:03	(unrelated sample)
ZZZZZZ	N266820.D	12/19/17	23:55	13:33	(unrelated sample)
ZZZZZZ	N266821.D	12/20/17	00:25	14:03	(unrelated sample)
ZZZZZZ	N266822.D	12/20/17	00:55	14:33	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample: VT9358-BFB
Lab File ID: T227846.D
Instrument ID: GCMST
Injection Date: 11/08/17
Injection Time: 22:57

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	8276	16.9		Pass
75	30.0 - 60.0% of mass 95	21912	44.7		Pass
95	Base peak, 100% relative abundance	48970	100.0		Pass
96	5.0 - 9.0% of mass 95	3293	6.72		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	42536	86.9		Pass
175	5.0 - 9.0% of mass 174	3355	6.85	(7.89) [a]	Pass
176	95.0 - 101.0% of mass 174	41240	84.2	(97.0) [a]	Pass
177	5.0 - 9.0% of mass 176	2582	5.27	(6.26) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9358-IC9358	T227848.D	11/09/17	00:42	01:45	Initial cal 0.5
VT9358-IC9358	T227849.D	11/09/17	01:21	02:24	Initial cal 0.2
VT9358-IC9358	T227850.D	11/09/17	01:50	02:53	Initial cal 1
VT9358-IC9358	T227851.D	11/09/17	02:20	03:23	Initial cal 2
VT9358-IC9358	T227852.D	11/09/17	02:50	03:53	Initial cal 5
VT9358-ICC9358	T227853.D	11/09/17	03:20	04:23	Initial cal 20
VT9358-IC9358	T227854.D	11/09/17	03:50	04:53	Initial cal 50
VT9358-IC9358	T227855.D	11/09/17	04:20	05:23	Initial cal 100
VT9358-IC9358	T227856.D	11/09/17	04:50	05:53	Initial cal 200
VT9358-ICV9358	T227859.D	11/09/17	06:20	07:23	Initial cal verification 20
VT9358-ICV9358	T227860.D	11/09/17	06:50	07:53	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VT9392-BFB	**Injection Date:**	12/12/17
Lab File ID:	T228685.D	**Injection Time:**	07:19
Instrument ID:	GCMST		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12181	17.8		Pass
75	30.0 - 60.0% of mass 95	31117	45.6		Pass
95	Base peak, 100% relative abundance	68264	100.0		Pass
96	5.0 - 9.0% of mass 95	4629	6.78		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	54211	79.4		Pass
175	5.0 - 9.0% of mass 174	3795	5.56	(7.00) [a]	Pass
176	95.0 - 101.0% of mass 174	52485	76.9	(96.8) [a]	Pass
177	5.0 - 9.0% of mass 176	3367	4.93	(6.42) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9392-CC9358	T228686.D	12/12/17	07:49	00:30	Continuing cal 20
VT9392-MB	T228687.D	12/12/17	08:37	01:18	Method Blank
VT9392-BS	T228689.D	12/12/17	10:19	03:00	Blank Spike
ZZZZZZ	T228691.D	12/12/17	11:38	04:19	(unrelated sample)
ZZZZZZ	T228692.D	12/12/17	12:31	05:12	(unrelated sample)
ZZZZZZ	T228693.D	12/12/17	14:15	06:56	(unrelated sample)
ZZZZZZ	T228694.D	12/12/17	14:45	07:26	(unrelated sample)
ZZZZZZ	T228695.D	12/12/17	15:15	07:56	(unrelated sample)
ZZZZZZ	T228696.D	12/12/17	15:46	08:27	(unrelated sample)
ZZZZZZ	T228697.D	12/12/17	16:16	08:57	(unrelated sample)
ZZZZZZ	T228699.D	12/12/17	17:16	09:57	(unrelated sample)
JC56811-1MS	T228701.D	12/12/17	18:16	10:57	Matrix Spike
JC56811-1MSD	T228702.D	12/12/17	18:47	11:28	Matrix Spike Duplicate
ZZZZZZ	T228704.D	12/12/17	19:47	12:28	(unrelated sample)
ZZZZZZ	T228705.D	12/12/17	20:17	12:58	(unrelated sample)
ZZZZZZ	T228706.D	12/12/17	20:48	13:29	(unrelated sample)
JC56811-1	T228707.D	12/12/17	21:18	13:59	(used for QC only; not part of job JC56966)
ZZZZZZ	T228708.D	12/12/17	21:48	14:29	(unrelated sample)
ZZZZZZ	T228709.D	12/12/17	22:19	15:00	(unrelated sample)
ZZZZZZ	T228710.D	12/12/17	22:49	15:30	(unrelated sample)
ZZZZZZ	T228711.D	12/12/17	23:19	16:00	(unrelated sample)
ZZZZZZ	T228712.D	12/12/17	23:49	16:30	(unrelated sample)
ZZZZZZ	T228713.D	12/13/17	00:20	17:01	(unrelated sample)
VT9393-MB	T228715.D	12/13/17	01:20	18:01	Method Blank

Instrument Performance Check (BFB)

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Sample:	VT9392-BFB	**Injection Date:**	12/12/17
Lab File ID:	T228685.D	**Injection Time:**	07:19
Instrument ID:	GCMST		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9393-BS	T228716.D	12/13/17	01:50	18:31	Blank Spike
JC56966-31MS	T228717.D	12/13/17	02:20	19:01	Matrix Spike
JC56966-31MSD	T228718.D	12/13/17	02:50	19:31	Matrix Spike Duplicate
JC56966-40	T228720.D	12/13/17	03:51	20:32	TRIP BLANK
JC56966-31	T228721.D	12/13/17	04:21	21:02	C-11I
JC56966-6	T228722.D	12/13/17	04:51	21:32	B-5I
JC56966-10	T228723.D	12/13/17	05:21	22:02	B-8I
JC56966-11	T228724.D	12/13/17	05:51	22:32	DUP-02
JC56966-12	T228725.D	12/13/17	06:21	23:02	B-8S
JC56966-13	T228726.D	12/13/17	06:52	23:33	B-9S

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std: VN11233-CC11221 **Injection Date:** 12/12/17
Lab File ID: N266565.D **Injection Time:** 10:33
Instrument ID: GCMSN **Method:** EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	107497	7.72	179459	10.05	243427	10.99	167370	16.75	231472	14.26
Upper Limit [a]	214994	8.22	358918	10.55	486854	11.49	334740	17.25	462944	14.76
Lower Limit [b]	53749	7.22	89730	9.55	121714	10.49	83685	16.25	115736	13.76

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VN11233-MB	117343	7.72	161907	10.05	222995	10.98	151456	16.76	214769	14.26
VN11233-BS	115127	7.71	177658	10.05	245391	10.99	171679	16.76	237278	14.26
ZZZZZZ	108709	7.72	164046	10.06	225230	10.98	156437	16.75	216564	14.25
ZZZZZZ	97985	7.69	154207	10.05	217125	10.98	153489	16.75	205583	14.25
ZZZZZZ	108753	7.73	172288	10.05	237213	10.99	154267	16.75	218244	14.25
ZZZZZZ	99405	7.70	164052	10.05	215422	10.98	149216	16.75	203747	14.25
ZZZZZZ	92361	7.71	148249	10.05	207172	10.99	145356	16.75	200137	14.25
ZZZZZZ	101848	7.72	155896	10.06	210222	10.98	147297	16.76	202892	14.26
ZZZZZZ	105971	7.71	163273	10.06	220430	10.99	147010	16.76	206256	14.26
ZZZZZZ	96198	7.70	168824	10.05	216568	10.98	150855	16.76	204957	14.26
ZZZZZZ	95722	7.72	156608	10.05	211895	10.98	155882	16.75	206054	14.25
ZZZZZZ	134113	7.72	152932	10.06	211180	10.98	144575	16.76	198539	14.25
ZZZZZZ	107089	7.70	146266	10.05	206077	10.98	145493	16.75	198345	14.25
ZZZZZZ	131226	7.70	151083	10.05	209363	10.99	150767	16.75	200325	14.25
ZZZZZZ	126729	7.70	151264	10.05	213879	10.98	141424	16.76	202717	14.26
ZZZZZZ	130585	7.74	149299	10.05	206592	10.99	148668	16.75	197585	14.25
ZZZZZZ	129560	7.71	151910	10.05	204650	10.99	153815	16.75	202055	14.25
JC56947-1MS	95744	7.71	169663	10.05	230582	10.98	169609	16.76	225509	14.26
JC56947-1MSD	103492	7.72	172419	10.05	238470	10.98	178219	16.75	228206	14.25
ZZZZZZ	96178	7.71	151204	10.05	209900	10.98	148042	16.76	207935	14.26
JC56947-1	93429	7.69	148340	10.05	206406	10.98	144862	16.75	204273	14.25
ZZZZZZ	99217	7.70	154800	10.05	206243	10.98	146617	16.76	200919	14.26
ZZZZZZ	98329	7.72	154091	10.05	209313	10.99	148176	16.75	200243	14.25
VN11234-MB	100191	7.70	156026	10.05	203515	10.98	151908	16.76	198016	14.26
VN11234-BS	98913	7.70	164854	10.05	220519	10.98	162419	16.76	209656	14.26
JC56966-9MS	114408	7.71	175238	10.05	232877	10.98	172571	16.75	226887	14.25
JC56966-9MSD	114203	7.71	182148	10.05	251484	10.98	170941	16.75	236281	14.25
JC56966-9	137272	7.71	341841	10.05	468588	10.98	320397	16.75	438498	14.25
JC56966-1	108739	7.71	156632	10.05	217205	10.98	153340	16.76	206951	14.25
JC56966-2	103913	7.71	159982	10.05	214876	10.98	153011	16.75	205052	14.25
JC56966-3	101704	7.72	149688	10.05	208892	10.99	148036	16.75	203063	14.25
JC56966-4	134160	7.72	156064	10.05	208835	10.98	144780	16.76	197388	14.26
JC56966-5	109648	7.71	158700	10.05	215921	10.98	150421	16.76	198527	14.26
JC56966-7	119424	7.73	162636	10.06	211647	10.98	144749	16.75	205754	14.25
JC56966-8	94188	7.72	158689	10.05	210903	10.98	144720	16.76	200950	14.25

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std:	VN11233-CC11221	**Injection Date:**	12/12/17
Lab File ID:	N266565.D	**Injection Time:**	10:33
Instrument ID:	GCMSN	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT	IS 5 AREA	IS 5 RT

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std: VN11237-CC11221 **Injection Date:** 12/14/17
Lab File ID: N266653.D **Injection Time:** 09:15
Instrument ID: GCMSN **Method:** EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	96656	7.73	162190	10.05	223018	10.99	160179	16.76	216742	14.26
Upper Limit [a]	193312	8.23	324380	10.55	446036	11.49	320358	17.26	433484	14.76
Lower Limit [b]	48328	7.23	81095	9.55	111509	10.49	80090	16.26	108371	13.76

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VN11237-MB	91381	7.72	151192	10.06	206226	10.99	136815	16.76	195969	14.26
VN11237-BS	103314	7.74	165916	10.05	226983	10.99	158370	16.76	213183	14.26
ZZZZZZ	80689	7.71	149649	10.05	202155	10.99	134163	16.75	199188	14.25
ZZZZZZ	93047	7.72	147955	10.05	205084	10.98	141033	16.75	191735	14.25
ZZZZZZ	102207	7.72	153674	10.05	206164	10.98	140337	16.76	206000	14.26
ZZZZZZ	85627	7.71	151541	10.05	199508	10.98	134615	16.76	189420	14.25
ZZZZZZ	82956	7.71	148518	10.05	197218	10.98	136444	16.75	194194	14.25
JC57306-7	89563	7.70	155025	10.05	201490	10.98	133442	16.76	186784	14.26
ZZZZZZ	83133	7.72	151975	10.05	198878	10.98	138128	16.75	188070	14.25
JC57306-7	81220	7.71	147554	10.05	202294	10.98	132161	16.76	186127	14.26
JC57306-7MS [c]	91147	7.71	167727	10.05	226269	10.98	159830	16.76	209718	14.26
JC57306-7MSD [c]	94470	7.71	165848	10.05	232658	10.98	155416	16.76	210919	14.26
ZZZZZZ	89795	7.70	147015	10.05	203005	10.98	142076	16.75	195920	14.25
ZZZZZZ	93158	7.72	150682	10.05	207150	10.98	147429	16.75	199195	14.26
ZZZZZZ	83872	7.72	142853	10.05	194904	10.98	138055	16.75	188415	14.25
ZZZZZZ	86316	7.71	145543	10.05	193937	10.98	137426	16.76	190951	14.26
ZZZZZZ	84047	7.71	151377	10.05	194270	10.98	138112	16.76	183833	14.26
ZZZZZZ	89721	7.72	145984	10.05	194321	10.98	140348	16.75	186644	14.26
ZZZZZZ	83448	7.71	137634	10.05	180121	10.98	132807	16.75	176199	14.25
ZZZZZZ	117143	7.71	151593	10.05	196964	10.98	137662	16.76	186496	14.26
ZZZZZZ	124829	7.70	148996	10.05	193071	10.98	141560	16.76	190908	14.25
ZZZZZZ	126221	7.71	148631	10.05	199685	10.98	141904	16.75	184700	14.25
JC56966-16	91347	7.72	143163	10.05	198331	10.98	134006	16.75	186694	14.25
JC56966-18	114095	7.71	143129	10.05	193562	10.98	137934	16.75	184143	14.25
ZZZZZZ	83785	7.71	141695	10.05	195177	10.99	137108	16.75	188349	14.25
ZZZZZZ	74521	7.70	133990	10.05	184308	10.98	128612	16.75	178889	14.25
ZZZZZZ	82633	7.70	138790	10.05	194031	10.98	133177	16.75	180093	14.25
VN11238-MB	80083	7.70	135569	10.05	185640	10.98	133320	16.75	177657	14.25
VN11238-BS	87251	7.71	149545	10.05	206401	10.98	153081	16.75	203076	14.25
JC57260-1MS	108962	7.69	167090	10.05	229137	10.98	157292	16.75	211938	14.25
JC57260-1MSD	110935	7.71	169574	10.05	238386	10.98	162727	16.75	220977	14.26
ZZZZZZ	88944	7.70	154130	10.05	212052	10.98	147548	16.75	202957	14.25
ZZZZZZ	90227	7.70	149883	10.05	206527	10.98	146564	16.76	204614	14.26
JC57260-1	95386	7.70	160416	10.05	205620	10.98	144497	16.76	198891	14.26

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std:	VN11237-CC11221	**Injection Date:**	12/14/17
Lab File ID:	N266653.D	**Injection Time:**	09:15
Instrument ID:	GCMSN	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT	IS 5 AREA	IS 5 RT

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) (pH= 6) Sample is not acid preserved per method/client criteria. Sample analyzed within 3 days holding time as required for acrolein and acrylonitrile. Other compounds within 7 days as required by the method.

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std: VN11239-CC11221 **Injection Date:** 12/15/17
Lab File ID: N266697.D **Injection Time:** 08:15
Instrument ID: GCMSN **Method:** EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	86918	7.72	153628	10.05	215048	10.99	158654	16.75	208105	14.25
Upper Limit [a]	173836	8.22	307256	10.55	430096	11.49	317308	17.25	416210	14.75
Lower Limit [b]	43459	7.22	76814	9.55	107524	10.49	79327	16.25	104053	13.75

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VN11239-MB	90831	7.71	144468	10.05	200375	10.99	139741	16.76	187348	14.26
ZZZZZZ	68401	7.70	148125	10.05	200138	10.98	133378	16.75	188866	14.25
VN11239-BS	83884	7.70	148847	10.05	212472	10.98	151814	16.75	203622	14.25
ZZZZZZ	77404	7.71	139975	10.05	190870	10.98	137275	16.76	185098	14.25
ZZZZZZ	81463	7.71	138584	10.05	188920	10.98	133256	16.75	182852	14.25
JC57351-4	79142	7.70	141494	10.05	189291	10.98	128510	16.75	180489	14.25
JC57351-3	75334	7.70	143004	10.05	195656	10.98	136621	16.75	187789	14.25
ZZZZZZ	78716	7.69	134653	10.05	189360	10.98	136764	16.75	185264	14.25
ZZZZZZ	72562	7.70	134739	10.05	182966	10.98	133897	16.75	174924	14.25
JC56966-34	74625	7.69	138260	10.05	186767	10.98	134129	16.75	184451	14.25
JC57351-4MS	78511	7.71	158940	10.05	214302	10.98	152699	16.76	205980	14.25
JC57351-3DUP	80776	7.71	142083	10.05	196385	10.98	141090	16.75	192461	14.25
ZZZZZZ	72102	7.70	134869	10.05	184597	10.98	125049	16.75	176070	14.25
ZZZZZZ	71774	7.69	130094	10.05	180852	10.98	133581	16.75	177443	14.25
JC56966-14	72480	7.69	134438	10.05	185848	10.98	131550	16.76	177139	14.26
JC56966-36	78678	7.70	139969	10.05	188814	10.98	135075	16.76	186410	14.26
JC56966-35	76525	7.69	130870	10.05	180883	10.98	129034	16.75	175501	14.25
JC56966-37	76461	7.70	134477	10.05	183015	10.98	129469	16.75	173561	14.26
JC56966-38	73631	7.70	126390	10.05	174768	10.98	127499	16.75	167594	14.25
JC56966-39	71632	7.71	127781	10.05	174387	10.98	124767	16.75	168115	14.25
JC56966-19	69200	7.70	126172	10.05	170980	10.98	121999	16.75	164409	14.25
JC56966-20	72507	7.69	125342	10.05	174460	10.98	125071	16.76	171534	14.26
JC56966-21	67293	7.70	126336	10.05	176760	10.98	122478	16.75	169134	14.26
JC56966-23	74039	7.71	125864	10.05	172174	10.98	122654	16.76	168187	14.25
VN11240-MB	75864	7.71	131918	10.05	177618	10.98	128010	16.75	175220	14.25
VN11240-BS	79972	7.70	142529	10.05	193197	10.98	142384	16.75	189501	14.25
JC57152-1MS	88099	7.70	147539	10.05	208777	10.98	149225	16.75	197765	14.25
JC57152-1MSD	88496	7.71	162108	10.05	223720	10.98	152425	16.76	207076	14.26
JC57152-1	88748	7.70	145753	10.05	207627	10.98	148284	16.75	198332	14.26
JC57152-1	86730	7.70	146734	10.05	196575	10.98	147832	16.75	194045	14.25
ZZZZZZ	86251	7.71	144684	10.05	199268	10.98	143777	16.75	192027	14.25
JC56966-24	79176	7.70	137211	10.05	188444	10.98	139755	16.75	181850	14.26
JC56966-25	77984	7.70	132336	10.05	183704	10.98	133644	16.75	180953	14.25
JC56966-27	81650	7.72	135998	10.05	180582	10.98	138726	16.75	183527	14.25
JC56966-29	76493	7.71	130436	10.05	174540	10.98	130372	16.75	175769	14.25

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std:	VN11239-CC11221	**Injection Date:**	12/15/17
Lab File ID:	N266697.D	**Injection Time:**	08:15
Instrument ID:	GCMSN	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
JC56966-30	73609	7.70	127973	10.05	175262	10.98	126676	16.75	170249	14.25
JC56966-33	84052	7.71	130473	10.05	176433	10.98	130939	16.76	176764	14.26

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std: VN11241-CC11221 **Injection Date:** 12/18/17
Lab File ID: N266749.D **Injection Time:** 09:36
Instrument ID: GCMSN **Method:** EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	78904	7.71	156774	10.06	212949	10.98	142557	16.76	196045	14.26
Upper Limit [a]	157808	8.21	313548	10.56	425898	11.48	285114	17.26	392090	14.76
Lower Limit [b]	39452	7.21	78387	9.56	106475	10.48	71279	16.26	98023	13.76

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VN11241-MB	75667	7.72	139529	10.05	187604	10.99	128876	16.75	180877	14.25
VN11241-BS	76785	7.71	151368	10.05	199485	10.98	145962	16.75	198367	14.25
JC56966-17	61414	7.69	136633	10.05	186484	10.98	125909	16.76	178599	14.25
JC56966-26	66732	7.70	140268	10.05	190477	10.98	127880	16.75	180751	14.25
JC56966-28	66410	7.71	134212	10.05	186409	10.98	127963	16.75	177015	14.25
JC56966-32	70293	7.71	138509	10.05	186542	10.98	128784	16.75	179811	14.25
JC56966-15	73344	7.70	138459	10.05	186802	10.98	119800	16.75	173245	14.25
JC56966-15	68023	7.71	130740	10.05	175500	10.98	120853	16.76	172293	14.26
JC57328-1	69378	7.71	131044	10.05	174700	10.98	128011	16.75	169617	14.25
JC57328-2	69103	7.70	132700	10.05	171301	10.98	127956	16.75	178681	14.25
ZZZZZZ	63492	7.70	125891	10.05	172292	10.98	124214	16.76	172723	14.25
ZZZZZZ	65982	7.69	138130	10.05	180598	10.98	129939	16.76	172037	14.25
JC57328-1MS	61556	7.72	142423	10.05	193673	10.99	137924	16.75	187450	14.25
JC57328-2DUP	63252	7.69	134424	10.05	182980	10.98	132664	16.76	172926	14.26
ZZZZZZ	65644	7.71	130504	10.05	175897	10.99	128375	16.75	169677	14.25
ZZZZZZ	65885	7.70	129182	10.05	174740	10.98	124667	16.75	173318	14.25
ZZZZZZ	66158	7.71	127000	10.05	173487	10.98	125556	16.75	174322	14.25
ZZZZZZ	66782	7.70	133749	10.05	176996	10.98	125731	16.75	173098	14.26
ZZZZZZ	72816	7.70	131513	10.05	175754	10.98	125057	16.75	173607	14.26
ZZZZZZ	82444	7.69	124096	10.05	171389	10.98	120215	16.76	169124	14.26
ZZZZZZ	66394	7.70	130090	10.05	176577	10.98	125447	16.75	170129	14.25
ZZZZZZ	85316	7.70	153737	10.05	212650	10.98	142487	16.75	201472	14.25
ZZZZZZ	73699	7.71	140666	10.05	192024	10.98	132902	16.76	183740	14.26
ZZZZZZ	74954	7.70	139226	10.05	190021	10.98	130882	16.75	184227	14.25
ZZZZZZ	74229	7.71	149524	10.05	197456	10.98	128981	16.75	185557	14.25
VN11242-MB	71205	7.70	134529	10.05	182522	10.98	125425	16.75	174756	14.25
VN11242-BS	81106	7.71	154068	10.05	213493	10.98	149098	16.76	200616	14.25
JC57103-1MS	83042	7.72	158997	10.05	218997	10.98	152770	16.75	202340	14.25
JC57103-1MSD	87643	7.71	164967	10.05	226282	10.98	158107	16.75	213952	14.25
ZZZZZZ	83719	7.69	151962	10.05	206557	10.98	142431	16.76	195840	14.26
JC57103-1	80174	7.70	145648	10.05	195847	10.98	143638	16.75	189916	14.25
ZZZZZZ	112019	7.71	146151	10.05	198415	10.98	139629	16.75	190520	14.25
ZZZZZZ	81361	7.72	149444	10.05	203979	10.98	135459	16.75	190133	14.25
ZZZZZZ	86754	7.70	162061	10.05	216275	10.98	152147	16.75	206938	14.25
ZZZZZZ	59213	7.70	119328	10.05	161942	10.98	115465	16.76	152784	14.26

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std:	VN11241-CC11221	**Injection Date:**	12/18/17
Lab File ID:	N266749.D	**Injection Time:**	09:36
Instrument ID:	GCMSN	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
ZZZZZZ	56148	7.70	115285	10.05	150153	10.98	110838	16.75	143696	14.25
ZZZZZZ	66945	7.71	120077	10.05	157666	10.98	112843	16.75	154672	14.25

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std:	VN11243-CC11221	**Injection Date:**	12/19/17
Lab File ID:	N266798.D	**Injection Time:**	11:04
Instrument ID:	GCMSN	**Method:**	EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	89064	7.70	152143	10.05	212452	10.98	135997	16.75	199279	14.25
Upper Limit [a]	178128	8.20	304286	10.55	424904	11.48	271994	17.25	398558	14.75
Lower Limit [b]	44532	7.20	76072	9.55	106226	10.48	67999	16.25	99640	13.75

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VN11243-MB	85056	7.70	140117	10.06	195324	10.99	127255	16.75	188544	14.25
VN11243-BS	88398	7.72	150021	10.05	212985	10.98	139375	16.75	204130	14.25
ZZZZZZ	88449	7.72	146455	10.06	204353	10.99	127016	16.76	191885	14.26
JC56966-22	92534	7.70	136608	10.05	193066	10.98	129491	16.75	188060	14.25
JC56966-22	80585	7.69	132829	10.06	193244	10.98	126179	16.76	187950	14.26
ZZZZZZ	74158	7.70	140073	10.05	193134	10.98	130763	16.75	185577	14.25
ZZZZZZ	78141	7.70	136017	10.05	192162	10.98	126767	16.75	177804	14.25
JC57103-2	76322	7.70	130941	10.05	192025	10.98	132572	16.75	179795	14.25
ZZZZZZ	77498	7.71	139024	10.05	202243	10.98	144204	16.75	188588	14.26
JC57103-2MS	83482	7.71	156497	10.06	228840	10.98	149496	16.76	215371	14.26
JC57103-2MSD	87791	7.71	168105	10.05	241481	10.98	158134	16.75	225421	14.25
ZZZZZZ	95446	7.72	162518	10.05	227995	10.98	144512	16.75	219324	14.25
ZZZZZZ	91691	7.72	155365	10.05	225187	10.98	140971	16.75	203603	14.25
ZZZZZZ	84016	7.69	145298	10.05	209996	10.98	130669	16.75	194877	14.26
ZZZZZZ	88645	7.70	146039	10.05	209336	10.98	132884	16.75	188865	14.26
ZZZZZZ	82462	7.70	135872	10.05	198456	10.98	125180	16.75	186048	14.25
ZZZZZZ	78514	7.71	140897	10.05	207608	10.98	127476	16.75	189728	14.25
ZZZZZZ	102901	7.70	146605	10.05	221374	10.98	138248	16.75	198125	14.25
ZZZZZZ	91104	7.72	154632	10.06	221016	10.98	139839	16.75	204208	14.26
ZZZZZZ	89003	7.70	144689	10.05	210456	10.98	128190	16.76	191740	14.26
ZZZZZZ	83824	7.70	140501	10.05	197496	10.98	127979	16.75	186863	14.25
ZZZZZZ	85192	7.70	136288	10.05	198467	10.98	125770	16.75	187985	14.25
ZZZZZZ	84133	7.71	141473	10.05	197450	10.98	123961	16.75	188836	14.25

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std: VT9392-CC9358 **Injection Date:** 12/12/17
Lab File ID: T228686.D **Injection Time:** 07:49
Instrument ID: GCMST **Method:** EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	102767	7.43	168284	9.46	261009	10.32	146142	16.07	250821	13.52
Upper Limit [a]	205534	7.93	336568	9.96	522018	10.82	292284	16.57	501642	14.02
Lower Limit [b]	51384	6.93	84142	8.96	130505	9.82	73071	15.57	125411	13.02

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VT9392-MB	113553	7.43	174949	9.46	264725	10.32	152138	16.07	253287	13.53
VT9392-BS	111164	7.43	174215	9.46	269126	10.32	148328	16.07	257178	13.52
ZZZZZZ	106288	7.42	169096	9.46	262298	10.32	144901	16.07	252616	13.53
ZZZZZZ	108553	7.43	170512	9.46	262256	10.32	149704	16.07	251961	13.53
ZZZZZZ	118944	7.44	175352	9.46	270064	10.32	154389	16.07	258200	13.52
ZZZZZZ	112155	7.43	171210	9.46	264910	10.32	155953	16.07	252673	13.53
ZZZZZZ	114233	7.42	168606	9.47	262801	10.32	152669	16.07	251528	13.53
ZZZZZZ	110153	7.43	167267	9.46	264347	10.32	151522	16.07	251208	13.53
ZZZZZZ	100693	7.44	178366	9.46	270167	10.32	146054	16.07	251993	13.52
ZZZZZZ	91020	7.43	166064	9.46	253733	10.32	149334	16.07	246877	13.53
JC56811-1MS	100481	7.42	174169	9.46	268585	10.32	149899	16.07	255050	13.52
JC56811-1MSD	103709	7.43	171428	9.46	269353	10.32	148772	16.07	256168	13.53
ZZZZZZ	111210	7.43	170374	9.46	265188	10.32	153100	16.07	254664	13.53
ZZZZZZ	113189	7.43	170442	9.47	270129	10.32	155510	16.07	249116	13.53
ZZZZZZ	108875	7.42	167029	9.46	260876	10.32	152819	16.07	253629	13.53
JC56811-1	114777	7.43	172028	9.46	264151	10.32	153967	16.07	253414	13.53
ZZZZZZ	111798	7.44	169786	9.46	258365	10.32	153343	16.07	249724	13.53
ZZZZZZ	110694	7.43	172590	9.46	259978	10.32	152305	16.07	254926	13.53
ZZZZZZ	112828	7.43	172352	9.46	262223	10.32	153254	16.07	255510	13.53
ZZZZZZ	113782	7.43	166003	9.46	260437	10.32	150315	16.07	246739	13.52
ZZZZZZ	108930	7.42	168521	9.46	263177	10.32	155030	16.07	250519	13.52
ZZZZZZ	106892	7.42	163979	9.46	251609	10.32	145728	16.07	243840	13.52
VT9393-MB	112284	7.42	167759	9.46	259117	10.32	153042	16.07	254726	13.53
VT9393-BS	113464	7.44	171540	9.46	268146	10.32	152692	16.07	254469	13.52
JC56966-31MS	114888	7.43	171757	9.46	264383	10.32	151554	16.07	262315	13.52
JC56966-31MSD	109058	7.43	167080	9.46	255087	10.32	145458	16.07	250713	13.52
JC56966-40	104156	7.42	164106	9.46	256340	10.32	148138	16.07	246184	13.53
JC56966-31	109826	7.42	166330	9.46	261721	10.32	153795	16.07	252579	13.52
JC56966-6	96261	7.43	184105	9.46	280382	10.32	161985	16.07	271596	13.52
JC56966-10	97048	7.42	180676	9.46	275402	10.32	159716	16.07	273800	13.52
JC56966-11	86349	7.43	181334	9.46	275284	10.32	158756	16.07	259096	13.52
JC56966-12	73106	7.43	175652	9.46	273516	10.32	160982	16.07	270646	13.53
JC56966-13	65203	7.43	184247	9.46	285190	10.32	160484	16.06	270478	13.52

IS 1 = Tert Butyl Alcohol-D9

Internal Standard Area Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Check Std:	VT9392-CC9358	**Injection Date:**	12/12/17
Lab File ID:	T228686.D	**Injection Time:**	07:49
Instrument ID:	GCMST	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT

IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC56966-1	N266598.D	111	95	100	117
JC56966-2	N266599.D	115	94	99	117
JC56966-3	N266600.D	117	93	99	119
JC56966-4	N266601.D	118	96	99	114
JC56966-5	N266602.D	116	96	95	117
JC56966-6	T228722.D	116	104	97	109
JC56966-7	N266603.D	116	94	100	110
JC56966-8	N266604.D	118	92	100	113
JC56966-9	N266597.D	100	95	103	105
JC56966-10	T228723.D	118	101	99	111
JC56966-11	T228724.D	113	105	96	113
JC56966-12	T228725.D	116	102	98	115
JC56966-13	T228726.D	115	104	97	113
JC56966-14	N266714.D	112	93	100	108
JC56966-15	N266757.D	109	98	107	107
JC56966-15	N266758.D	115	94	102	112
JC56966-16	N266679.D	118	94	98	115
JC56966-17	N266753.D	110	94	103	109
JC56966-18	N266680.D	120	93	97	113
JC56966-19	N266720.D	111	93	98	108
JC56966-20	N266721.D	117	90	100	116
JC56966-21	N266722.D	112	93	99	113
JC56966-22	N266803.D	110	91	109	113
JC56966-22	N266802.D	113	95	104	113
JC56966-23	N266723.D	115	92	99	114
JC56966-24	N266733.D	112	93	100	107
JC56966-25	N266734.D	109	91	103	111
JC56966-26	N266754.D	106	93	101	106
JC56966-27	N266736.D	113	90	100	111
JC56966-28	N266755.D	112	92	102	116
JC56966-29	N266738.D	115	91	101	110
JC56966-30	N266739.D	114	90	103	113
JC56966-31	T228721.D	117	103	97	114
JC56966-32	N266756.D	114	93	100	112
JC56966-33	N266741.D	113	89	100	109
JC56966-34	N266708.D	112	93	100	110
JC56966-35	N266716.D	112	94	103	112
JC56966-36	N266715.D	113	93	102	111
JC56966-37	N266717.D	115	94	100	110
JC56966-38	N266718.D	114	93	99	112

Surrogate Recovery Summary

Job Number: JC56966
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC56966-39	N266719.D	116	93	100	110
JC56966-40	T228720.D	116	103	97	115
JC56966-31MS	T228717.D	113	102	98	113
JC56966-31MSD	T228718.D	122	104	97	112
JC56966-9MS	N266594.D	110	97	98	106
JC56966-9MSD	N266595.D	106	98	105	107
JC57103-2MS	N266808.D	101	97	110	104
JC57103-2MSD	N266810.D	97	98	107	97
JC57152-1MS	N266727.D	102	96	99	101
JC57152-1MSD	N266728.D	102	97	106	97
JC57306-7MS	N266664.D	108	99	98	108
JC57306-7MSD	N266665.D	105	99	104	103
JC57328-1MS	N266763.D	102	97	104	103
JC57328-2DUP	N266765.D	107	91	97	111
JC57351-3DUP	N266711.D	111	90	98	111
JC57351-4MS	N266709.D	106	97	103	99
VN11234-BS	N266593.D	109	99	101	105
VN11234-MB	N266592.D	122	93	95	115
VN11237-BS	N266655.D	107	98	105	107
VN11237-MB	N266654.D	114	95	104	116
VN11239-BS	N266700.D	109	97	106	107
VN11239-MB	N266698.D	112	93	102	111
VN11240-BS	N266726.D	108	94	100	104
VN11240-MB	N266725.D	119	93	99	114
VN11241-BS	N266751.D	106	95	101	102
VN11241-MB	N266750.D	114	93	104	110
VN11243-BS	N266800.D	109	99	112	110
VN11243-MB	N266799.D	110	96	110	106
VT9393-BS	T228716.D	110	105	98	111
VT9393-MB	T228715.D	114	102	95	117

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4 (SUR)	76-122%
S2 = Toluene-D8 (SUR)	80-120%
S3 = 4-Bromofluorobenzene (SUR)	80-120%
S4 = Dibromofluoromethane (S)	80-120%

Initial Calibration Summary

Job Number: JC56966 **Sample:** VN11221-ICC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266327.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Response Factor Report GCMSN

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Calibration Files
1 =n266324.D 2 =n266325.D 100 =n266329.D 50 =n266328.D
20 =n266327.D 200 =n266330.D 5 =n266326.D 0.5 =n266322.D
0.2 =n266323.D =

Compound	1	2	100	50	20	200	5	0.5	0.2	Avg	%RSD
1) I Tert Butyl Alcohol-d9 ----------ISTD----------											
2) tertiary butyl alcohol	1.093	1.072	1.049	0.900	1.011	0.974				1.016	6.99
3) 1,4-dioxane	0.078	0.096	0.093	0.079	0.092	0.071				0.085	12.16
4) I pentafluorobenzene ----------ISTD----------											
5) freon 143a *****This compound did not meet initial calibration criteria.	0.883	0.830	0.851	0.891	0.977	0.830	0.938	1.046		0.906	8.44
6) freon 142b	0.733	0.728	0.868	0.847	0.868	0.888	0.841	0.887		0.832	7.82
7) chlorodifluoromethane	0.661	0.576	0.664	0.654	0.679	0.622	0.636	0.797		0.661	9.62
8) dichlorodifluoromethane	1.131	1.131	1.032	1.019	1.118	0.989	0.995			1.059	6.09
9) chloromethane	0.763	0.816	0.780	0.739	0.769	0.829	0.710	0.802		0.776	5.12
10) vinyl chloride	1.029	0.998	1.009	0.953	1.028	1.023	0.911	1.076		1.003	5.08
11) 1,3-butadiene	0.524	0.429	0.657	0.596	0.596	0.642	0.458	0.645		0.568	15.51
12) bromomethane	0.671	0.669	0.627	0.605	0.624	0.629	0.594			0.631	4.65
13) chloroethane	0.604	0.567	0.521	0.505	0.544	0.508	0.527	0.647		0.553	9.09
14) trichlorofluoromethane	1.108	1.200	1.083	1.056	1.186	1.111	1.050	1.214		1.126	5.79
15) pentane										0.000#	-1.00
16) freon 141b	0.722	0.719	0.793	0.796	0.807	0.801	0.870	1.010		0.815	11.38
17) ethyl ether	0.281	0.250	0.300	0.291	0.301	0.288	0.285	0.292		0.286	5.61
18) acrolein	0.102	0.084	0.083	0.087	0.083	0.069				0.085	12.51
19) 1,1-dichloroethene	0.493	0.482	0.435	0.446	0.493	0.460	0.440	0.674		0.490	15.88
20) acetone	0.057	0.056	0.052	0.050	0.047	0.048	0.051	0.063		0.053	10.26
21) freon 113	0.539	0.465	0.552	0.547	0.566	0.543	0.507	0.512		0.529	6.14
22) acetonitrile										0.000#	-1.00
23) iodomethane											

	0.822	0.814	0.836	0.830	0.871	0.860	0.794	0.925		0.844	4.85
24) carbon disulfide												
	1.486	1.421	1.462	1.505	1.590	1.451	1.487	1.728	1.628	1.529	6.52
25) methylene chloride												
	0.455	0.455	0.454	0.453	0.481	0.453	0.456	0.544		0.469	6.79
26) methyl acetate												
	0.253	0.287	0.254	0.270	0.259	0.250				0.262	5.23
27) methyl tert butyl ether												
	1.408	1.314	1.399	1.409	1.483	1.276	1.342	1.644	1.422	1.411	7.61
28) trans-1,2-dichloroethene												
	0.515	0.447	0.427	0.422	0.432	0.411	0.447	0.520	0.539	0.462	10.50
29) acrylonitrile												
	0.135	0.172	0.160	0.162	0.159	0.153				0.157	7.75
30) hexane												
										0.000#	-1.00
31) di-isopropyl ether												
	1.158	1.221	1.299	1.282	1.285	1.217	1.212	1.277	1.646	1.289	11.00
32) 1,1-dichloroethane												
	0.708	0.687	0.706	0.714	0.722	0.663	0.700	0.880	0.744	0.725	8.58
33) chloroprene												
	0.486	0.514	0.588	0.560	0.569	0.568	0.543	0.688		0.564	10.59
34) vinyl acetate												
										0.000#	-1.00
35) ethyl tert-butyl ether												
	1.205	1.230	1.371	1.375	1.432	1.226	1.264	1.289	1.298	1.299	6.02
36) 2-butanone												
	0.038	0.038	0.048	0.044	0.045	0.047	0.039	0.035		0.042	11.80
37) ethyl acetate												
										0.000#	-1.00
38) 2,2-dichloropropane												
	0.755	0.753	0.834	0.826	0.861	0.801	0.775	0.915		0.815	6.84
39) cis-1,2-dichloroethene												
	0.566	0.487	0.480	0.475	0.474	0.455	0.475	0.533	0.568	0.501	8.53
40) methyl acrylate												
	0.043	0.056	0.054	0.053	0.056	0.044				0.051	11.41
41) propionitrile												
	0.050	0.049	0.058	0.054	0.052	0.053	0.051			0.052	5.77
42) bromochloromethane												
	0.217	0.246	0.247	0.244	0.233	0.232	0.204	0.289		0.239	10.52
43) tetrahydrofuran												
	0.045	0.048	0.050	0.044	0.044	0.050	0.055			0.048	7.95
44) chloroform												
	0.495	0.449	0.496	0.479	0.486	0.465	0.457	0.596	0.631	0.506	12.57
45) t-butyl formate												
	0.092	0.169	0.128	0.113	0.179	0.081				0.127	31.55
46) dibromofluoromethane (s)												
	0.464	0.463	0.471	0.464	0.477	0.470	0.472	0.462	0.456	0.466	1.37
47) methacrylonitrile												
	0.179	0.087	0.157	0.138	0.141	0.149	0.129			0.140	20.22
48) 1,1,1-trichloroethane												
	0.881	0.855	0.885	0.893	0.894	0.854	0.861	1.167	0.982	0.919	10.96
49) cyclohexane												
	0.766	0.856	0.889	0.874	0.938	0.872	0.943	0.757		0.862	8.07
50) 1,1-dichloropropene												
	0.554	0.487	0.555	0.535	0.533	0.544	0.478	0.494		0.522	5.97
51) carbon tetrachloride												
	0.728	0.712	0.824	0.824	0.836	0.797	0.787	0.945	0.883	0.815	8.83
52) isobutyl alcohol												
										0.000#	-1.00

Initial Calibration Summary

Job Number: JC56966 **Sample:** VN11221-ICC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266327.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

```
53) I   1,4-difluorobenzene   ----------------ISTD---------------------
54)  1,2-dichloroethane-d4 (s)
          0.365 0.386 0.365 0.371 0.368 0.358 0.370 0.373 0.365   0.369    2.08
55)  isopropyl acetate
                                                                  0.000#  -1.00
56)  2,2,4-trimethylpentane
          0.986 0.950 1.411 1.343 1.311 1.246 1.102 1.163         1.189   14.13
57)  benzene
          1.058 1.151 1.140 1.150 1.164 0.948 1.132 1.283 1.041   1.119    8.41
58)  tert-amyl methyl ether
          0.945 0.940 0.976 1.025 1.036 0.790 0.926 1.088 1.112   0.982    9.92
59)  1,2-dichloroethane
          0.409 0.395 0.386 0.373 0.392 0.348 0.379 0.488         0.396   10.39
60)  heptane
                                                                  0.000#  -1.00
61)  n-butyl alcohol
                                                                  0.000#  -1.00
62)  trichloroethene
          0.276 0.282 0.306 0.297 0.293 0.282 0.296 0.251         0.286    5.90
63)  methyl methacrylate
          0.232 0.248 0.324 0.313 0.318 0.306 0.282 0.317         0.292   12.00
64)  1,2-dichloropropane
          0.242 0.248 0.295 0.293 0.291 0.270 0.290 0.309         0.280    8.57
65)  methylcyclohexane
          0.599 0.613 0.743 0.740 0.763 0.672 0.687 0.769         0.698    9.52
66)  dibromomethane
          0.178 0.176 0.182 0.178 0.172 0.170 0.177 0.193         0.178    3.94
67)  bromodichloromethane
          0.380 0.377 0.409 0.400 0.393 0.372 0.386 0.417         0.392    4.10
68)  2-nitropropane
                     0.071 0.064 0.058 0.063 0.050                0.061   12.86
69)  2-chloroethyl vinyl ether
          0.102 0.111 0.136 0.132 0.131 0.120 0.115 0.112         0.120    9.99
70)  epichlorohydrin
          0.026 0.023 0.027 0.025 0.025 0.026 0.024               0.025    5.76
71)  cis-1,3-dichloropropene
          0.429 0.358 0.445 0.441 0.440 0.418 0.406 0.498         0.429    9.22
72)  4-methyl-2-pentanone
          0.074 0.113 0.113 0.107 0.103 0.099 0.087 0.090         0.098   14.22
73)  3-methyl-1-butanol
          0.015 0.017 0.017 0.016 0.015 0.016 0.012 0.015         0.015   10.06

74) I   chlorobenzene-d5      ----------------ISTD---------------------
75)  toluene-d8
          1.286 1.288 1.334 1.331 1.317 1.317 1.311 1.272 1.321   1.309    1.65
76)  toluene
          0.708 0.655 0.800 0.791 0.777 0.706 0.738 0.841 0.972   0.777   11.97
77)  ethyl methacrylate
          0.325 0.324 0.388 0.361 0.342 0.347 0.299               0.341    8.36
78)  trans-1,3-dichloropropene
          0.354 0.409 0.443 0.437 0.436 0.409 0.407 0.492         0.423    9.32
79)  1,1,2-trichloroethane
          0.194 0.199 0.218 0.211 0.218 0.202 0.197 0.192         0.204    5.13
80)  tetrachloroethene
          0.302 0.263 0.317 0.306 0.305 0.296 0.300 0.410         0.312   13.54
81)  2-hexanone
          0.079 0.097 0.110 0.106 0.103 0.097 0.090               0.098   10.78
82)  1,3-dichloropropane
          0.473 0.449 0.433 0.417 0.419 0.397 0.442 0.450         0.435    5.44
83)  butyl acetate
```

Initial Calibration Summary

Job Number: JC56966 **Sample:** VN11221-ICC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266327.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

											0.000#	-1.00
84)	3,3-dimethyl-1-butanol											
	0.041	0.038	0.046	0.043	0.038	0.043	0.030	0.059			0.042	19.52
85)	dibromochloromethane											
	0.320	0.335	0.351	0.344	0.336	0.331	0.292	0.366			0.334	6.59
86)	1,2-dibromoethane											
	0.228	0.272	0.274	0.269	0.276	0.258	0.257	0.303			0.267	7.93
87)	chlorobenzene											
	0.878	0.863	0.860	0.869	0.880	0.765	0.845	1.019			0.872	8.00
88)	1,1,1,2-tetrachloroethane											
	0.350	0.404	0.498	0.483	0.447	0.445	0.481	0.490			0.450	11.31
89)	ethylbenzene											
	1.341	1.388	1.440	1.494	1.507	1.139	1.395	1.396	1.868		1.441	13.39
90)	m,p-xylene											
	0.570	0.569	0.612	0.613	0.613	0.529	0.588	0.641	0.884		0.624	16.44
91)	o-xylene											
	0.527	0.534	0.698	0.682	0.658	0.622	0.604	0.643	0.836		0.645	14.43
92)	styrene											
	0.896	0.909	0.971	0.994	0.978	0.845	0.885	0.866			0.918	6.10
93)	n-amyl acetate											
											0.000#	-1.00
94)	bromoform											
	0.221	0.247	0.258	0.256	0.255	0.243	0.229				0.244	5.93
95)	isopropylbenzene											
	1.456	1.475	1.790	1.899	1.838	1.327	1.698	1.701	1.993		1.686	13.26
96)	I 1,4-dichlorobenzene-d ----------ISTD----------											
97)	4-bromofluorobenzene (s)											
	0.697	0.676	0.724	0.684	0.677	0.713	0.697	0.693	0.693		0.695	2.27
98)	bromobenzene											
	0.617	0.557	0.637	0.604	0.618	0.584	0.607	0.751			0.622	9.23
99)	1,1,2,2-tetrachloroethane											
	0.503	0.540	0.587	0.533	0.541	0.522	0.520	0.551			0.537	4.65
100)	trans-1,4-dichloro-2-butene											
	0.138	0.143	0.149	0.133	0.129	0.130	0.126				0.136	6.23
101)	1,2,3-trichloropropane											
	0.185	0.205	0.175	0.163	0.161	0.162	0.191				0.177	9.60
102)	n-propylbenzene											
	0.602	0.595	0.738	0.696	0.648	0.669	0.602	0.621			0.646	7.99
103)	2-chlorotoluene											
	0.579	0.502	0.673	0.611	0.611	0.623	0.593	0.576			0.596	8.20
104)	4-chlorotoluene											
	0.458	0.546	0.598	0.583	0.549	0.560	0.575	0.516			0.548	8.04
105)	1,3,5-trimethylbenzene											
	1.803	1.819	2.406	2.407	2.280	1.800	1.964	1.919			2.050	13.15
106)	tert-butylbenzene											
	0.349	0.402	0.631	0.562	0.517	0.596	0.436	0.467			0.495	19.91
107)	1,2,4-trimethylbenzene											
	2.032	1.893	2.337	2.344	2.305	1.786	2.182	2.164			2.130	9.84
108)	sec-butylbenzene											
	2.264	2.312	3.024	3.150	3.017	2.136	2.763	2.528			2.649	14.82
109)	1,3-dichlorobenzene											
	1.382	1.312	1.320	1.316	1.304	1.149	1.285	1.586			1.332	9.16
110)	p-isopropyltoluene											
	2.024	2.069	2.700	2.800	2.675	1.981	2.424	2.401			2.384	13.74
111)	1,4-dichlorobenzene											
	1.479	1.241	1.326	1.356	1.369	1.148	1.329	1.699			1.368	12.05
112)	1,2-dichlorobenzene											
	1.573	1.442	1.431	1.438	1.435	1.230	1.409	1.696			1.457	9.20
113)	benzyl chloride											

Initial Calibration Summary

Job Number: JC56966 **Sample:** VN11221-ICC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266327.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

```
           1.288 1.355 1.349 1.331 1.322 1.132 1.282 1.392         1.306    6.05
114)  indane
                                                                   0.000#  -1.00
115)  n-butylbenzene
           1.106 1.150 1.440 1.422 1.375 1.223 1.300 1.357         1.297    9.64
116)  hexachloroethane
           0.411 0.439 0.721 0.656 0.579 0.678 0.504 0.581         0.571   19.73
117)  1,2-dibromo-3-chloropropane
           0.213 0.222 0.229 0.220 0.212 0.219 0.213 0.378         0.238   23.94
118)  Nitrobenzene
                       0.081 0.071 0.064 0.081 0.065               0.072   11.03
119)  1,3,5-trichlorobenzene
           1.404 1.618 1.735 1.750 1.755 1.403 1.680 2.073         1.677   12.85
120)  1,2,4-trichlorobenzene
           1.707 1.459 1.691 1.706 1.676 1.343 1.585 2.159         1.666   14.36
121)  hexachlorobutadiene
           0.850 0.787 1.013 0.946 0.933 0.868 0.872 0.965         0.904    8.06
122)  naphthalene
           3.155 2.902 3.092 3.362 3.440 2.114 3.028 4.036         3.141   17.29
123)  1,2,3-trichlorobenzene
           1.499 1.435 1.680 1.644 1.647 1.322 1.481 1.961         1.584   12.35
124)  ETHYLENIMINE
                                                                   0.000#  -1.00
125)  BIS(CHLOROMETHYL)ETHER
                                                                   0.000#  -1.00
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MN11221.M         Tue Dec 05 09:33:29 2017   MSDN
```

Initial Calibration Verification

Job Number: JC56966 **Sample:** VN11221-ICV11221
Account: UTC United Technologies Corporation **Lab FileID:** N266333.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\n266333.D Vial: 13
Acq On : 1 Dec 2017 1:04 am Operator: CHELSEAS
Sample : icv11221-20 Inst : GCMSN
Misc : MS22241,VN11221,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Fri Dec 01 16:37:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	113	0.00	7.70
2	M	tertiary butyl alcohol	1.016	0.975	4.0	123	-0.01	7.82
3	M	1,4-dioxane	0.085	0.084	1.2	121	0.00	11.64
4	I	pentafluorobenzene	1.000	1.000	0.0	113	0.00	10.05
5		freon 143a	0.906	0.515	43.2#	60	0.03	3.69
6		freon 142b	0.832	0.768	7.7	100	0.00	4.27
7	M	chlorodifluoromethane	0.661	0.608	8.0	101	-0.01	4.01
8	M	dichlorodifluoromethane	1.059	1.097	-3.6	111	-0.02	3.99
9	M	chloromethane	0.776	0.736	5.2	108	-0.01	4.32
10	M	vinyl chloride	1.003	0.943	6.0	104	-0.01	4.62
11		1,3-butadiene		----------NA----------				
12	M	bromomethane	0.631	0.614	2.7	111	0.00	5.33
13	M	chloroethane	0.553	0.531	4.0	110	0.00	5.55
14	M	trichlorofluoromethane	1.126	1.095	2.8	105	0.01	6.07
15	M	pentane		----------NA----------				
16		freon 141b	0.815	0.635	22.1	89	0.00	6.54
17	M	ethyl ether	0.286	0.300	-4.9	113	0.00	6.52
18	M	acrolein	0.085	0.080	5.9	104	-0.01	6.76
19	M	1,1-dichloroethene	0.490	0.430	12.2	99	0.00	6.96
20	M	acetone	0.053	0.056	-5.7	136	0.01	7.00
21		freon 113	0.529	0.631	-19.3	126	0.00	6.98
22	M	acetonitrile		----------NA----------				
23	M	iodomethane	0.844	0.857	-1.5	112	0.00	7.23
24	M	carbon disulfide	1.529	1.599	-4.6	114	0.00	7.37
25	M	methylene chloride	0.469	0.471	-0.4	111	0.00	7.74
26	M	methyl acetate	0.262	0.249	5.0	105	0.00	7.49
27	M	methyl tert butyl ether	1.411	1.471	-4.3	112	0.00	8.12
28	M	trans-1,2-dichloroethene	0.462	0.412	10.8	108	0.00	8.14
29		acrylonitrile	0.157	0.159	-1.3	111	0.00	8.07
30		hexane		----------NA----------				
31	M	di-isopropyl ether	1.289	1.263	2.0	111	0.00	8.75
32	M	1,1-dichloroethane	0.725	0.704	2.9	111	0.00	8.76
33	M	chloroprene	0.564	0.569	-0.9	113	0.00	8.85
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether	1.299	1.392	-7.2	110	0.00	9.22
36		2-butanone	0.042	0.046	-9.5	117	0.00	9.43
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane	0.815	0.772	5.3	102	0.00	9.51
39	M	cis-1,2-dichloroethene	0.501	0.476	5.0	114	0.00	9.48
40		methyl acrylate	0.051	0.053	-3.9	113	0.00	9.53
41	M	propionitrile	0.052	0.054	-3.8	119	0.00	9.52

Initial Calibration Verification

Job Number: JC56966 **Sample:** VN11221-ICV11221
Account: UTC United Technologies Corporation **Lab FileID:** N266333.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

42	M	bromochloromethane	0.239	0.235	1.7	114	0.00	9.78
43	M	tetrahydrofuran	0.048	0.044	8.3	114	0.00	9.80
44	M	chloroform	0.506	0.480	5.1	112	0.00	9.88
45		t-butyl formate	0.127	0.156	-22.8	156	0.00	9.92
46	S	dibromofluoromethane (s)	0.466	0.449	3.6	107	0.00	10.07
47	M	methacrylonitrile	0.140	0.137	2.1	110	-0.01	9.70
48	M	1,1,1-trichloroethane	0.919	0.853	7.2	108	0.00	10.12
49	M	cyclohexane	0.862	0.827	4.1	100	0.00	10.23
50		1,1-dichloropropene	0.522	0.540	-3.4	115	0.00	10.30
51		carbon tetrachloride	0.815	0.818	-0.4	111	0.00	10.32
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	111	0.00	10.98
54	S	1,2-dichloroethane-d4 (s)	0.369	0.365	1.1	110	0.00	10.50
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane	1.189	1.275	-7.2	108	0.00	10.65
57	M	benzene	1.119	1.181	-5.5	113	0.00	10.55
58	M	tert-amyl methyl ether	0.982	1.065	-7.5	114	0.00	10.64
59	M	1,2-dichloroethane	0.396	0.389	1.8	110	0.00	10.59
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene	0.286	0.315	-10.1	120	0.00	11.28
63	M	methyl methacrylate	0.292	0.306	-4.8	107	0.00	11.57
64	M	1,2-dichloropropane	0.280	0.291	-3.9	111	0.00	11.59
65	M	methylcyclohexane	0.698	0.699	-0.1	102	0.00	11.58
66		dibromomethane	0.178	0.184	-3.4	119	0.00	11.70
67	M	bromodichloromethane	0.392	0.390	0.5	111	0.00	11.86
68		2-nitropropane	0.061	0.063	-3.3	121	0.00	12.08
69		2-chloroethyl vinyl ether	0.120	0.141	-17.5	120	0.00	12.12
70		epichlorohydrin	0.025	0.024	4.0	107	0.00	12.20
71	M	cis-1,3-dichloropropene	0.429	0.429	0.0	108	0.00	12.33
72	M	4-methyl-2-pentanone	0.098	0.098	0.0	106	0.00	12.45
73		3-methyl-1-butanol	0.015	0.015	0.0	112	0.00	12.47
74	I	chlorobenzene-d5	1.000	1.000	0.0	110	0.00	14.25
75	S	toluene-d8	1.309	1.299	0.8	109	0.00	12.65
76		toluene	0.777	0.791	-1.8	112	0.00	12.73
77		ethyl methacrylate	0.341	0.330	3.2	107	0.00	12.94
78		trans-1,3-dichloropropene	0.423	0.432	-2.1	109	0.00	12.94
79		1,1,2-trichloroethane	0.204	0.215	-5.4	109	0.00	13.17
80	M	tetrachloroethene	0.312	0.404	-29.5	146	0.00	13.30
81		2-hexanone	0.098	0.108	-10.2	116	0.00	13.35
82	M	1,3-dichloropropane	0.435	0.431	0.9	113	0.00	13.36
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol	0.042	0.042	0.0	122	0.00	13.55
85	M	dibromochloromethane	0.334	0.352	-5.4	116	0.00	13.62
86	M	1,2-dibromoethane	0.267	0.274	-2.6	110	0.00	13.78
87	M	chlorobenzene	0.872	0.909	-4.2	114	0.00	14.29
88	M	1,1,1,2-tetrachloroethane	0.450	0.469	-4.2	116	0.00	14.36
89	M	ethylbenzene	1.441	1.517	-5.3	111	0.00	14.36
90	M	m,p-xylene	0.624	0.607	2.7	109	0.00	14.49
91	M	o-xylene	0.645	0.680	-5.4	114	0.00	14.92
92	M	styrene	0.918	0.990	-7.8	112	0.00	14.93
93		n-amyl acetate		----------NA----------				
94	M	bromoform	0.244	0.278	-13.9	120	0.00	15.18
95		isopropylbenzene	1.686	1.890	-12.1	114	0.00	15.29
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	111	0.00	16.75
97	S	4-bromofluorobenzene (s)	0.695	0.704	-1.3	115	0.00	15.51
98	M	bromobenzene	0.622	0.622	0.0	112	0.00	15.70

Initial Calibration Verification

Job Number: JC56966 **Sample:** VN11221-ICV11221
Account: UTC United Technologies Corporation **Lab FileID:** N266333.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

99	M	1,1,2,2-tetrachloroethane	0.537	0.548	-2.0	112	0.00	15.60
100	M	trans-1,4-dichloro-2-bute	0.136	0.152	-11.8	131	0.00	15.64
101	M	1,2,3-trichloropropane	0.177	0.162	8.5	111	0.00	15.69
102	M	n-propylbenzene	0.646	0.660	-2.2	113	0.00	15.74
103	M	2-chlorotoluene	0.596	0.584	2.0	106	0.00	15.87
104	M	4-chlorotoluene	0.548	0.575	-4.9	116	0.00	16.00
105	M	1,3,5-trimethylbenzene	2.050	2.291	-11.8	111	0.00	15.91
106	M	tert-butylbenzene	0.495	0.516	-4.2	110	0.00	16.27
107	M	1,2,4-trimethylbenzene	2.130	2.369	-11.2	114	0.00	16.32
108	M	sec-butylbenzene	2.649	3.092	-16.7	114	0.00	16.50
109	M	1,3-dichlorobenzene	1.332	1.385	-4.0	118	0.00	16.68
110	M	p-isopropyltoluene	2.384	2.758	-15.7	114	0.00	16.64
111	M	1,4-dichlorobenzene	1.368	1.394	-1.9	113	0.00	16.78
112	M	1,2-dichlorobenzene	1.457	1.488	-2.1	115	0.00	17.18
113	M	benzyl chloride	1.306	1.136	13.0	95	0.00	16.88
114		indane		----------NA----------				
115	M	n-butylbenzene	1.297	1.387	-6.9	112	0.00	17.08
116		hexachloroethane	0.571	0.607	-6.3	116	0.00	17.50
117	M	1,2-dibromo-3-chloropropa	0.238	0.215	9.7	113	0.00	18.02
118		Nitrobenzene	0.072	0.064	11.1	111	0.00	18.23
119		1,3,5-trichlorobenzene	1.677	1.854	-10.6	117	0.00	18.21
120	M	1,2,4-trichlorobenzene	1.666	1.703	-2.2	113	0.00	18.91
121	M	hexachlorobutadiene	0.904	0.936	-3.5	111	0.00	19.04
122	M	naphthalene	3.141	3.487	-11.0	112	0.00	19.23
123	M	1,2,3-trichlorobenzene	1.584	1.668	-5.3	112	0.00	19.47
124		ETHYLENIMINE		----------NA----------				
125		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Fri Dec 01 16:41:51 2017 MSDN

Initial Calibration Verification

Job Number: JC56966 **Sample:** VN11223-ICV11221
Account: UTC United Technologies Corporation **Lab FileID:** N266354.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\n266354.D Vial: 12
Acq On : 4 Dec 2017 9:45 pm Operator: CHELSEAS
Sample : icv11221-20 Inst : GCMSN
Misc : MS22241,VN11223,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Tue Dec 05 09:25:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	93	0.03	7.72
2	M	tertiary butyl alcohol		----------NA----------				
3	M	1,4-dioxane		----------NA----------				
4	I	pentafluorobenzene	1.000	1.000	0.0	95	0.00	10.05
5		freon 143a		----------NA----------				
6		freon 142b		----------NA----------				
7	M	chlorodifluoromethane		----------NA----------				
8	M	dichlorodifluoromethane		----------NA----------				
9	M	chloromethane		----------NA----------				
10	M	vinyl chloride		----------NA----------				
11		1,3-butadiene	0.568	0.555	2.3	88	-0.05	4.69
12	M	bromomethane		----------NA----------				
13	M	chloroethane		----------NA----------				
14	M	trichlorofluoromethane		----------NA----------				
15	M	pentane		----------NA----------				
16		freon 141b		----------NA----------				
17	M	ethyl ether		----------NA----------				
18	M	acrolein		----------NA----------				
19	M	1,1-dichloroethene		----------NA----------				
20	M	acetone		----------NA----------				
21		freon 113		----------NA----------				
22	M	acetonitrile		----------NA----------				
23	M	iodomethane		----------NA----------				
24	M	carbon disulfide		----------NA----------				
25	M	methylene chloride		----------NA----------				
26	M	methyl acetate		----------NA----------				
27	M	methyl tert butyl ether		----------NA----------				
28	M	trans-1,2-dichloroethene		----------NA----------				
29		acrylonitrile		----------NA----------				
30		hexane		----------NA----------				
31	M	di-isopropyl ether		----------NA----------				
32	M	1,1-dichloroethane		----------NA----------				
33	M	chloroprene		----------NA----------				
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether		----------NA----------				
36		2-butanone		----------NA----------				
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane		----------NA----------				
39	M	cis-1,2-dichloroethene		----------NA----------				
40		methyl acrylate		----------NA----------				
41	M	propionitrile		----------NA----------				

Initial Calibration Verification

Job Number: JC56966 **Sample:** VN11223-ICV11221
Account: UTC United Technologies Corporation **Lab FileID:** N266354.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

42	M	bromochloromethane		----------NA----------				
43	M	tetrahydrofuran		----------NA----------				
44	M	chloroform		----------NA----------				
45		t-butyl formate		----------NA----------				
46	S	dibromofluoromethane (s)	0.466	0.495	-6.2	98	0.00	10.07
47	M	methacrylonitrile		----------NA----------				
48	M	1,1,1-trichloroethane		----------NA----------				
49	M	cyclohexane		----------NA----------				
50		1,1-dichloropropene		----------NA----------				
51		carbon tetrachloride		----------NA----------				
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	92	0.00	10.98
54	S	1,2-dichloroethane-d4 (s)	0.369	0.389	-5.4	97	0.00	10.49
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane		----------NA----------				
57	M	benzene		----------NA----------				
58	M	tert-amyl methyl ether		----------NA----------				
59	M	1,2-dichloroethane		----------NA----------				
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene		----------NA----------				
63	M	methyl methacrylate		----------NA----------				
64	M	1,2-dichloropropane		----------NA----------				
65	M	methylcyclohexane		----------NA----------				
66		dibromomethane		----------NA----------				
67	M	bromodichloromethane		----------NA----------				
68		2-nitropropane		----------NA----------				
69		2-chloroethyl vinyl ether		----------NA----------				
70		epichlorohydrin		----------NA----------				
71	M	cis-1,3-dichloropropene		----------NA----------				
72	M	4-methyl-2-pentanone		----------NA----------				
73		3-methyl-1-butanol		----------NA----------				
74	I	chlorobenzene-d5	1.000	1.000	0.0	92	0.00	14.25
75	S	toluene-d8	1.309	1.240	5.3	86	0.00	12.65
76		toluene		----------NA----------				
77		ethyl methacrylate		----------NA----------				
78		trans-1,3-dichloropropene		----------NA----------				
79		1,1,2-trichloroethane		----------NA----------				
80	M	tetrachloroethene		----------NA----------				
81		2-hexanone		----------NA----------				
82	M	1,3-dichloropropane		----------NA----------				
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol		----------NA----------				
85	M	dibromochloromethane		----------NA----------				
86	M	1,2-dibromoethane		----------NA----------				
87	M	chlorobenzene		----------NA----------				
88	M	1,1,1,2-tetrachloroethane		----------NA----------				
89	M	ethylbenzene		----------NA----------				
90	M	m,p-xylene		----------NA----------				
91	M	o-xylene		----------NA----------				
92	M	styrene		----------NA----------				
93		n-amyl acetate		----------NA----------				
94	M	bromoform		----------NA----------				
95		isopropylbenzene		----------NA----------				
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	94	0.00	16.75
97	S	4-bromofluorobenzene (s)	0.695	0.657	5.5	91	0.00	15.51
98	M	bromobenzene		----------NA----------				

Initial Calibration Verification

Job Number: JC56966 **Sample:** VN11223-ICV11221
Account: UTC United Technologies Corporation **Lab FileID:** N266354.D
Project: SECORINI: Zanesville Well Field, [redacted] Zanesville, OH

99	M	1,1,2,2-tetrachloroethane	----------NA----------
100	M	trans-1,4-dichloro-2-bute	----------NA----------
101	M	1,2,3-trichloropropane	----------NA----------
102	M	n-propylbenzene	----------NA----------
103	M	2-chlorotoluene	----------NA----------
104	M	4-chlorotoluene	----------NA----------
105	M	1,3,5-trimethylbenzene	----------NA----------
106	M	tert-butylbenzene	----------NA----------
107	M	1,2,4-trimethylbenzene	----------NA----------
108	M	sec-butylbenzene	----------NA----------
109	M	1,3-dichlorobenzene	----------NA----------
110	M	p-isopropyltoluene	----------NA----------
111	M	1,4-dichlorobenzene	----------NA----------
112	M	1,2-dichlorobenzene	----------NA----------
113	M	benzyl chloride	----------NA----------
114		indane	----------NA----------
115	M	n-butylbenzene	----------NA----------
116		hexachloroethane	----------NA----------
117	M	1,2-dibromo-3-chloropropa	----------NA----------
118		Nitrobenzene	----------NA----------
119		1,3,5-trichlorobenzene	----------NA----------
120	M	1,2,4-trichlorobenzene	----------NA----------
121	M	hexachlorobutadiene	----------NA----------
122	M	naphthalene	----------NA----------
123	M	1,2,3-trichlorobenzene	----------NA----------
124		ETHYLENIMINE	----------NA----------
125		BIS(CHLOROMETHYL)ETHER	----------NA----------

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Tue Dec 05 09:33:42 2017 MSDN

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11233-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266565.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\N\VN11233\n266565.D Vial: 3
Acq On : 12 Dec 2017 10:33 am Operator: CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS22984,VN11233,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Fri Dec 01 16:37:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	81	0.03	7.72
2	M	tertiary butyl alcohol	1.016	1.076	-5.9	97	0.00	7.83
3	M	1,4-dioxane	0.085	0.085	0.0	87	0.00	11.63
4	I	pentafluorobenzene	1.000	1.000	0.0	81	0.00	10.05
5		freon 143a		----------NA----------				
6		freon 142b		----------NA----------				
7	M	chlorodifluoromethane	0.661	0.983	-48.7#	117	0.00	4.02
8	M	dichlorodifluoromethane	1.059	1.028	2.9	75	0.00	4.00
9	M	chloromethane	0.776	0.919	-18.4	97	0.00	4.32
10	M	vinyl chloride	1.003	1.159	-15.6	92	0.00	4.62
11		1,3-butadiene		----------NA----------				
12	M	bromomethane	0.631	0.711	-12.7	92	0.00	5.32
13	M	chloroethane	0.553	0.619	-11.9	92	0.00	5.55
14	M	trichlorofluoromethane	1.126	1.217	-8.1	83	0.02	6.08
15	M	pentane		----------NA----------				
16		freon 141b		----------NA----------				
17	M	ethyl ether	0.286	0.343	-19.9	92	0.00	6.52
18	M	acrolein	0.085	0.092	-8.2	86	0.00	6.77
19	M	1,1-dichloroethene	0.490	0.489	0.2	81	0.00	6.97
20	M	acetone	0.053	0.042	20.8	72	0.01	7.00
21		freon 113	0.529	0.641	-21.2	92	0.00	6.98
22	M	acetonitrile		----------NA----------				
23	M	iodomethane	0.844	0.987	-16.9	92	0.00	7.23
24	M	carbon disulfide	1.529	2.017	-31.9	103	0.00	7.37
25	M	methylene chloride	0.469	0.562	-19.8	95	0.00	7.74
26	M	methyl acetate	0.262	0.285	-8.8	86	0.00	7.49
27	M	methyl tert butyl ether	1.411	1.661	-17.7	91	0.00	8.12
28	M	trans-1,2-dichloroethene	0.462	0.491	-6.3	92	0.00	8.15
29		acrylonitrile	0.157	0.191	-21.7	96	0.00	8.07
30		hexane		----------NA----------				
31	M	di-isopropyl ether	1.289	1.471	-14.1	93	0.00	8.75
32	M	1,1-dichloroethane	0.725	0.846	-16.7	95	0.00	8.75
33	M	chloroprene	0.564	0.637	-12.9	91	0.00	8.85
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether	1.299	1.653	-27.3	94	0.00	9.22
36		2-butanone	0.042	0.041	2.4	73	0.00	9.43
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane	0.815	1.028	-26.1	97	0.00	9.52
39	M	cis-1,2-dichloroethene	0.501	0.516	-3.0	88	0.00	9.48
40		methyl acrylate	0.051	0.059	-15.7	91	0.00	9.53
41	M	propionitrile	0.052	0.060	-15.4	94	0.00	9.52

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11233-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266565.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

42	M	bromochloromethane	0.239	0.252	-5.4	88	0.00	9.79
43	M	tetrahydrofuran	0.048	0.044	8.3	80	0.00	9.80
44	M	chloroform	0.506	0.535	-5.7	89	0.00	9.88
45		t-butyl formate	0.127	0.149	-17.3	107	0.00	9.92
46	S	dibromofluoromethane (s)	0.466	0.498	-6.9	85	0.00	10.08
47	M	methacrylonitrile	0.140	0.153	-9.3	88	0.00	9.71
48	M	1,1,1-trichloroethane	0.919	1.014	-10.3	92	0.00	10.13
49	M	cyclohexane	0.862	0.832	3.5	72	0.00	10.23
50		1,1-dichloropropene	0.522	0.594	-13.8	90	0.00	10.30
51		carbon tetrachloride	0.815	0.893	-9.6	87	0.00	10.32
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	82	0.00	10.99
54	S	1,2-dichloroethane-d4 (s)	0.369	0.413	-11.9	92	0.00	10.50
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane	1.189	1.389	-16.8	87	0.00	10.65
57	M	benzene	1.119	1.312	-17.2	92	0.00	10.55
58	M	tert-amyl methyl ether	0.982	1.140	-16.1	90	0.00	10.65
59	M	1,2-dichloroethane	0.396	0.441	-11.4	92	0.00	10.59
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene	0.286	0.306	-7.0	86	0.00	11.29
63	M	methyl methacrylate	0.292	0.325	-11.3	84	0.00	11.57
64	M	1,2-dichloropropane	0.280	0.328	-17.1	92	0.00	11.59
65	M	methylcyclohexane	0.698	0.732	-4.9	79	0.00	11.58
66		dibromomethane	0.178	0.197	-10.7	94	0.00	11.70
67	M	bromodichloromethane	0.392	0.440	-12.2	92	0.00	11.86
68		2-nitropropane	0.066	0.104	-57.6#	146	0.00	12.09
69		2-chloroethyl vinyl ether	0.120	0.148	-23.3	92	0.00	12.12
70		epichlorohydrin	0.025	0.027	-8.0	89	0.00	12.21
71	M	cis-1,3-dichloropropene	0.429	0.474	-10.5	89	0.00	12.34
72	M	4-methyl-2-pentanone	0.098	0.109	-11.2	87	0.00	12.46
73		3-methyl-1-butanol	0.015	0.016	-6.7	87	0.00	12.47
74	I	chlorobenzene-d5	1.000	1.000	0.0	87	0.00	14.26
75	S	toluene-d8	1.309	1.283	2.0	84	0.00	12.65
76		toluene	0.777	0.783	-0.8	87	0.00	12.73
77		ethyl methacrylate	0.341	0.349	-2.3	88	0.00	12.94
78		trans-1,3-dichloropropene	0.423	0.463	-9.5	92	0.00	12.94
79		1,1,2-trichloroethane	0.204	0.226	-10.8	90	0.00	13.17
80	M	tetrachloroethene	0.312	0.290	7.1	82	0.00	13.31
81		2-hexanone	0.098	0.101	-3.1	84	0.00	13.35
82	M	1,3-dichloropropane	0.435	0.477	-9.7	98	0.00	13.36
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol	0.042	0.036	14.3	80	0.00	13.55
85	M	dibromochloromethane	0.334	0.346	-3.6	89	0.00	13.62
86	M	1,2-dibromoethane	0.267	0.291	-9.0	91	0.00	13.78
87	M	chlorobenzene	0.872	0.930	-6.7	91	0.00	14.29
88	M	1,1,1,2-tetrachloroethane	0.450	0.439	2.4	85	0.00	14.36
89	M	ethylbenzene	1.441	1.551	-7.6	89	0.00	14.36
90	M	m,p-xylene	0.624	0.600	3.8	85	0.00	14.49
91	M	o-xylene	0.645	0.636	1.4	84	0.00	14.92
92	M	styrene	0.918	0.993	-8.2	88	0.00	14.93
93		n-amyl acetate		----------NA----------				
94	M	bromoform	0.244	0.245	-0.4	83	0.00	15.18
95		isopropylbenzene	1.686	1.749	-3.7	82	0.00	15.30
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	82	0.00	16.75
97	S	4-bromofluorobenzene (s)	0.695	0.723	-4.0	87	0.00	15.51
98	M	bromobenzene	0.622	0.620	0.3	82	0.00	15.70

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11233-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266565.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

99	M	1,1,2,2-tetrachloroethane	0.537	0.603	-12.3	91	0.00	15.60
100	M	trans-1,4-dichloro-2-bute	0.136	0.130	4.4	82	0.00	15.64
101	M	1,2,3-trichloropropane	0.177	0.177	0.0	90	0.00	15.70
102	M	n-propylbenzene	0.646	0.638	1.2	80	0.00	15.75
103	M	2-chlorotoluene	0.596	0.609	-2.2	81	0.00	15.88
104	M	4-chlorotoluene	0.548	0.602	-9.9	89	0.00	16.00
105	M	1,3,5-trimethylbenzene	2.050	2.365	-15.4	85	0.00	15.91
106	M	tert-butylbenzene	0.495	0.468	5.5	74	0.00	16.27
107	M	1,2,4-trimethylbenzene	2.130	2.331	-9.4	83	0.00	16.33
108	M	sec-butylbenzene	2.649	3.044	-14.9	82	0.00	16.50
109	M	1,3-dichlorobenzene	1.332	1.377	-3.4	86	0.00	16.68
110	M	p-isopropyltoluene	2.384	2.643	-10.9	81	0.00	16.64
111	M	1,4-dichlorobenzene	1.368	1.399	-2.3	83	0.00	16.79
112	M	1,2-dichlorobenzene	1.457	1.458	-0.1	83	0.00	17.18
113	M	benzyl chloride	1.306	1.325	-1.5	82	0.00	16.89
114		indane		----------NA----------				
115	M	n-butylbenzene	1.297	1.399	-7.9	83	0.00	17.09
116		hexachloroethane	0.571	0.573	-0.4	81	0.00	17.50
117	M	1,2-dibromo-3-chloropropa	0.238	0.191	19.7	74	0.00	18.03
118		Nitrobenzene	0.072	0.045	37.5#	56	0.00	18.23
119		1,3,5-trichlorobenzene	1.677	1.706	-1.7	79	0.00	18.22
120	M	1,2,4-trichlorobenzene	1.666	1.569	5.8	76	0.00	18.92
121	M	hexachlorobutadiene	0.904	0.847	6.3	74	0.00	19.04
122	M	naphthalene	3.141	3.221	-2.5	76	0.00	19.24
123	M	1,2,3-trichlorobenzene	1.584	1.556	1.8	77	0.00	19.47
124		ETHYLENIMINE		----------NA----------				
125		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Wed Dec 13 17:05:38 2017

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11237-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266653.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\vn11237\n266653.d Vial: 2
Acq On : 14 Dec 2017 9:15 am Operator: CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Fri Dec 01 16:37:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	73	0.03	7.73
2	M	tertiary butyl alcohol	1.016	1.046	-3.0	85	0.01	7.84
3	M	1,4-dioxane	0.085	0.073	14.1	68	0.00	11.64
4	I	pentafluorobenzene	1.000	1.000	0.0	73	0.00	10.05
5		freon 143a		----------NA----------				
6		freon 142b		----------NA----------				
7	M	chlorodifluoromethane	0.661	0.918	-38.9#	99	0.02	4.03
8	M	dichlorodifluoromethane	1.059	1.006	5.0	66	0.00	4.00
9	M	chloromethane	0.776	0.829	-6.8	79	0.00	4.33
10	M	vinyl chloride	1.003	1.079	-7.6	77	0.00	4.63
11		1,3-butadiene		----------NA----------				
12	M	bromomethane	0.631	0.662	-4.9	78	0.00	5.33
13	M	chloroethane	0.553	0.610	-10.3	82	0.02	5.56
14	M	trichlorofluoromethane	1.126	1.213	-7.7	75	0.02	6.08
15	M	pentane		----------NA----------				
16		freon 141b		----------NA----------				
17	M	ethyl ether	0.286	0.342	-19.6	83	0.00	6.52
18	M	acrolein	0.085	0.089	-4.7	75	0.01	6.78
19	M	1,1-dichloroethene	0.490	0.466	4.9	69	0.00	6.96
20	M	acetone	0.053	0.062	-17.0	97	0.01	7.00
21		freon 113	0.529	0.646	-22.1	84	0.00	6.99
22	M	acetonitrile		----------NA----------				
23	M	iodomethane	0.844	0.971	-15.0	82	0.00	7.23
24	M	carbon disulfide	1.529	1.963	-28.4	91	0.00	7.37
25	M	methylene chloride	0.469	0.559	-19.2	85	0.00	7.75
26	M	methyl acetate	0.262	0.282	-7.6	77	0.00	7.49
27	M	methyl tert butyl ether	1.411	1.665	-18.0	82	0.00	8.12
28	M	trans-1,2-dichloroethene	0.462	0.475	-2.8	81	0.00	8.15
29		acrylonitrile	0.157	0.192	-22.3	87	0.00	8.07
30		hexane		----------NA----------				
31	M	di-isopropyl ether	1.289	1.431	-11.0	82	0.00	8.75
32	M	1,1-dichloroethane	0.725	0.837	-15.4	85	0.00	8.76
33	M	chloroprene	0.564	0.591	-4.8	76	0.00	8.85
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether	1.299	1.577	-21.4	81	0.01	9.23
36		2-butanone	0.042	0.048	-14.3	79	0.01	9.44
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane	0.815	1.016	-24.7	87	0.00	9.52
39	M	cis-1,2-dichloroethene	0.501	0.506	-1.0	78	0.00	9.48
40		methyl acrylate	0.051	0.060	-17.6	83	0.00	9.54
41	M	propionitrile	0.052	0.057	-9.6	81	0.00	9.52

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11237-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266653.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

42	M	bromochloromethane	0.239	0.260	-8.8	82	0.00	9.79
43	M	tetrahydrofuran	0.048	0.046	4.2	77	0.00	9.80
44	M	chloroform	0.506	0.528	-4.3	80	0.00	9.88
45		t-butyl formate	0.127	0.149	-17.3	97	0.00	9.92
46	S	dibromofluoromethane (s)	0.466	0.518	-11.2	80	0.00	10.08
47	M	methacrylonitrile	0.140	0.142	-1.4	74	0.00	9.71
48	M	1,1,1-trichloroethane	0.919	1.026	-11.6	84	0.00	10.13
49	M	cyclohexane	0.862	0.771	10.6	60	0.00	10.23
50		1,1-dichloropropene	0.522	0.584	-11.9	80	0.00	10.30
51		carbon tetrachloride	0.815	0.864	-6.0	76	0.00	10.32
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	75	0.00	10.99
54	S	1,2-dichloroethane-d4 (s)	0.369	0.407	-10.3	83	0.00	10.50
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane	1.189	1.230	-3.4	71	0.00	10.65
57	M	benzene	1.119	1.238	-10.6	80	0.00	10.55
58	M	tert-amyl methyl ether	0.982	1.084	-10.4	79	0.00	10.65
59	M	1,2-dichloroethane	0.396	0.417	-5.3	80	0.00	10.59
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene	0.286	0.296	-3.5	76	0.00	11.28
63	M	methyl methacrylate	0.292	0.298	-2.1	71	0.00	11.57
64	M	1,2-dichloropropane	0.280	0.323	-15.4	83	0.00	11.59
65	M	methylcyclohexane	0.698	0.711	-1.9	70	0.00	11.58
66		dibromomethane	0.178	0.187	-5.1	82	0.00	11.70
67	M	bromodichloromethane	0.392	0.409	-4.3	78	0.00	11.86
68		2-nitropropane	0.066	0.102	-54.5#	132	0.00	12.09
69		2-chloroethyl vinyl ether	0.120	0.133	-10.8	76	0.00	12.12
70		epichlorohydrin	0.025	0.024	4.0	73	0.00	12.21
71	M	cis-1,3-dichloropropene	0.429	0.440	-2.6	75	0.00	12.34
72	M	4-methyl-2-pentanone	0.098	0.107	-9.2	78	0.00	12.46
73		3-methyl-1-butanol	0.015	0.015	0.0	77	0.00	12.47
74	I	chlorobenzene-d5	1.000	1.000	0.0	81	0.00	14.26
75	S	toluene-d8	1.309	1.283	2.0	79	0.00	12.65
76		toluene	0.777	0.765	1.5	80	0.00	12.73
77		ethyl methacrylate	0.341	0.307	10.0	73	0.00	12.94
78		trans-1,3-dichloropropene	0.423	0.416	1.7	77	0.00	12.94
79		1,1,2-trichloroethane	0.204	0.208	-2.0	77	0.00	13.17
80	M	tetrachloroethene	0.312	0.284	9.0	75	0.00	13.31
81		2-hexanone	0.098	0.096	2.0	75	0.00	13.35
82	M	1,3-dichloropropane	0.435	0.439	-0.9	85	0.00	13.36
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol	0.042	0.033	21.4	69	0.00	13.55
85	M	dibromochloromethane	0.334	0.317	5.1	76	0.00	13.62
86	M	1,2-dibromoethane	0.267	0.268	-0.4	78	0.00	13.78
87	M	chlorobenzene	0.872	0.869	0.3	80	0.00	14.29
88	M	1,1,1,2-tetrachloroethane	0.450	0.436	3.1	79	0.00	14.36
89	M	ethylbenzene	1.441	1.447	-0.4	78	0.00	14.36
90	M	m,p-xylene	0.624	0.574	8.0	76	0.00	14.49
91	M	o-xylene	0.645	0.621	3.7	76	0.00	14.92
92	M	styrene	0.918	0.928	-1.1	77	0.00	14.93
93		n-amyl acetate		----------NA----------				
94	M	bromoform	0.244	0.226	7.4	72	0.00	15.17
95		isopropylbenzene	1.686	1.691	-0.3	75	0.00	15.30
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	78	0.00	16.76
97	S	4-bromofluorobenzene (s)	0.695	0.715	-2.9	83	0.00	15.51
98	M	bromobenzene	0.622	0.599	3.7	76	0.00	15.70

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11237-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266653.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

99	M	1,1,2,2-tetrachloroethane	0.537	0.555	-3.4	80	0.00	15.61
100	M	trans-1,4-dichloro-2-bute	0.136	0.117	14.0	71	0.00	15.64
101	M	1,2,3-trichloropropane	0.177	0.150	15.3	73	0.00	15.69
102	M	n-propylbenzene	0.646	0.638	1.2	77	0.00	15.74
103	M	2-chlorotoluene	0.596	0.576	3.4	74	0.00	15.88
104	M	4-chlorotoluene	0.548	0.549	-0.2	78	0.00	16.00
105	M	1,3,5-trimethylbenzene	2.050	2.209	-7.8	76	0.00	15.91
106	M	tert-butylbenzene	0.495	0.448	9.5	68	0.00	16.27
107	M	1,2,4-trimethylbenzene	2.130	2.277	-6.9	77	0.00	16.33
108	M	sec-butylbenzene	2.649	2.846	-7.4	74	0.00	16.50
109	M	1,3-dichlorobenzene	1.332	1.353	-1.6	81	0.00	16.68
110	M	p-isopropyltoluene	2.384	2.450	-2.8	72	0.00	16.64
111	M	1,4-dichlorobenzene	1.368	1.354	1.0	77	0.00	16.79
112	M	1,2-dichlorobenzene	1.457	1.427	2.1	78	0.00	17.19
113	M	benzyl chloride	1.306	1.257	3.8	74	0.00	16.89
114		indane		----------NA----------				
115	M	n-butylbenzene	1.297	1.278	1.5	73	0.00	17.09
116		hexachloroethane	0.571	0.509	10.9	69	0.00	17.50
117	M	1,2-dibromo-3-chloropropa	0.238	0.182	23.5	67	0.00	18.02
118		Nitrobenzene	0.072	0.041	43.1#	49#	0.00	18.23
119		1,3,5-trichlorobenzene	1.677	1.625	3.1	72	0.00	18.22
120	M	1,2,4-trichlorobenzene	1.666	1.438	13.7	67	0.00	18.92
121	M	hexachlorobutadiene	0.904	0.745	17.6	62	0.00	19.04
122	M	naphthalene	3.141	2.906	7.5	66	0.00	19.24
123	M	1,2,3-trichlorobenzene	1.584	1.418	10.5	67	0.00	19.47
124		ETHYLENIMINE		----------NA----------				
125		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Mon Dec 18 00:30:20 2017

6.9.5

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11239-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266697.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\vn11239\n266697.d Vial: 3
Acq On : 15 Dec 2017 8:15 am Operator: CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23129,VN11239,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Fri Dec 01 16:37:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	66	0.02	7.72
2	M	tertiary butyl alcohol	1.016	1.060	-4.3	77	0.00	7.84
3	M	1,4-dioxane	0.085	0.084	1.2	70	0.00	11.64
4	I	pentafluorobenzene	1.000	1.000	0.0	69	0.00	10.05
5		freon 143a		----------NA----------				
6		freon 142b		----------NA----------				
7	M	chlorodifluoromethane	0.661	1.187	-79.6#	121	0.00	4.02
8	M	dichlorodifluoromethane	1.059	1.076	-1.6	67	0.00	4.00
9	M	chloromethane	0.776	0.951	-22.6	86	0.02	4.35
10	M	vinyl chloride	1.003	1.141	-13.8	77	0.00	4.63
11		1,3-butadiene	0.000	0.729	0.0	0#	-0.05	4.69
12	M	bromomethane	0.631	0.760	-20.4	85	0.02	5.34
13	M	chloroethane	0.553	0.627	-13.4	80	0.01	5.55
14	M	trichlorofluoromethane	1.126	1.167	-3.6	68	0.00	6.06
15	M	pentane		----------NA----------				
16		freon 141b		----------NA----------				
17	M	ethyl ether	0.286	0.350	-22.4	81	0.00	6.51
18	M	acrolein	0.085	0.092	-8.2	73	0.00	6.77
19	M	1,1-dichloroethene	0.490	0.532	-8.6	75	0.00	6.96
20	M	acetone	0.053	0.041	22.6	60	0.00	6.98
21		freon 113	0.529	0.747	-41.2#	92	0.00	6.99
22	M	acetonitrile		----------NA----------				
23	M	iodomethane	0.844	1.061	-25.7	85	0.00	7.23
24	M	carbon disulfide	1.529	2.144	-40.2#	94	0.00	7.37
25	M	methylene chloride	0.469	0.614	-30.9	89	0.00	7.74
26	M	methyl acetate	0.262	0.283	-8.0	73	0.00	7.49
27	M	methyl tert butyl ether	1.411	1.702	-20.6	80	0.00	8.12
28	M	trans-1,2-dichloroethene	0.462	0.522	-13.0	84	0.00	8.15
29		acrylonitrile	0.157	0.182	-15.9	78	0.00	8.07
30		hexane		----------NA----------				
31	M	di-isopropyl ether	1.289	1.657	-28.5	90	0.00	8.75
32	M	1,1-dichloroethane	0.725	0.877	-21.0	84	0.00	8.75
33	M	chloroprene	0.564	0.672	-19.1	82	0.00	8.85
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether	1.299	1.610	-23.9	78	0.00	9.22
36		2-butanone	0.042	0.040	4.8	61	0.00	9.43
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane	0.815	1.096	-34.5	88	0.00	9.51
39	M	cis-1,2-dichloroethene	0.501	0.537	-7.2	79	0.00	9.48
40		methyl acrylate	0.051	0.051	0.0	67	0.00	9.53
41	M	propionitrile	0.052	0.067	-28.8	89	0.00	9.52

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11239-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266697.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

42	M	bromochloromethane	0.239	0.282	-18.0	84	0.00	9.78
43	M	tetrahydrofuran	0.048	0.048	0.0	75	0.00	9.79
44	M	chloroform	0.506	0.562	-11.1	80	0.00	9.88
45		t-butyl formate	0.127	0.163	-28.3	100	0.00	9.91
46	S	dibromofluoromethane (s)	0.466	0.490	-5.2	71	0.00	10.08
47	M	methacrylonitrile	0.140	0.162	-15.7	80	0.00	9.71
48	M	1,1,1-trichloroethane	0.919	1.088	-18.4	85	0.00	10.12
49	M	cyclohexane	0.862	0.844	2.1	62	0.00	10.23
50		1,1-dichloropropene	0.522	0.612	-17.2	80	0.00	10.30
51		carbon tetrachloride	0.815	0.998	-22.5	83	0.00	10.32
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	72	0.00	10.99
54	S	1,2-dichloroethane-d4 (s)	0.369	0.398	-7.9	78	0.00	10.50
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane	1.189	1.315	-10.6	73	0.00	10.65
57	M	benzene	1.119	1.325	-18.4	82	0.00	10.55
58	M	tert-amyl methyl ether	0.982	1.126	-14.7	78	0.00	10.64
59	M	1,2-dichloroethane	0.396	0.463	-16.9	86	0.00	10.59
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene	0.286	0.311	-8.7	77	0.00	11.28
63	M	methyl methacrylate	0.292	0.310	-6.2	71	0.00	11.57
64	M	1,2-dichloropropane	0.280	0.339	-21.1	84	0.00	11.59
65	M	methylcyclohexane	0.698	0.774	-10.9	74	0.00	11.58
66		dibromomethane	0.178	0.207	-16.3	87	0.00	11.70
67	M	bromodichloromethane	0.392	0.435	-11.0	80	0.00	11.86
68		2-nitropropane	0.066	0.105	-59.1#	131	0.00	12.09
69		2-chloroethyl vinyl ether	0.120	0.150	-25.0	83	0.00	12.12
70		epichlorohydrin	0.025	0.025	0.0	72	0.00	12.20
71	M	cis-1,3-dichloropropene	0.429	0.483	-12.6	80	0.00	12.33
72	M	4-methyl-2-pentanone	0.098	0.111	-13.3	78	0.00	12.46
73		3-methyl-1-butanol	0.015	0.016	-6.7	79	0.00	12.47
74	I	chlorobenzene-d5	1.000	1.000	0.0	78	0.00	14.25
75	S	toluene-d8	1.309	1.271	2.9	75	0.00	12.65
76		toluene	0.777	0.825	-6.2	83	0.00	12.73
77		ethyl methacrylate	0.341	0.337	1.2	77	0.00	12.94
78		trans-1,3-dichloropropene	0.423	0.466	-10.2	83	0.00	12.94
79		1,1,2-trichloroethane	0.204	0.229	-12.3	82	0.00	13.17
80	M	tetrachloroethene	0.312	0.304	2.6	78	0.00	13.31
81		2-hexanone	0.098	0.097	1.0	73	0.00	13.35
82	M	1,3-dichloropropane	0.435	0.481	-10.6	89	0.00	13.36
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol	0.042	0.035	16.7	72	0.00	13.55
85	M	dibromochloromethane	0.334	0.356	-6.6	82	0.00	13.62
86	M	1,2-dibromoethane	0.267	0.282	-5.6	79	0.00	13.78
87	M	chlorobenzene	0.872	0.979	-12.3	86	0.00	14.29
88	M	1,1,1,2-tetrachloroethane	0.450	0.462	-2.7	80	0.00	14.36
89	M	ethylbenzene	1.441	1.630	-13.1	84	0.00	14.36
90	M	m,p-xylene	0.624	0.630	-1.0	80	0.00	14.49
91	M	o-xylene	0.645	0.676	-4.8	80	0.00	14.92
92	M	styrene	0.918	1.045	-13.8	83	0.00	14.93
93		n-amyl acetate		----------NA----------				
94	M	bromoform	0.244	0.251	-2.9	76	0.00	15.17
95		isopropylbenzene	1.686	1.849	-9.7	78	0.00	15.29
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	77	0.00	16.75
97	S	4-bromofluorobenzene (s)	0.695	0.696	-0.1	80	0.00	15.51
98	M	bromobenzene	0.622	0.624	-0.3	78	0.00	15.70

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11239-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266697.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

99	M	1,1,2,2-tetrachloroethane	0.537	0.580	-8.0	83	0.00	15.60
100	M	trans-1,4-dichloro-2-bute	0.136	0.129	5.1	77	0.00	15.64
101	M	1,2,3-trichloropropane	0.177	0.175	1.1	84	0.00	15.69
102	M	n-propylbenzene	0.646	0.668	-3.4	80	0.00	15.74
103	M	2-chlorotoluene	0.596	0.631	-5.9	80	0.00	15.88
104	M	4-chlorotoluene	0.548	0.613	-11.9	86	0.00	16.00
105	M	1,3,5-trimethylbenzene	2.050	2.343	-14.3	80	0.00	15.91
106	M	tert-butylbenzene	0.495	0.472	4.6	71	0.00	16.27
107	M	1,2,4-trimethylbenzene	2.130	2.441	-14.6	82	0.00	16.33
108	M	sec-butylbenzene	2.649	3.054	-15.3	78	0.00	16.50
109	M	1,3-dichlorobenzene	1.332	1.471	-10.4	87	0.00	16.68
110	M	p-isopropyltoluene	2.384	2.746	-15.2	79	0.00	16.64
111	M	1,4-dichlorobenzene	1.368	1.442	-5.4	81	0.00	16.79
112	M	1,2-dichlorobenzene	1.457	1.509	-3.6	81	0.00	17.18
113	M	benzyl chloride	1.306	1.313	-0.5	77	0.00	16.89
114		indane		----------NA----------				
115	M	n-butylbenzene	1.297	1.426	-9.9	80	0.00	17.09
116		hexachloroethane	0.571	0.511	10.5	68	0.00	17.50
117	M	1,2-dibromo-3-chloropropa	0.238	0.183	23.1	67	0.00	18.02
118		Nitrobenzene	0.072	0.048	33.3	58	0.00	18.23
119		1,3,5-trichlorobenzene	1.677	1.772	-5.7	78	0.00	18.22
120	M	1,2,4-trichlorobenzene	1.666	1.535	7.9	71	0.00	18.91
121	M	hexachlorobutadiene	0.904	0.824	8.8	68	0.00	19.03
122	M	naphthalene	3.141	3.135	0.2	71	0.00	19.23
123	M	1,2,3-trichlorobenzene	1.584	1.469	7.3	69	0.00	19.47
124		ETHYLENIMINE		----------NA----------				
125		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Tue Dec 19 02:20:53 2017

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11241-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266749.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\vn11241\n266749.d Vial: 5
Acq On : 18 Dec 2017 9:36 am Operator: CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Fri Dec 01 16:37:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	60	0.01	7.71
2	M	tertiary butyl alcohol	1.016	0.920	9.4	61	0.00	7.82
3	M	1,4-dioxane	0.085	0.072	15.3	54	0.00	11.64
4	I	pentafluorobenzene	1.000	1.000	0.0	71	0.00	10.06
5		freon 143a	0.906	0.750	17.2	54	0.02	3.69
6		freon 142b	0.832	0.842	-1.2	69	0.01	4.28
7	M	chlorodifluoromethane	0.661	0.929	-40.5#	97	0.00	4.03
8	M	dichlorodifluoromethane	1.059	0.837	21.0	53	0.00	4.02
9	M	chloromethane	0.776	0.823	-6.1	76	0.00	4.33
10	M	vinyl chloride	1.003	0.997	0.6	69	0.00	4.64
11		1,3-butadiene		----------NA----------				
12	M	bromomethane	0.631	0.641	-1.6	73	0.00	5.33
13	M	chloroethane	0.553	0.537	2.9	70	0.00	5.55
14	M	trichlorofluoromethane	1.126	1.102	2.1	66	0.03	6.09
15	M	pentane		----------NA----------				
16		freon 141b	0.815	0.801	1.7	70	0.01	6.56
17	M	ethyl ether	0.286	0.302	-5.6	71	0.00	6.52
18	M	acrolein	0.085	0.068	20.0	56	0.00	6.77
19	M	1,1-dichloroethene	0.490	0.478	2.4	69	0.00	6.97
20	M	acetone	0.053	0.035	34.0	53	0.00	6.99
21		freon 113	0.529	0.579	-9.5	73	0.00	6.98
22	M	acetonitrile		----------NA----------				
23	M	iodomethane	0.844	0.870	-3.1	71	0.00	7.23
24	M	carbon disulfide	1.529	1.796	-17.5	80	0.00	7.36
25	M	methylene chloride	0.469	0.508	-8.3	75	0.00	7.74
26	M	methyl acetate	0.262	0.238	9.2	63	0.00	7.49
27	M	methyl tert butyl ether	1.411	1.414	-0.2	68	0.00	8.13
28	M	trans-1,2-dichloroethene	0.462	0.422	8.7	69	0.00	8.14
29		acrylonitrile	0.157	0.144	8.3	63	0.00	8.07
30		hexane		----------NA----------				
31	M	di-isopropyl ether	1.289	1.319	-2.3	73	0.00	8.75
32	M	1,1-dichloroethane	0.725	0.728	-0.4	72	0.00	8.75
33	M	chloroprene	0.564	0.541	4.1	67	0.00	8.85
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether	1.299	1.334	-2.7	66	0.00	9.22
36		2-butanone	0.042	0.037	11.9	58	0.00	9.43
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane	0.815	0.926	-13.6	76	0.00	9.51
39	M	cis-1,2-dichloroethene	0.501	0.456	9.0	68	0.00	9.49
40		methyl acrylate	0.051	0.045	11.8	60	0.00	9.54
41	M	propionitrile	0.052	0.054	-3.8	73	0.00	9.52

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11241-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266749.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

42	M	bromochloromethane	0.239	0.230	3.8	70	0.00	9.78
43	M	tetrahydrofuran	0.048	0.037	22.9	60	0.00	9.79
44	M	chloroform	0.506	0.481	4.9	70	0.00	9.88
45		t-butyl formate	0.127	0.126	0.8	79	0.00	9.92
46	S	dibromofluoromethane (s)	0.466	0.481	-3.2	72	0.00	10.08
47	M	methacrylonitrile	0.140	0.120	14.3	60	0.00	9.71
48	M	1,1,1-trichloroethane	0.919	0.938	-2.1	74	0.00	10.12
49	M	cyclohexane	0.862	0.733	15.0	55	0.00	10.23
50		1,1-dichloropropene	0.522	0.506	3.1	67	0.00	10.30
51		carbon tetrachloride	0.815	0.818	-0.4	69	0.00	10.32
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	72	0.00	10.98
54	S	1,2-dichloroethane-d4 (s)	0.369	0.392	-6.2	76	0.00	10.50
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane	1.189	1.085	8.7	59	0.00	10.65
57	M	benzene	1.119	1.118	0.1	69	0.00	10.55
58	M	tert-amyl methyl ether	0.982	0.950	3.3	66	0.00	10.64
59	M	1,2-dichloroethane	0.396	0.371	6.3	68	0.00	10.59
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene	0.286	0.274	4.2	67	0.00	11.29
63	M	methyl methacrylate	0.292	0.267	8.6	60	0.00	11.57
64	M	1,2-dichloropropane	0.280	0.280	0.0	69	0.00	11.59
65	M	methylcyclohexane	0.698	0.644	7.7	61	0.00	11.58
66		dibromomethane	0.178	0.177	0.6	74	0.00	11.70
67	M	bromodichloromethane	0.392	0.379	3.3	69	0.00	11.86
68		2-nitropropane	0.066	0.090	-36.4#	112	0.00	12.08
69		2-chloroethyl vinyl ether	0.120	0.121	-0.8	66	0.00	12.12
70		epichlorohydrin	0.025	0.022	12.0	63	0.00	12.21
71	M	cis-1,3-dichloropropene	0.429	0.409	4.7	67	0.00	12.34
72	M	4-methyl-2-pentanone	0.098	0.090	8.2	63	0.00	12.46
73		3-methyl-1-butanol	0.015	0.014	6.7	67	0.00	12.47
74	I	chlorobenzene-d5	1.000	1.000	0.0	73	0.00	14.26
75	S	toluene-d8	1.309	1.269	3.1	71	0.00	12.65
76		toluene	0.777	0.720	7.3	68	0.00	12.73
77		ethyl methacrylate	0.341	0.292	14.4	63	0.00	12.94
78		trans-1,3-dichloropropene	0.423	0.403	4.7	68	0.00	12.94
79		1,1,2-trichloroethane	0.204	0.199	2.5	67	0.00	13.17
80	M	tetrachloroethene	0.312	0.268	14.1	64	0.00	13.30
81		2-hexanone	0.098	0.077	21.4	54	0.00	13.36
82	M	1,3-dichloropropane	0.435	0.398	8.5	69	0.00	13.36
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol	0.042	0.031	26.2	60	0.00	13.54
85	M	dibromochloromethane	0.334	0.299	10.5	65	0.00	13.62
86	M	1,2-dibromoethane	0.267	0.253	5.2	67	0.00	13.78
87	M	chlorobenzene	0.872	0.845	3.1	70	0.00	14.29
88	M	1,1,1,2-tetrachloroethane	0.450	0.412	8.4	68	0.00	14.37
89	M	ethylbenzene	1.441	1.423	1.2	69	0.00	14.36
90	M	m,p-xylene	0.624	0.565	9.5	67	0.00	14.49
91	M	o-xylene	0.645	0.588	8.8	65	0.00	14.92
92	M	styrene	0.918	0.882	3.9	66	0.00	14.93
93		n-amyl acetate		----------NA----------				
94	M	bromoform	0.244	0.221	9.4	63	0.00	15.17
95		isopropylbenzene	1.686	1.599	5.2	64	0.00	15.30
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	70	0.00	16.76
97	S	4-bromofluorobenzene (s)	0.695	0.719	-3.5	74	0.00	15.51
98	M	bromobenzene	0.622	0.588	5.5	66	0.00	15.70

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11241-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266749.D
Project: SECORINI: Zanesville Well Field, [redacted] Zanesville, OH

99	M	1,1,2,2-tetrachloroethane	0.537	0.516	3.9	66	0.00	15.61
100	M	trans-1,4-dichloro-2-bute		----------NA----------				
101	M	1,2,3-trichloropropane	0.177	0.145	18.1	62	0.00	15.69
102	M	n-propylbenzene	0.646	0.624	3.4	67	0.00	15.74
103	M	2-chlorotoluene	0.596	0.579	2.9	66	0.00	15.88
104	M	4-chlorotoluene	0.548	0.546	0.4	69	0.00	16.00
105	M	1,3,5-trimethylbenzene	2.050	2.200	-7.3	67	0.00	15.91
106	M	tert-butylbenzene	0.495	0.425	14.1	57	0.00	16.27
107	M	1,2,4-trimethylbenzene	2.130	2.204	-3.5	66	0.00	16.32
108	M	sec-butylbenzene	2.649	2.777	-4.8	64	0.00	16.51
109	M	1,3-dichlorobenzene	1.332	1.312	1.5	70	0.00	16.68
110	M	p-isopropyltoluene	2.384	2.446	-2.6	64	0.00	16.65
111	M	1,4-dichlorobenzene	1.368	1.268	7.3	64	0.00	16.78
112	M	1,2-dichlorobenzene	1.457	1.417	2.7	69	0.00	17.19
113	M	benzyl chloride	1.306	1.181	9.6	62	0.00	16.89
114		indane		----------NA----------				
115	M	n-butylbenzene	1.297	1.370	-5.6	69	0.00	17.09
116		hexachloroethane	0.571	0.498	12.8	60	0.00	17.49
117	M	1,2-dibromo-3-chloropropa	0.238	0.176	26.1	58	0.00	18.02
118		Nitrobenzene	0.072	0.050	30.6	53	0.00	18.24
119		1,3,5-trichlorobenzene	1.677	1.599	4.7	63	0.00	18.22
120	M	1,2,4-trichlorobenzene	1.666	1.388	16.7	58	0.00	18.92
121	M	hexachlorobutadiene	0.904	0.782	13.5	58	0.00	19.04
122	M	naphthalene	3.141	2.656	15.4	54	0.00	19.24
123	M	1,2,3-trichlorobenzene	1.584	1.324	16.4	56	0.00	19.47
124		ETHYLENIMINE		----------NA----------				
125		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Wed Dec 20 00:18:04 2017

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11243-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266798.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\vn11243\n266798.d Vial: 5
Acq On : 19 Dec 2017 11:04 am Operator: CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
Last Update : Fri Dec 01 16:37:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	67	0.00	7.70
2	M	tertiary butyl alcohol	1.016	1.009	0.7	75	0.00	7.84
3	M	1,4-dioxane	0.085	0.065	23.5	56	0.00	11.64
4	I	pentafluorobenzene	1.000	1.000	0.0	69	0.00	10.05
5		freon 143a		----------NA----------				
6		freon 142b		----------NA----------				
7	M	chlorodifluoromethane	0.661	0.917	-38.7#	93	0.01	4.03
8	M	dichlorodifluoromethane	1.059	0.905	14.5	56	0.00	4.01
9	M	chloromethane	0.776	0.944	-21.6	84	0.00	4.34
10	M	vinyl chloride	1.003	1.211	-20.7	81	0.00	4.64
11		1,3-butadiene		----------NA----------				
12	M	bromomethane	0.631	0.685	-8.6	75	0.00	5.33
13	M	chloroethane	0.553	0.604	-9.2	76	0.00	5.55
14	M	trichlorofluoromethane	1.126	1.206	-7.1	70	0.02	6.08
15	M	pentane		----------NA----------				
16		freon 141b		----------NA----------				
17	M	ethyl ether	0.286	0.339	-18.5	78	0.00	6.52
18	M	acrolein	0.085	0.082	3.5	65	0.02	6.78
19	M	1,1-dichloroethene	0.490	0.472	3.7	66	0.00	6.97
20	M	acetone	0.053	0.038	28.3	55	0.01	7.00
21		freon 113	0.529	0.622	-17.6	76	0.01	6.99
22	M	acetonitrile		----------NA----------				
23	M	iodomethane	0.844	0.959	-13.6	76	0.00	7.23
24	M	carbon disulfide	1.529	1.956	-27.9	85	0.00	7.37
25	M	methylene chloride	0.469	0.546	-16.4	78	0.00	7.75
26	M	methyl acetate	0.262	0.267	-1.9	68	0.00	7.49
27	M	methyl tert butyl ether	1.411	1.600	-13.4	74	0.00	8.13
28	M	trans-1,2-dichloroethene	0.462	0.445	3.7	71	0.00	8.15
29		acrylonitrile	0.157	0.186	-18.5	79	0.00	8.07
30		hexane		----------NA----------				
31	M	di-isopropyl ether	1.289	1.531	-18.8	82	0.00	8.75
32	M	1,1-dichloroethane	0.725	0.830	-14.5	79	0.00	8.76
33	M	chloroprene	0.564	0.673	-19.3	81	0.00	8.85
34	M	vinyl acetate		----------NA----------				
35	M	ethyl tert-butyl ether	1.299	1.608	-23.8	77	0.00	9.22
36		2-butanone	0.042	0.037	11.9	57	0.00	9.43
37	M	ethyl acetate		----------NA----------				
38	M	2,2-dichloropropane	0.815	0.952	-16.8	76	0.01	9.52
39	M	cis-1,2-dichloroethene	0.501	0.496	1.0	72	0.00	9.48
40		methyl acrylate	0.051	0.055	-7.8	72	0.00	9.53
41	M	propionitrile	0.052	0.052	0.0	69	0.00	9.52

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11243-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266798.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

42	M	bromochloromethane	0.239	0.225	5.9	66	0.00	9.78
43	M	tetrahydrofuran	0.048	0.043	10.4	67	0.00	9.80
44	M	chloroform	0.506	0.516	-2.0	73	0.01	9.89
45		t-butyl formate	0.127	0.158	-24.4	96	0.00	9.92
46	S	dibromofluoromethane (s)	0.466	0.491	-5.4	71	0.00	10.07
47	M	methacrylonitrile	0.140	0.142	-1.4	70	0.00	9.71
48	M	1,1,1-trichloroethane	0.919	0.962	-4.7	74	0.00	10.13
49	M	cyclohexane	0.862	0.812	5.8	60	0.00	10.23
50		1,1-dichloropropene	0.522	0.569	-9.0	73	0.00	10.30
51		carbon tetrachloride	0.815	0.842	-3.3	69	0.00	10.32
52		isobutyl alcohol		----------NA----------				
53	I	1,4-difluorobenzene	1.000	1.000	0.0	72	0.00	10.98
54	S	1,2-dichloroethane-d4 (s)	0.369	0.400	-8.4	78	0.00	10.50
55		isopropyl acetate		----------NA----------				
56		2,2,4-trimethylpentane	1.189	1.342	-12.9	73	0.00	10.65
57	M	benzene	1.119	1.179	-5.4	73	0.00	10.55
58	M	tert-amyl methyl ether	0.982	1.065	-8.5	74	0.00	10.65
59	M	1,2-dichloroethane	0.396	0.387	2.3	71	0.00	10.59
60		heptane		----------NA----------				
61		n-butyl alcohol		----------NA----------				
62	M	trichloroethene	0.286	0.294	-2.8	72	0.00	11.28
63	M	methyl methacrylate	0.292	0.305	-4.5	69	0.00	11.57
64	M	1,2-dichloropropane	0.280	0.309	-10.4	76	0.00	11.59
65	M	methylcyclohexane	0.698	0.693	0.7	65	0.00	11.58
66		dibromomethane	0.178	0.166	6.7	69	0.00	11.70
67	M	bromodichloromethane	0.392	0.394	-0.5	72	0.00	11.86
68		2-nitropropane	0.066	0.093	-40.9#	115	0.00	12.08
69		2-chloroethyl vinyl ether	0.120	0.132	-10.0	72	0.00	12.12
70		epichlorohydrin	0.025	0.023	8.0	66	0.00	12.21
71	M	cis-1,3-dichloropropene	0.429	0.440	-2.6	72	0.00	12.33
72	M	4-methyl-2-pentanone	0.098	0.100	-2.0	69	0.00	12.45
73		3-methyl-1-butanol	0.015	0.015	0.0	71	0.00	12.47
74	I	chlorobenzene-d5	1.000	1.000	0.0	74	0.00	14.25
75	S	toluene-d8	1.309	1.283	2.0	73	0.00	12.65
76		toluene	0.777	0.721	7.2	69	0.00	12.73
77		ethyl methacrylate	0.341	0.334	2.1	73	0.00	12.94
78		trans-1,3-dichloropropene	0.423	0.416	1.7	71	0.00	12.94
79		1,1,2-trichloroethane	0.204	0.204	0.0	70	0.00	13.17
80	M	tetrachloroethene	0.312	0.265	15.1	65	0.00	13.30
81		2-hexanone	0.098	0.095	3.1	69	0.00	13.35
82	M	1,3-dichloropropane	0.435	0.423	2.8	75	0.00	13.36
83	M	butyl acetate		----------NA----------				
84		3,3-dimethyl-1-butanol	0.042	0.035	16.7	69	0.00	13.55
85	M	dibromochloromethane	0.334	0.293	12.3	65	0.00	13.62
86	M	1,2-dibromoethane	0.267	0.253	5.2	68	0.00	13.78
87	M	chlorobenzene	0.872	0.824	5.5	70	0.00	14.29
88	M	1,1,1,2-tetrachloroethane	0.450	0.388	13.8	65	0.00	14.36
89	M	ethylbenzene	1.441	1.475	-2.4	73	0.00	14.36
90	M	m,p-xylene	0.624	0.554	11.2	67	0.00	14.49
91	M	o-xylene	0.645	0.623	3.4	71	0.00	14.92
92	M	styrene	0.918	0.919	-0.1	70	0.00	14.93
93		n-amyl acetate		----------NA----------				
94	M	bromoform	0.244	0.203	16.8	59	0.00	15.18
95		isopropylbenzene	1.686	1.714	-1.7	69	0.00	15.29
96	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	66	0.00	16.75
97	S	4-bromofluorobenzene (s)	0.695	0.764	-9.9	75	0.00	15.51
98	M	bromobenzene	0.622	0.581	6.6	62	0.00	15.70

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VN11243-CC11221
Account: UTC United Technologies Corporation **Lab FileID:** N266798.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

99	M	1,1,2,2-tetrachloroethane	0.537	0.559	-4.1	69	0.00	15.60
100	M	trans-1,4-dichloro-2-bute	0.136	0.106	22.1	55	0.00	15.64
101	M	1,2,3-trichloropropane	0.177	0.172	2.8	71	0.00	15.69
102	M	n-propylbenzene	0.646	0.669	-3.6	68	0.00	15.74
103	M	2-chlorotoluene	0.596	0.601	-0.8	65	0.00	15.87
104	M	4-chlorotoluene	0.548	0.572	-4.4	69	0.00	16.00
105	M	1,3,5-trimethylbenzene	2.050	2.267	-10.6	66	0.00	15.91
106	M	tert-butylbenzene	0.495	0.444	10.3	57	0.00	16.27
107	M	1,2,4-trimethylbenzene	2.130	2.327	-9.2	67	0.00	16.32
108	M	sec-butylbenzene	2.649	2.993	-13.0	66	0.00	16.50
109	M	1,3-dichlorobenzene	1.332	1.300	2.4	66	0.00	16.68
110	M	p-isopropyltoluene	2.384	2.621	-9.9	65	0.00	16.64
111	M	1,4-dichlorobenzene	1.368	1.328	2.9	64	0.00	16.78
112	M	1,2-dichlorobenzene	1.457	1.361	6.6	63	0.00	17.18
113	M	benzyl chloride	1.306	1.273	2.5	64	0.00	16.89
114		indane		----------NA----------				
115	M	n-butylbenzene	1.297	1.464	-12.9	71	0.00	17.08
116		hexachloroethane	0.571	0.487	14.7	56	0.00	17.50
117	M	1,2-dibromo-3-chloropropa	0.238	0.173	27.3	54	0.00	18.02
118		Nitrobenzene	0.072	0.043	40.3#	44#	0.00	18.23
119		1,3,5-trichlorobenzene	1.677	1.575	6.1	60	0.00	18.22
120	M	1,2,4-trichlorobenzene	1.666	1.354	18.7	54	0.00	18.91
121	M	hexachlorobutadiene	0.904	0.730	19.2	52	0.00	19.03
122	M	naphthalene	3.141	2.758	12.2	53	0.00	19.23
123	M	1,2,3-trichlorobenzene	1.584	1.284	18.9	52	0.00	19.47
124		ETHYLENIMINE		----------NA----------				
125		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
n266327.D MN11221.M Thu Dec 21 01:55:48 2017

6.9.8

Initial Calibration Summary

Job Number: JC56966 **Sample:** VT9358-ICC9358
Account: UTC United Technologies Corporation **Lab FileID:** T227853.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Response Factor Report GCMST

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Calibration Files
5 =T227852.D 20 =T227853.D 50 =T227854.D 100 =T227855.D
200 =T227856.D 2 =T227851.D 1 =T227850.D 0.5 =T227848.D
0.2 =T227849.D =

Compound	5	20	50	100	200	2	1	0.5	0.2	Avg	%RSD
1) TERT BUTYL ALCOHOL-d9 ----------ISTD----------											
2) TERTIARY BUTYL ALCOHOL	1.124	1.158	1.188	1.207	1.236	1.339	0.856			1.158	12.93
3) 1,4-DIOXANE	0.092	0.097	0.097	0.096	0.093	0.086				0.094	4.41
4) PENTAFLUOROBENZENE ----------ISTD----------											
5) CHLORODIFLUOROMETHANE	1.006	1.142	1.172	1.199	1.158	0.992				1.111	8.01
6) DICHLORODIFLUOROMETHANE	1.000	1.202	1.203	1.161	1.123	1.034	1.067	0.934		1.091	9.02
7) FREON 143A *This compound does not meet Initial Calibration criteria	1.271	1.296	1.365	1.358	1.301	1.075	1.156	0.983	1.073	1.209	11.59
8) FREON 142B	0.713	0.750	0.807	0.811	0.810	0.624	0.618			0.733	11.58
9) CHLOROMETHANE	0.874	1.095	1.139	1.167	1.182	0.978	1.136			1.082	10.52
10) VINYL CHLORIDE	0.876	1.157	1.229	1.221	1.211	0.943	1.021	0.928	1.238	1.092	13.58
11) BROMOMETHANE	0.519	0.647	0.642	0.608	0.449	0.603	0.619	0.599		0.586	11.60
12) CHLOROETHANE	0.447	0.529	0.553	0.534	0.500	0.449	0.477			0.498	8.52
13) VINYL BROMIDE	0.383	0.483	0.507	0.489	0.488	0.384	0.441			0.454	11.46
14) TRICHLOROFLUOROMETHANE	0.664	0.837	0.860	0.842	0.826	0.695	0.729	0.705	0.809	0.774	9.71
15) PENTANE										0.000	-1.00
16) FREON 141B	0.700	0.730	0.755	0.748	0.733	0.584	0.626	0.589	0.519	0.665	13.04
17) ETHYL ETHER	0.242	0.240	0.244	0.238	0.231	0.243	0.169	0.250		0.232	11.19
18) 1,1-DICHLOROETHYLENE	0.715	0.753	0.766	0.745	0.719	0.698	0.543	0.781	0.783	0.723	10.17
19) FREON 113	0.468	0.517	0.528	0.513	0.498	0.475	0.336	0.549		0.486	13.60
20) ACROLEIN	0.060	0.072	0.079	0.075	0.072	0.080				0.073	9.79
21) ACETONE	0.036	0.037	0.039	0.039	0.037	0.032	0.027			0.035	12.62
22) CARBON DISULFIDE	1.681	1.844	1.911	1.809	1.756	1.783	1.259			1.720	12.53
23) IODOMETHANE											

0.832 0.859 0.896 0.861 0.840 0.837 0.606 0.882 0.880 0.832 10.56

24) ACETONITRILE
0.067 0.061 0.062 0.061 0.059 0.077 0.065 10.04

25) METHYL ACETATE
0.323 0.315 0.310 0.306 0.302 0.428 0.369 0.336 13.86

26) METHYLENE CHLORIDE
0.468 0.506 0.517 0.500 0.488 0.520 0.418 0.659 0.510 13.50

27) ACRYLONITRILE
0.161 0.150 0.156 0.152 0.148 0.157 0.154 3.08

28) METHYL TERT BUTYL ETHER
1.445 1.509 1.541 1.534 1.514 1.522 1.235 1.794 1.512 10.07

29) trans-1,2-DICHLOROETHYLENE
0.644 0.697 0.707 0.691 0.673 0.661 0.507 0.751 0.680 0.668 10.11

30) HEXANE
0.688 0.764 0.765 0.740 0.712 0.647 0.474 0.684 14.90

31) 1,1-DICHLOROETHANE
0.825 0.852 0.871 0.826 0.806 0.824 0.634 0.961 0.876 0.831 10.48

32) VINYL ACETATE
0.058 0.059 0.061 0.063 0.059 0.053 0.059 6.14

33) DI-ISOPROPYL ETHER
1.865 1.924 1.966 1.938 1.891 1.837 1.377 2.025 2.155 1.887 11.31

34) ETHYL TERT BUTYL ETHER
1.608 1.698 1.789 1.772 1.788 1.654 1.309 1.709 1.730 1.673 8.94

35) 2-BUTANONE
0.043 0.042 0.043 0.044 0.041 0.039 0.026 0.040 15.66

36) cis-1,2-DICHLOROETHYLENE
0.469 0.510 0.512 0.498 0.486 0.501 0.419 0.611 0.593 0.511 11.53

37) 2,2-DICHLOROPROPANE
0.783 0.848 0.844 0.825 0.823 0.812 0.618 0.941 0.812 11.16

38) ETHYL ACETATE
0.065 0.062 0.061 0.058 0.055 0.053 0.053 0.058 7.89

39) BROMOCHLOROMETHANE
0.226 0.232 0.232 0.228 0.221 0.227 0.155 0.201 0.203 0.214 11.65

40) TETRAHYDROFURAN
0.138 0.133 0.131 0.127 0.123 0.153 0.129 0.134 7.37

41) CHLOROFORM
0.703 0.746 0.755 0.735 0.724 0.714 0.538 0.783 0.712 10.48

42) t-BUTYL FORMATE *This compound does not meet Initial Calibration criteria
0.061 0.054 0.054 0.058 0.057 0.043 0.055 11.25

43) 1,1,1-TRICHLOROETHANE
0.716 0.806 0.826 0.818 0.810 0.776 0.556 0.859 0.741 0.768 11.83

44) CYCLOHEXANE
0.681 0.942 0.962 0.937 0.943 0.914 0.906 0.898 10.83

45) DIBROMOFLUOROMETHANE (SUR)
0.410 0.413 0.414 0.411 0.415 0.414 0.416 0.416 0.414 0.414 0.50

46) 1,1-DICHLOROPROPENE
0.583 0.627 0.635 0.620 0.615 0.601 0.424 0.675 0.613 0.599 11.73

47) CARBON TETRACHLORIDE
0.649 0.698 0.725 0.718 0.713 0.655 0.488 0.732 0.725 0.678 11.43

48) ISOPROPYL ACETATE
0.078 0.081 0.083 0.085 0.084 0.080 0.082 3.42

49) 1,4-DIFLUOROBENZENE ----------ISTD----------

50) 1,2-DICHLOROETHANE-d4
0.285 0.287 0.281 0.287 0.279 0.291 0.293 0.293 0.290 0.287 1.70

51) BENZENE
1.341 1.390 1.392 1.354 1.270 1.397 0.994 1.599 1.342 12.61

52) 1,2-DICHLOROETHANE
0.333 0.341 0.344 0.340 0.323 0.350 0.252 0.366 0.401 0.339 11.67

53) 2,2,4-TRIMETHYLPENTANE

Initial Calibration Summary

Job Number: JC56966 **Sample:** VT9358-ICC9358
Account: UTC United Technologies Corporation **Lab FileID:** T227853.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

```
          1.431 1.629 1.670 1.703 1.728 1.415                    1.596    8.65
54)  TERT-AMYL METHYL ETHER
          1.128 1.159 1.181 1.197 1.151 1.210 0.909              1.134    9.07
55)  HEPTANE
          0.286 0.309 0.315 0.313 0.299 0.290 0.220 0.281 0.280  0.288    9.96
56)  TRICHLOROETHYLENE
          0.298 0.325 0.324 0.322 0.314 0.321 0.223 0.314 0.371  0.312   12.46
57)  1,2-DICHLOROPROPANE
          0.372 0.388 0.388 0.380 0.362 0.386 0.307 0.398 0.416  0.378    8.05
58)  DIBROMOMETHANE
          0.171 0.184 0.181 0.181 0.170 0.175 0.137              0.171    9.32
59)  METHYL METHACRYLATE
          0.058 0.068 0.069 0.070 0.069 0.069 0.045              0.064   14.38
60)  METHYLCYCLOHEXANE
          0.739 0.866 0.887 0.888 0.862 0.750 0.544 0.830 0.802  0.797   13.74
61)  BROMODICHLOROMETHANE
          0.375 0.398 0.399 0.401 0.391 0.402 0.282 0.440 0.386  0.386   11.09
62)  2-CHLOROETHYL VINYL ETHER
          0.132 0.137 0.138 0.135 0.130 0.134 0.090              0.128   13.23
63)  EPICHLOROHYDRIN
          0.025 0.026 0.027 0.027 0.026 0.026 0.021              0.026    7.46
64)  cis-1,3-DICHLOROPROPENE
          0.509 0.541 0.535 0.538 0.519 0.528 0.398 0.578 0.588  0.526   10.37
65)  4-METHYL-2-PENTANONE
          0.118 0.125 0.125 0.125 0.122 0.124 0.099 0.124 0.133  0.122    7.62

66) I   CHLOROBENZENE-D5      ----------------ISTD---------------------
67)  TOLUENE-d8
          1.284 1.291 1.279 1.316 1.293 1.283 1.254 1.242 1.272  1.279    1.70
68)  TOLUENE
          0.821 0.847 0.860 0.863 0.821 0.839 0.602 0.958 1.046  0.851   14.00
69)  ETHYL METHACRYLATE
          0.391 0.402 0.418 0.423 0.405 0.395 0.290 0.405        0.391   10.84
70)  trans-1,3-DICHLOROPROPENE
          0.459 0.470 0.470 0.461 0.439 0.442 0.300 0.514 0.523  0.453   14.21
71)  1,1,2-TRICHLOROETHANE
          0.240 0.244 0.241 0.239 0.228 0.247 0.186 0.275 0.215  0.235   10.35
72)  TETRACHLOROETHYLENE
          0.276 0.291 0.300 0.293 0.285 0.298 0.201 0.307 0.362  0.290   14.32
73)  2-HEXANONE
          0.117 0.121 0.123 0.121 0.115 0.124 0.094 0.106 0.150  0.119   12.61
74)  1,3-DICHLOROPROPANE
          0.451 0.472 0.475 0.459 0.442 0.467 0.341 0.498 0.516  0.458   10.75
75)  BUTYL ACETATE
          0.216 0.212 0.223 0.222 0.215 0.209 0.158              0.208   10.88
76)  3,3-DIMETHYL-1-BUTANOL
          0.039 0.041 0.044 0.048 0.048 0.039 0.033              0.042   13.07
77)  DIBROMOCHLOROMETHANE
          0.291 0.305 0.315 0.318 0.306 0.312 0.221 0.313 0.306  0.298   10.03
78)  ETHYLENE DIBROMIDE
          0.263 0.273 0.273 0.273 0.262 0.267 0.181 0.257 0.243  0.255   11.47
79)  CHLOROBENZENE
          0.924 0.969 0.975 0.961 0.915 0.972 0.654 1.076 1.090  0.949   13.27
80)  1,1,1,2-TETRACHLOROETHANE
          0.364 0.400 0.413 0.420 0.409 0.387 0.264 0.383 0.431  0.386   12.97
81)  ETHYLBENZENE
          1.580 1.695 1.710 1.685 1.576 1.542 1.179 1.735 1.828  1.614   11.55
82)  m,p-XYLENE
          0.607 0.648 0.662 0.653 0.625 0.614 0.425 0.681 0.677  0.621   12.58
83)  o-XYLENE
```

Initial Calibration Summary

Job Number: JC56966 **Sample:** VT9358-ICC9358
Account: UTC United Technologies Corporation **Lab FileID:** T227853.D
Project: SECORINI: Zanesville Well Field, [redacted] Zanesville, OH

```
          1.331 1.452 1.485 1.474 1.405 1.382 1.041 1.475 1.558   1.400   10.72
 84)  STYRENE
          1.007 1.080 1.101 1.083 1.035 0.968 0.724 1.060 1.055   1.013   11.43
 85)  n-AMYL ACETATE
                                                                  0.000   -1.00
 86)  BROMOFORM
          0.207 0.213 0.224 0.222 0.218 0.220 0.173 0.229 0.169   0.208   10.59
 87)  CUMENE
          1.700 1.902 1.957 1.964 1.849 1.694 1.255 1.878 1.900   1.789   12.47
 88)  cis-1,4-DICHLORO-2-BUTENE
          0.103 0.102 0.112 0.111 0.110 0.107 0.075               0.103   12.52

 89)     1,4-DICHLOROBENZENE-D ----------------ISTD---------------------
 90)  4-BROMOFLUOROBENZENE
          0.718 0.711 0.723 0.735 0.731 0.716 0.705 0.700 0.717   0.717    1.60
 91)  1,1,2,2-TETRACHLOROETHANE
          0.674 0.696 0.715 0.720 0.671 0.729 0.552 0.794 0.936   0.721   14.32
 92)  trans-1,4-DICHLORO-2-BUTENE
          0.142 0.143 0.153 0.159 0.150 0.164                     0.152    5.77
 93)  1,2,3-TRICHLOROPROPANE
          0.146 0.156 0.158 0.157 0.151 0.155 0.123               0.149    8.09
 94)  N-PROPYLBENZENE
          3.315 3.617 3.699 3.696 3.403 3.397 2.346 3.554 4.152   3.464   14.04
 95)  BROMOBENZENE
          0.671 0.726 0.737 0.739 0.711 0.751 0.498 0.800 0.838   0.719   13.33
 96)  2-CHLOROTOLUENE
          0.687 0.745 0.770 0.782 0.755 0.699 0.483 0.783 0.809   0.724   13.61
 97)  4-CHLOROTOLUENE
          1.911 2.025 2.092 2.096 2.014 2.071 1.423 2.313 2.494   2.049   14.27
 98)  1,3,5-TRIMETHYLBENZENE
          2.368 2.669 2.839 2.890 2.776 2.373 1.674 2.558 2.679   2.536   14.69
 99)  TERT-BUTYLBENZENE
          1.999 2.264 2.514 2.604 2.562 2.073                     2.336   11.20
100)  1,2,4-TRIMETHYLBENZENE
          2.510 2.741 2.850 2.896 2.764 2.509 1.814 2.787 2.764   2.626   12.68
101)  SEC-BUTYLBENZENE
          3.353 3.820 4.029 4.115 3.846 3.410                     3.762    8.39
102)  P-ISOPROPYLTOLUENE
          2.770 3.128 3.288 3.292 3.196 2.900 1.962 2.934 3.342   2.979   14.44
103)  1,3-DICHLOROBENZENE
          1.446 1.493 1.516 1.489 1.451 1.509 1.149 1.577 1.793   1.491   11.13
104)  1,4-DICHLOROBENZENE
          1.490 1.518 1.537 1.501 1.444 1.574 1.210 1.626 1.934   1.537   12.30
105)  N-BUTYLBENZENE
          0.784 0.787 0.824 0.827 0.812 0.749 0.541 0.805 0.833   0.774   11.77
106)  1,2-DICHLOROBENZENE
          1.534 1.575 1.568 1.562 1.497 1.637 1.162 1.675 1.918   1.570   12.53
107)  HEXACHLOROETHANE
          0.306 0.327 0.369 0.397 0.412 0.302                     0.352   13.43
108)  1,2-DIBROMO-3-CHLOROPROPANE
          0.155 0.162 0.165 0.166 0.165 0.160 0.141 0.197         0.164    9.51
109)  HEXACHLOROBUTADIENE
          0.760 0.785 0.803 0.838 0.868 0.788 0.573 0.798 0.979   0.799   13.40
110)  1,3,5-TRICHLOROBENZENE
          1.558 1.604 1.613 1.605 1.593 1.605 1.111 1.618 1.872   1.575   12.49
111)  NITROBENZENE *This compound does not meet Initial Calibration criteria
          0.050 0.052 0.053 0.059 0.063                           0.055    9.31
112)  1,2,4-TRICHLOROBENZENE
          1.347 1.443 1.461 1.473 1.458 1.308                     1.415    4.92
113)  1,2,3-TRICHLOROBENZENE
```

Initial Calibration Summary

Job Number: JC56966 **Sample:** VT9358-ICC9358
Account: UTC United Technologies Corporation **Lab FileID:** T227853.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

```
           1.117 1.236 1.309 1.338 1.329 1.049                    1.229    9.83
114)  NAPHTHALENE
           2.239 2.485 2.659 2.739 2.700 2.073                    2.483   10.98
115)  INDANE
                                                                  0.000   -1.00
116)  ETHYLENIMINE
                                                                  0.000   -1.00
117)  BIS(CHLOROMETHYL)ETHER
                                                                  0.000   -1.00
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MT9358.M          Mon Nov 13 12:32:56 2017   MSDT
```

Initial Calibration Verification

Job Number: JC56966 **Sample:** VT9358-ICV9358
Account: UTC United Technologies Corporation **Lab FileID:** T227859.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T227859.D Vial: 14
Acq On : 9 Nov 2017 6:20 am Operator: CHELSEAS
Sample : icv9358-20 Inst : GCMST
Misc : MS21916,VT9358,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Nov 09 09:23:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	100	0.00	7.42
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	101	0.00	9.46
24		ACETONITRILE	0.065	0.062	4.6	103	0.00	7.28
45	S	DIBROMOFLUOROMETHANE (SUR	0.414	0.419	-1.2	102	0.00	9.51
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	103	0.00	10.32
50	S	1,2-DICHLOROETHANE-d4	0.287	0.301	-4.9	108	0.00	9.91
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	102	0.00	13.53
67	S	TOLUENE-d8	1.279	1.278	0.1	101	0.00	11.95
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	109	0.00	16.07
90	S	4-BROMOFLUOROBENZENE	0.717	0.689	3.9	105	0.00	14.79

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T227853.D MT9358.M Thu Nov 09 09:30:00 2017 MSDT

Initial Calibration Verification

Job Number: JC56966 **Sample:** VT9358-ICV9358
Account: UTC United Technologies Corporation **Lab FileID:** T227860.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T227860.D Vial: 15
Acq On : 9 Nov 2017 6:50 am Operator: CHELSEAS
Sample : icv9358-20 Inst : GCMST
Misc : MS21916,VT9358,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Nov 10 15:42:16 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	104	0.00	7.43
2	M	TERTIARY BUTYL ALCOHOL	1.158	1.125	2.8	101	0.00	7.53
3	M	1,4-DIOXANE	0.094	0.099	-5.3	106	0.00	11.00
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	106	0.00	9.46
5		CHLORODIFLUOROMETHANE	1.111	1.050	5.5	98	0.00	4.37
6	M	DICHLORODIFLUOROMETHANE	1.091	0.867	20.5	77	0.00	4.37
7	M	FREON 143A	1.209	0.767	36.6#	63	0.00	4.03
8	M	FREON 142B	0.733	0.785	-7.1	111	0.00	4.62
9	M	CHLOROMETHANE	1.082	0.894	17.4	87	0.00	4.69
10	M	VINYL CHLORIDE	1.092	0.933	14.6	86	0.00	4.94
11	M	BROMOMETHANE	0.586	0.550	6.1	90	0.00	5.57
12	M	CHLOROETHANE	0.498	0.481	3.4	97	0.00	5.73
13		VINYL BROMIDE	0.454	0.457	-0.7	100	0.00	6.04
14	M	TRICHLOROFLUOROMETHANE	0.774	0.742	4.1	94	0.00	6.14
15	M	PENTANE		----------NA----------				
16	M	FREON 141B	0.665	0.674	-1.4	98	0.00	6.54
17		ETHYL ETHER	0.232	0.238	-2.6	105	0.00	6.51
18	M	1,1-DICHLOROETHYLENE	0.723	0.699	3.3	99	0.00	6.90
19	M	FREON 113	0.486	0.544	-11.9	112	0.00	6.88
20		ACROLEIN	0.073	0.067	8.2	100	0.00	6.72
21	M	ACETONE	0.035	0.034	2.9	98	0.00	6.91
22	M	CARBON DISULFIDE	1.720	1.816	-5.6	105	0.00	7.27
23	M	IODOMETHANE	0.832	0.810	2.6	100	0.00	7.15
24		ACETONITRILE	0.065	0.053	18.5	92	0.00	7.28
25		METHYL ACETATE	0.336	0.274	18.5	92	0.00	7.32
26	M	METHYLENE CHLORIDE	0.510	0.497	2.5	104	0.00	7.50
27	M	ACRYLONITRILE	0.154	0.171	-11.0	121	0.00	7.78
28	M	METHYL TERT BUTYL ETHER	1.512	1.536	-1.6	108	0.00	7.82
29	M	trans-1,2-DICHLOROETHYLEN	0.668	0.681	-1.9	104	0.00	7.85
30	M	HEXANE	0.684	0.616	9.9	86	0.00	8.15
31	M	1,1-DICHLOROETHANE	0.831	0.833	-0.2	104	0.00	8.35
32	M	VINYL ACETATE	0.059	0.066	-11.9	118	0.00	8.32
33	M	DI-ISOPROPYL ETHER	1.887	1.949	-3.3	108	0.00	8.34
34	M	ETHYL TERT BUTYL ETHER	1.673	1.741	-4.1	109	0.00	8.76
35	M	2-BUTANONE	0.040	0.038	5.0	95	0.00	8.96
36	M	cis-1,2-DICHLOROETHYLENE	0.511	0.503	1.6	105	0.00	9.00
37	M	2,2-DICHLOROPROPANE	0.812	0.771	5.0	97	0.00	9.04
38	M	ETHYL ACETATE	0.058	0.066	-13.8	113	0.01	8.98
39		BROMOCHLOROMETHANE	0.214	0.223	-4.2	102	0.00	9.28
40	M	TETRAHYDROFURAN	0.134	0.139	-3.7	111	0.00	9.33
41	M	CHLOROFORM	0.712	0.733	-2.9	104	0.00	9.32

Initial Calibration Verification

Job Number: JC56966 **Sample:** VT9358-ICV9358
Account: UTC United Technologies Corporation **Lab FileID:** T227860.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

42		t-BUTYL FORMATE	0.055	0.276	-401.8#	542#	0.00	9.39
43	M	1,1,1-TRICHLOROETHANE	0.768	0.781	-1.7	103	0.00	9.61
44		CYCLOHEXANE	0.898	0.869	3.2	98	0.00	9.69
45	S	DIBROMOFLUOROMETHANE (SUR	0.414	0.398	3.9	102	0.00	9.51
46		1,1-DICHLOROPROPENE	0.599	0.622	-3.8	105	0.00	9.76
47		CARBON TETRACHLORIDE	0.678	0.681	-0.4	104	0.00	9.79
48		ISOPROPYL ACETATE	0.082	0.082	0.0	108	0.00	9.89
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	106	0.00	10.32
50	S	1,2-DICHLOROETHANE-d4	0.287	0.289	-0.7	107	0.00	9.91
51	M	BENZENE	1.342	1.365	-1.7	104	0.00	10.00
52	M	1,2-DICHLOROETHANE	0.339	0.353	-4.1	110	0.00	9.99
53		2,2,4-TRIMETHYLPENTANE	1.596	1.601	-0.3	104	0.00	10.02
54	M	TERT-AMYL METHYL ETHER	1.134	1.167	-2.9	106	0.00	10.03
55	M	HEPTANE	0.288	0.330	-14.6	113	0.00	10.17
56	M	TRICHLOROETHYLENE	0.312	0.326	-4.5	106	0.00	10.66
57	M	1,2-DICHLOROPROPANE	0.378	0.399	-5.6	109	0.00	10.91
58	M	DIBROMOMETHANE	0.171	0.176	-2.9	101	0.00	11.05
59		METHYL METHACRYLATE	0.064	0.069	-7.8	107	0.00	10.89
60		METHYLCYCLOHEXANE	0.797	0.787	1.3	96	0.00	10.91
61	M	BROMODICHLOROMETHANE	0.386	0.403	-4.4	107	0.00	11.16
62	M	2-CHLOROETHYL VINYL ETHER	0.128	0.195	-52.3#	150	0.00	11.40
63	M	EPICHLOROHYDRIN	0.026	0.027	-3.8	107	0.00	11.52
64	M	cis-1,3-DICHLOROPROPENE	0.526	0.537	-2.1	105	0.00	11.63
65	M	4-METHYL-2-PENTANONE	0.122	0.122	0.0	103	0.00	11.73
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	104	0.00	13.53
67	S	TOLUENE-d8	1.279	1.288	-0.7	103	0.00	11.94
68		TOLUENE	0.851	0.860	-1.1	105	0.00	12.02
69		ETHYL METHACRYLATE	0.391	0.398	-1.8	102	0.00	12.18
70		trans-1,3-DICHLOROPROPENE	0.453	0.476	-5.1	105	0.00	12.18
71		1,1,2-TRICHLOROETHANE	0.235	0.242	-3.0	103	0.00	12.41
72	M	TETRACHLOROETHYLENE	0.290	0.390	-34.5	139	0.00	12.63
73	M	2-HEXANONE	0.119	0.118	0.8	101	0.00	12.60
74		1,3-DICHLOROPROPANE	0.458	0.483	-5.5	106	0.00	12.61
75	M	BUTYL ACETATE	0.208	0.233	-12.0	114	0.00	12.68
76		3,3-DIMETHYL-1-BUTANOL	0.042	0.040	4.8	102	0.00	12.76
77	M	DIBROMOCHLOROMETHANE	0.298	0.314	-5.4	107	0.00	12.89
78	M	ETHYLENE DIBROMIDE	0.255	0.274	-7.5	104	0.00	13.06
79	M	CHLOROBENZENE	0.949	0.974	-2.6	104	0.00	13.56
80	M	1,1,1,2-TETRACHLOROETHANE	0.386	0.405	-4.9	105	0.00	13.62
81	M	ETHYLBENZENE	1.614	1.672	-3.6	102	0.00	13.62
82	M	m,p-XYLENE	0.621	0.655	-5.5	105	0.00	13.74
83	M	o-XYLENE	1.400	1.440	-2.9	103	0.00	14.19
84	M	STYRENE	1.013	1.062	-4.8	102	0.00	14.20
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.208	0.220	-5.8	107	0.00	14.47
87	M	CUMENE	1.789	1.870	-4.5	102	0.00	14.57
88		cis-1,4-DICHLORO-2-BUTENE	0.103	0.105	-1.9	106	0.00	14.62
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	103	0.00	16.07
90	S	4-BROMOFLUOROBENZENE	0.717	0.716	0.1	103	0.00	14.78
91		1,1,2,2-TETRACHLOROETHANE	0.721	0.693	3.9	102	0.00	14.87
92		trans-1,4-DICHLORO-2-BUTE	0.152	0.160	-5.3	115	0.00	14.92
93		1,2,3-TRICHLOROPROPANE	0.149	0.159	-6.7	105	0.00	14.97
94		N-PROPYLBENZENE	3.464	3.620	-4.5	103	0.00	15.02
95		BROMOBENZENE	0.719	0.734	-2.1	104	0.00	15.00
96		2-CHLOROTOLUENE	0.724	0.743	-2.6	102	0.00	15.18
97		4-CHLOROTOLUENE	2.049	2.065	-0.8	105	0.00	15.29
98	M	1,3,5-TRIMETHYLBENZENE	2.536	2.670	-5.3	103	0.00	15.19

Initial Calibration Verification

Job Number: JC56966 **Sample:** VT9358-ICV9358
Account: UTC United Technologies Corporation **Lab FileID:** T227860.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

99		TERT-BUTYLBENZENE	2.336	2.311	1.1	105	0.00	15.58
100	M	1,2,4-TRIMETHYLBENZENE	2.626	2.766	-5.3	104	0.00	15.62
101		SEC-BUTYLBENZENE	3.762	3.770	-0.2	101	0.00	15.81
102		P-ISOPROPYLTOLUENE	2.979	3.155	-5.9	104	0.00	15.95
103	M	1,3-DICHLOROBENZENE	1.491	1.520	-1.9	105	0.00	16.01
104	M	1,4-DICHLOROBENZENE	1.537	1.546	-0.6	105	0.00	16.10
105		N-BUTYLBENZENE	0.774	0.795	-2.7	104	0.00	16.40
106	M	1,2-DICHLOROBENZENE	1.570	1.568	0.1	102	0.00	16.53
107		HEXACHLOROETHANE	0.352	0.347	1.4	109	0.00	16.83
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.164	0.160	2.4	101	0.00	17.36
109		HEXACHLOROBUTADIENE	0.799	0.776	2.9	101	0.00	18.41
110		1,3,5-TRICHLOROBENZENE	1.575	1.681	-6.7	108	0.00	17.58
111		NITROBENZENE	0.055	0.051	7.3	100	0.00	17.58
112	M	1,2,4-TRICHLOROBENZENE	1.415	1.400	1.1	100	0.00	18.27
113		1,2,3-TRICHLOROBENZENE	1.229	1.244	-1.2	103	0.00	18.86
114	M	NAPHTHALENE	2.483	2.501	-0.7	103	0.00	18.59
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T227853.D MT9358.M Mon Nov 13 12:32:27 2017 MSDT

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VT9392-CC9358
Account: UTC United Technologies Corporation **Lab FileID:** T228686.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\vt9392\t228686.d Vial: 3
Acq On : 12 Dec 2017 7:49 am Operator: CHELSEAS
Sample : cc9358-20 Inst : GCMST
Misc : MS22930,VT9392,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Fri Nov 10 15:42:16 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	137	0.00	7.43
2	M	TERTIARY BUTYL ALCOHOL	1.158	1.138	1.7	134	0.00	7.53
3	M	1,4-DIOXANE	0.094	0.088	6.4	123	0.00	11.00
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	121	0.00	9.46
5		CHLORODIFLUOROMETHANE	1.111	1.177	-5.9	125	-0.01	4.36
6	M	DICHLORODIFLUOROMETHANE	1.091	0.959	12.1	96	-0.01	4.36
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE	1.082	1.053	2.7	116	0.00	4.69
10	M	VINYL CHLORIDE	1.092	1.144	-4.8	120	0.00	4.94
11	M	BROMOMETHANE	0.586	0.679	-15.9	127	0.00	5.56
12	M	CHLOROETHANE	0.498	0.580	-16.5	133	0.00	5.72
13		VINYL BROMIDE	0.454	0.539	-18.7	135	0.00	6.04
14	M	TRICHLOROFLUOROMETHANE	0.774	0.816	-5.4	118	0.00	6.14
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER	0.232	0.289	-24.6	146	0.00	6.51
18	M	1,1-DICHLOROETHYLENE	0.723	0.810	-12.0	130	0.00	6.90
19	M	FREON 113	0.486	0.483	0.6	113	0.00	6.88
20		ACROLEIN	0.073	0.089	-21.9	151	0.00	6.72
21	M	ACETONE	0.035	0.040	-14.3	129	0.00	6.90
22	M	CARBON DISULFIDE	1.720	1.989	-15.6	130	0.00	7.27
23	M	IODOMETHANE	0.832	0.877	-5.4	123	0.00	7.14
24		ACETONITRILE	0.065	0.079	-21.5	157	0.00	7.28
25		METHYL ACETATE	0.336	0.370	-10.1	142	0.00	7.32
26	M	METHYLENE CHLORIDE	0.510	0.583	-14.3	139	0.00	7.51
27	M	ACRYLONITRILE	0.154	0.190	-23.4	153	0.00	7.77
28	M	METHYL TERT BUTYL ETHER	1.512	1.743	-15.3	140	0.00	7.81
29	M	trans-1,2-DICHLOROETHYLEN	0.668	0.799	-19.6	139	0.00	7.85
30	M	HEXANE	0.684	0.757	-10.7	120	0.00	8.14
31	M	1,1-DICHLOROETHANE	0.831	0.985	-18.5	140	0.00	8.35
32	M	VINYL ACETATE	0.059	0.078	-32.2	160	0.00	8.32
33	M	DI-ISOPROPYL ETHER	1.887	2.368	-25.5	149	0.00	8.34
34	M	ETHYL TERT BUTYL ETHER	1.673	2.021	-20.8	144	0.00	8.76
35	M	2-BUTANONE	0.040	0.047	-17.5	134	0.00	8.96
36	M	cis-1,2-DICHLOROETHYLENE	0.511	0.558	-9.2	132	0.00	9.01
37	M	2,2-DICHLOROPROPANE	0.812	0.952	-17.2	136	0.00	9.03
38	M	ETHYL ACETATE	0.058	0.077	-32.8	149	0.00	8.97
39		BROMOCHLOROMETHANE	0.214	0.247	-15.4	129	0.00	9.28
40	M	TETRAHYDROFURAN	0.134	0.178	-32.8	162	0.00	9.34
41	M	CHLOROFORM	0.712	0.845	-18.7	137	0.00	9.33

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VT9392-CC9358
Account: UTC United Technologies Corporation **Lab FileID:** T228686.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

42		t-BUTYL FORMATE	0.055	0.304	-452.7#	680#	-0.01	9.38
43	M	1,1,1-TRICHLOROETHANE	0.768	0.861	-12.1	129	0.00	9.60
44		CYCLOHEXANE	0.898	0.925	-3.0	119	0.00	9.69
45	S	DIBROMOFLUOROMETHANE (SUR	0.414	0.457	-10.4	134	0.00	9.50
46		1,1-DICHLOROPROPENE	0.599	0.665	-11.0	128	0.00	9.75
47		CARBON TETRACHLORIDE	0.678	0.724	-6.8	125	0.00	9.79
48		ISOPROPYL ACETATE	0.082	0.096	-17.1	144	0.00	9.89
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	135	0.00	10.32
50	S	1,2-DICHLOROETHANE-d4	0.287	0.324	-12.9	153	0.00	9.91
51	M	BENZENE	1.342	1.406	-4.8	137	0.00	10.00
52	M	1,2-DICHLOROETHANE	0.339	0.381	-12.4	151	0.00	9.99
53		2,2,4-TRIMETHYLPENTANE	1.596	1.484	7.0	123	0.00	10.03
54	M	TERT-AMYL METHYL ETHER	1.134	1.222	-7.8	143	0.00	10.03
55	M	HEPTANE	0.288	0.288	0.0	126	0.00	10.17
56	M	TRICHLOROETHYLENE	0.312	0.321	-2.9	134	0.00	10.66
57	M	1,2-DICHLOROPROPANE	0.378	0.398	-5.3	139	0.00	10.91
58	M	DIBROMOMETHANE	0.171	0.185	-8.2	136	0.00	11.05
59		METHYL METHACRYLATE	0.064	0.069	-7.8	137	0.00	10.89
60		METHYLCYCLOHEXANE	0.797	0.754	5.4	118	0.00	10.90
61	M	BROMODICHLOROMETHANE	0.386	0.417	-8.0	142	0.00	11.17
62	M	2-CHLOROETHYL VINYL ETHER	0.128	0.199	-55.5#	196	0.00	11.40
63	M	EPICHLOROHYDRIN	0.026	0.030	-15.4	153	0.00	11.51
64	M	cis-1,3-DICHLOROPROPENE	0.526	0.546	-3.8	136	0.00	11.63
65	M	4-METHYL-2-PENTANONE	0.122	0.131	-7.4	142	0.00	11.73
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	133	0.00	13.52
67	S	TOLUENE-d8	1.279	1.326	-3.7	137	0.00	11.94
68		TOLUENE	0.851	0.873	-2.6	137	0.00	12.02
69		ETHYL METHACRYLATE	0.391	0.435	-11.3	144	0.00	12.19
70		trans-1,3-DICHLOROPROPENE	0.453	0.496	-9.5	140	0.00	12.18
71		1,1,2-TRICHLOROETHANE	0.235	0.251	-6.8	137	0.00	12.41
72	M	TETRACHLOROETHYLENE	0.290	0.267	7.9	122	0.00	12.63
73	M	2-HEXANONE	0.119	0.125	-5.0	137	0.00	12.60
74		1,3-DICHLOROPROPANE	0.458	0.486	-6.1	137	0.00	12.61
75	M	BUTYL ACETATE	0.208	0.234	-12.5	147	0.00	12.67
76		3,3-DIMETHYL-1-BUTANOL	0.042	0.044	-4.8	146	0.00	12.76
77	M	DIBROMOCHLOROMETHANE	0.298	0.301	-1.0	131	0.00	12.88
78	M	ETHYLENE DIBROMIDE	0.255	0.278	-9.0	136	0.00	13.05
79	M	CHLOROBENZENE	0.949	0.957	-0.8	131	0.00	13.56
80	M	1,1,1,2-TETRACHLOROETHANE	0.386	0.391	-1.3	130	0.00	13.61
81	M	ETHYLBENZENE	1.614	1.665	-3.2	131	0.00	13.62
82	M	m,p-XYLENE	0.621	0.639	-2.9	131	0.00	13.74
83	M	o-XYLENE	1.400	1.448	-3.4	133	0.00	14.19
84	M	STYRENE	1.013	1.034	-2.1	128	0.00	14.19
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.208	0.188	9.6	118	0.00	14.47
87	M	CUMENE	1.789	1.828	-2.2	128	0.00	14.57
88		cis-1,4-DICHLORO-2-BUTENE	0.103	0.083	19.4	108	0.00	14.62
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	127	0.00	16.07
90	S	4-BROMOFLUOROBENZENE	0.717	0.700	2.4	125	0.00	14.78
91		1,1,2,2-TETRACHLOROETHANE	0.721	0.769	-6.7	140	0.00	14.86
92		trans-1,4-DICHLORO-2-BUTE	0.152	0.129	15.1	114	0.00	14.92
93		1,2,3-TRICHLOROPROPANE	0.149	0.164	-10.1	134	0.00	14.96
94		N-PROPYLBENZENE	3.464	3.664	-5.8	129	0.00	15.02
95		BROMOBENZENE	0.719	0.705	1.9	123	0.00	15.00
96		2-CHLOROTOLUENE	0.724	0.738	-1.9	126	0.00	15.18
97		4-CHLOROTOLUENE	2.049	2.108	-2.9	132	0.00	15.29
98	M	1,3,5-TRIMETHYLBENZENE	2.536	2.709	-6.8	129	0.00	15.18

Continuing Calibration Summary

Job Number: JC56966 **Sample:** VT9392-CC9358
Account: UTC United Technologies Corporation **Lab FileID:** T228686.D
Project: SECORINI: Zanesville Well Field, NON RESPONSIVE Zanesville, OH

99		TERT-BUTYLBENZENE	2.336	2.324	0.5	130	0.00	15.58
100	M	1,2,4-TRIMETHYLBENZENE	2.626	2.732	-4.0	127	0.00	15.62
101		SEC-BUTYLBENZENE	3.762	3.750	0.3	125	0.00	15.82
102		P-ISOPROPYLTOLUENE	2.979	3.037	-1.9	123	0.00	15.94
103	M	1,3-DICHLOROBENZENE	1.491	1.458	2.2	124	0.00	16.00
104	M	1,4-DICHLOROBENZENE	1.537	1.510	1.8	126	0.00	16.10
105		N-BUTYLBENZENE	0.774	0.768	0.8	124	0.00	16.40
106	M	1,2-DICHLOROBENZENE	1.570	1.531	2.5	124	0.00	16.53
107		HEXACHLOROETHANE	0.352	0.316	10.2	123	0.00	16.83
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.164	0.154	6.1	121	0.00	17.36
109		HEXACHLOROBUTADIENE	0.799	0.695	13.0	112	0.00	18.40
110		1,3,5-TRICHLOROBENZENE	1.575	1.475	6.3	117	0.00	17.57
111		NITROBENZENE	0.055	0.046	16.4	112	-0.01	17.58
112	M	1,2,4-TRICHLOROBENZENE	1.415	1.318	6.9	116	0.00	18.26
113		1,2,3-TRICHLOROBENZENE	1.229	1.072	12.8	110	0.00	18.85
114	M	NAPHTHALENE	2.483	2.251	9.3	115	0.00	18.58
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T227853.D MT9358.M Thu Dec 14 03:46:25 2017

6.9.12

6

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266598.d
Acq On : 13 Dec 2017 3:30 am
Operator : CHELSEAS
Sample : jc56966-1 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 36 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:24:46 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

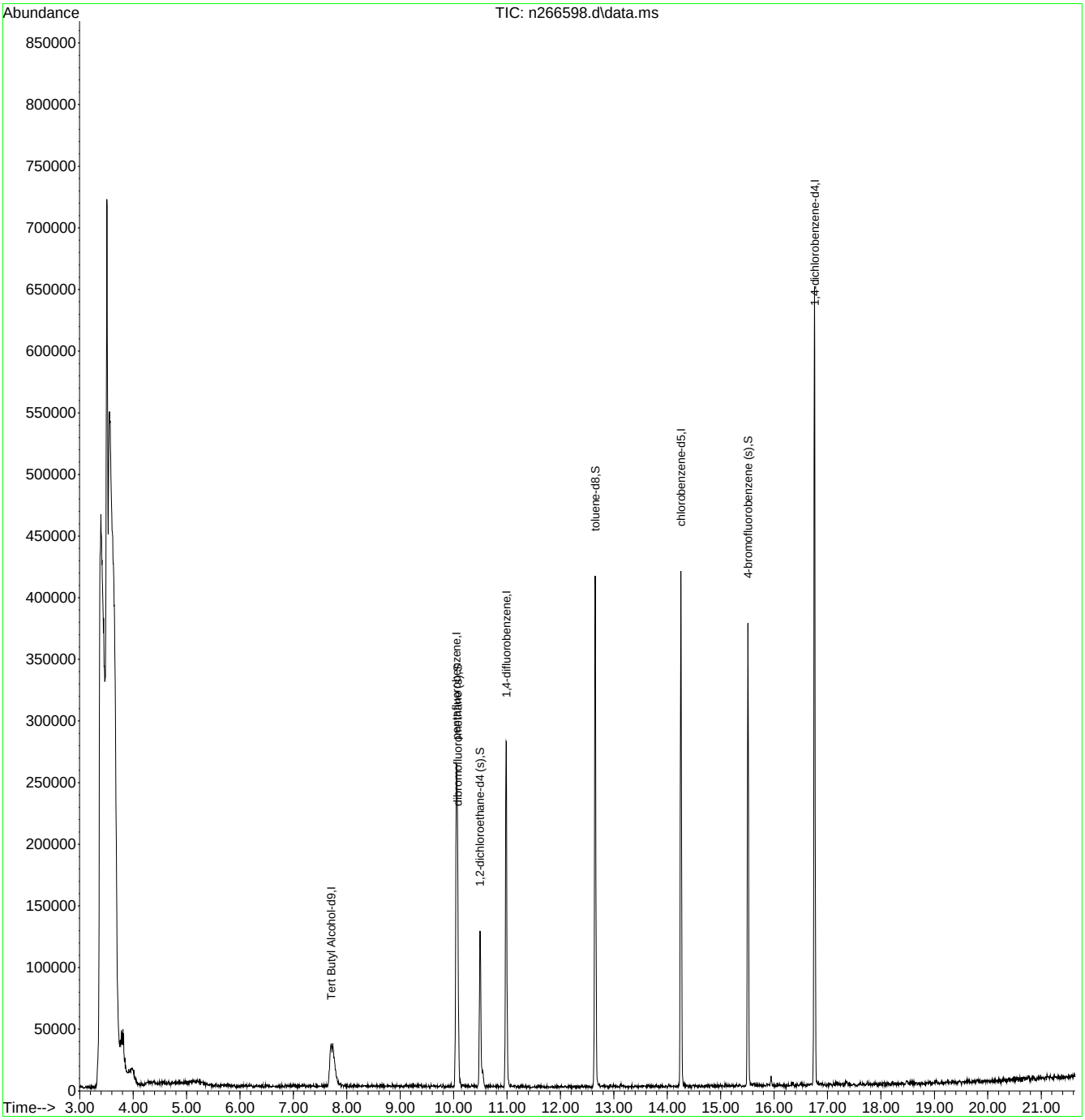
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.706	65	108739	300.00	ug/L	0.01
4) pentafluorobenzene	10.049	168	156632	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.985	114	217205	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	206951	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.759	152	153340	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	85503	35.12	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 117.07%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	88868	33.27	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 110.90%			
75) toluene-d8	12.648	98	256936	28.46	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.87%			
97) 4-bromofluorobenzene (s)	15.509	95	106610	30.02	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.07%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266598.d
Acq On : 13 Dec 2017 3:30 am
Operator : CHELSEAS
Sample : jc56966-1 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 36 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:24:46 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266599.d
Acq On : 13 Dec 2017 4:00 am
Operator : CHELSEAS
Sample : jc56966-2 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 37 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:25:38 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

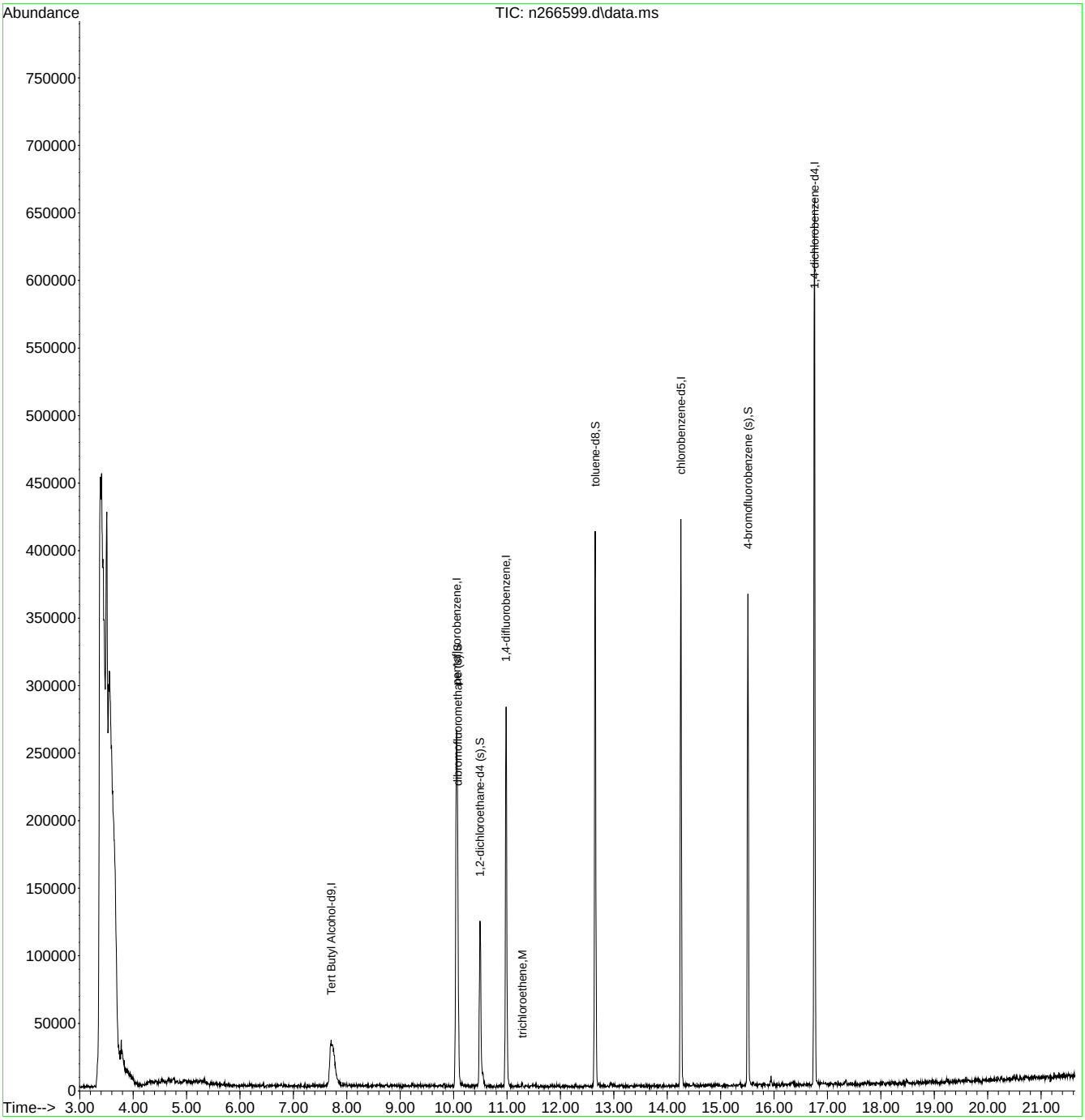
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.706	65	103913	300.00	ug/L	0.01
4) pentafluorobenzene	10.055	168	159982	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	214876	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	205052	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	153011	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.076	113	87373	35.13	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 117.10%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	90817	34.37	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 114.57%			
75) toluene-d8	12.649	98	253318	28.32	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.40%			
97) 4-bromofluorobenzene (s)	15.510	95	105485	29.77	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.23%			
Target Compounds						Qvalue
62) trichloroethene	11.284	95	772	0.38	ug/L	# 32

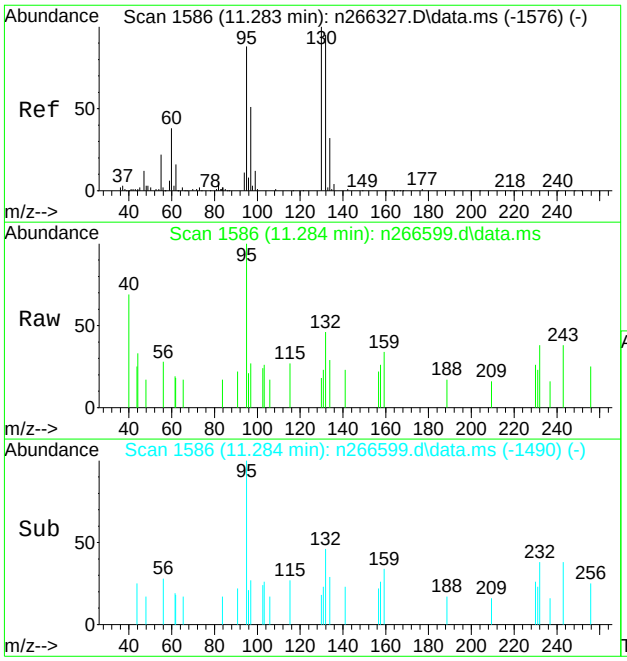
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266599.d
Acq On : 13 Dec 2017 4:00 am
Operator : CHELSEAS
Sample : jc56966-2 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 37 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:25:38 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

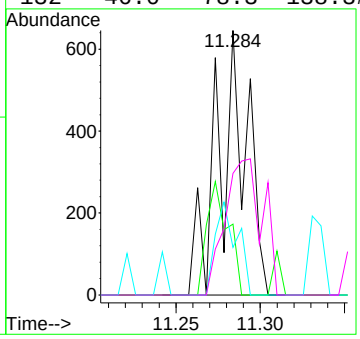




#62
trichloroethene
Concen: 0.38 ug/L
RT: 11.284 min Scan# 1586
Delta R.T. 0.001 min
Lab File: n266599.d
Acq: 13 Dec 2017 4:00 am

Tgt Ion: 95 Resp: 772

Ion	Ratio	Lower	Upper
95	100		
97	26.8	31.3	91.3#
130	18.0	84.0	144.0#
132	46.0	78.3	138.3#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266600.d
Acq On : 13 Dec 2017 4:29 am
Operator : CHELSEAS
Sample : jc56966-3 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 38 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:27:18 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

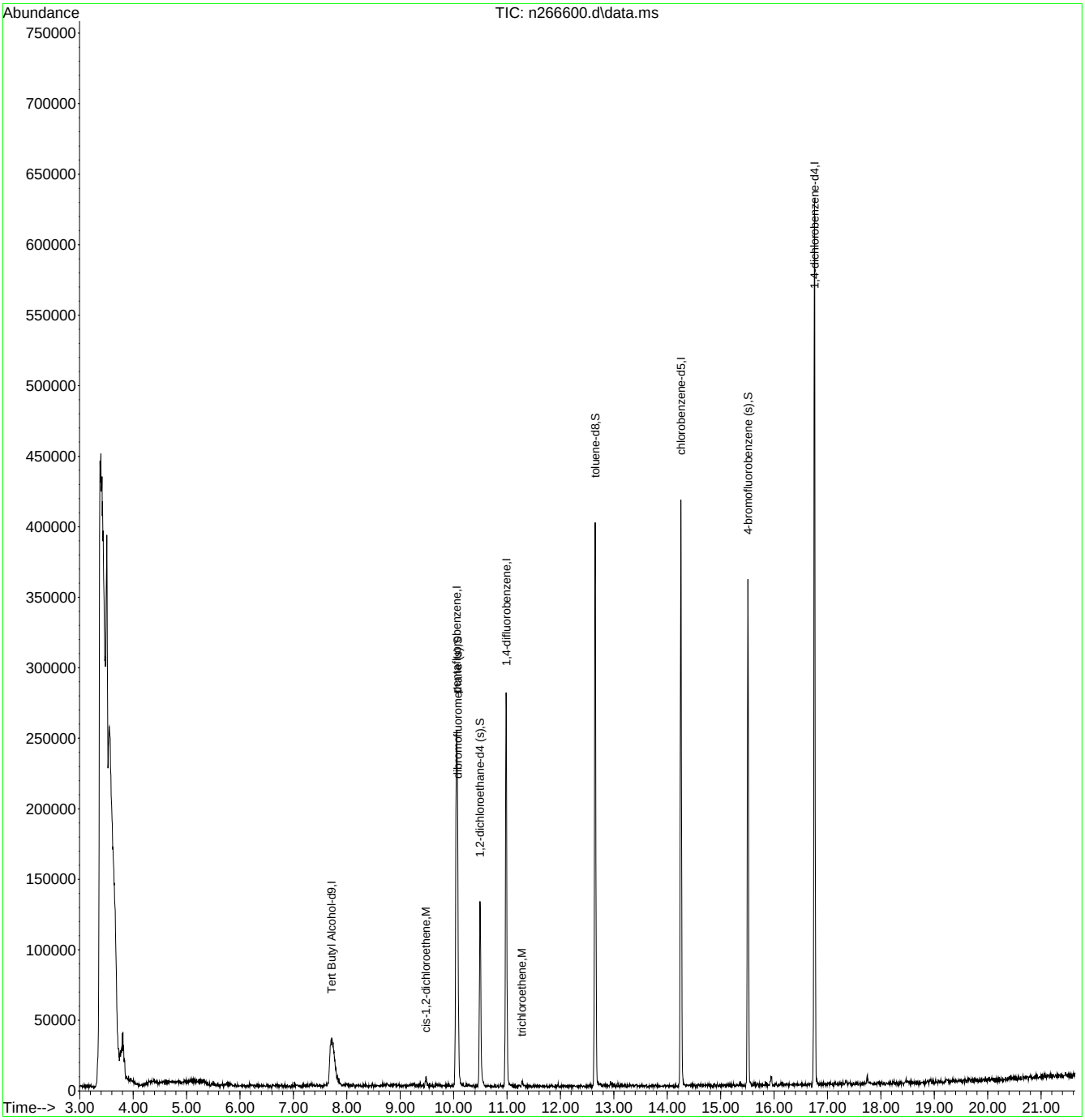
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.717	65	101704	300.00	ug/L	0.02
4) pentafluorobenzene	10.055	168	149688	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.986	114	208892	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	203063	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	148036	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.076	113	83042	35.69	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 118.97%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	90241	35.13	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 117.10%			
75) toluene-d8	12.649	98	245865	27.76	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.53%			
97) 4-bromofluorobenzene (s)	15.510	95	102240	29.82	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.40%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.479	96	2974	1.19	ug/L	# 59
62) trichloroethene	11.279	95	842	0.42	ug/L	# 64

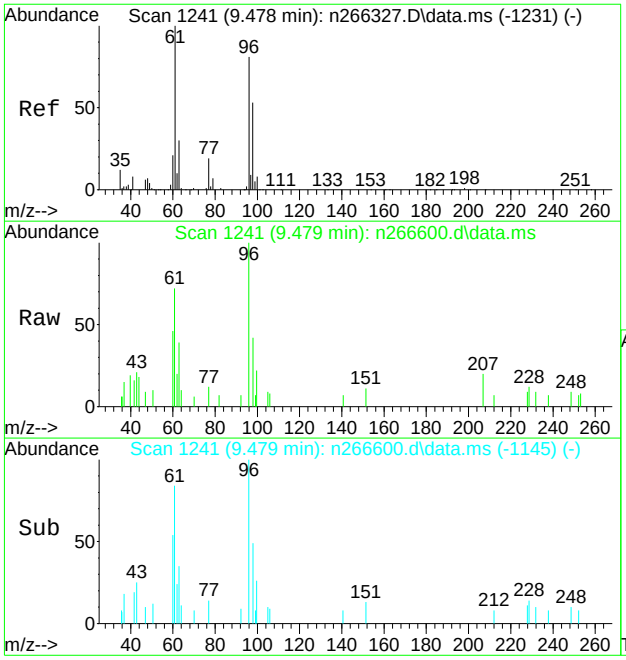
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266600.d
Acq On : 13 Dec 2017 4:29 am
Operator : CHELSEAS
Sample : jc56966-3 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 38 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:27:18 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

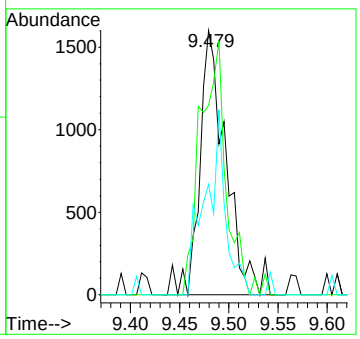


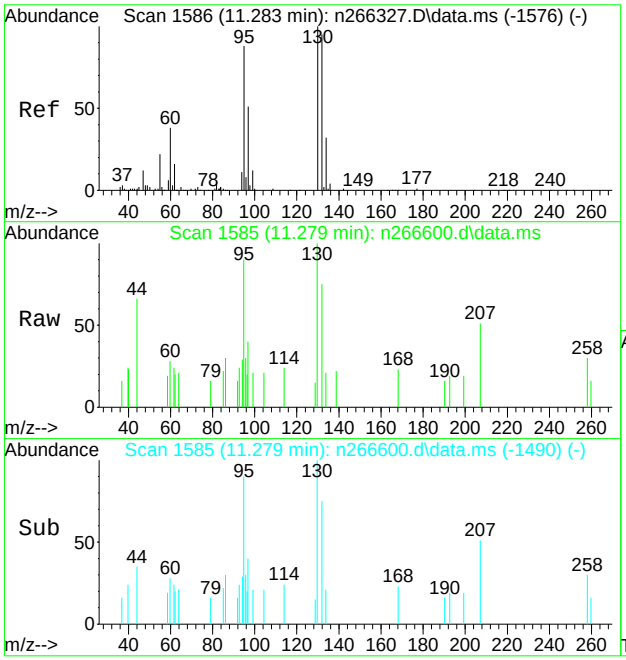


#39
cis-1,2-dichloroethene
Concen: 1.19 ug/L
RT: 9.479 min Scan# 1241
Delta R.T. 0.001 min
Lab File: n266600.d
Acq: 13 Dec 2017 4:29 am

Tgt Ion: 96 Resp: 2974

Ion	Ratio	Lower	Upper
96	100		
61	71.7	94.2	154.2#
98	41.8	35.9	95.9

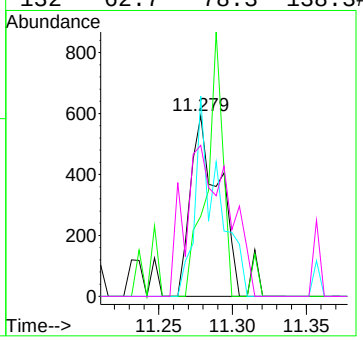




#62
trichloroethene
Concen: 0.42 ug/L
RT: 11.279 min Scan# 1585
Delta R.T. -0.004 min
Lab File: n266600.d
Acq: 13 Dec 2017 4:29 am

Tgt Ion: 95 Resp: 842

Ion	Ratio	Lower	Upper
95	100		
97	33.2	31.3	91.3
130	83.1	84.0	144.0#
132	62.7	78.3	138.3#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266601.d
Acq On : 13 Dec 2017 4:58 am
Operator : CHELSEAS
Sample : jc56966-4 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 39 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:28:08 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

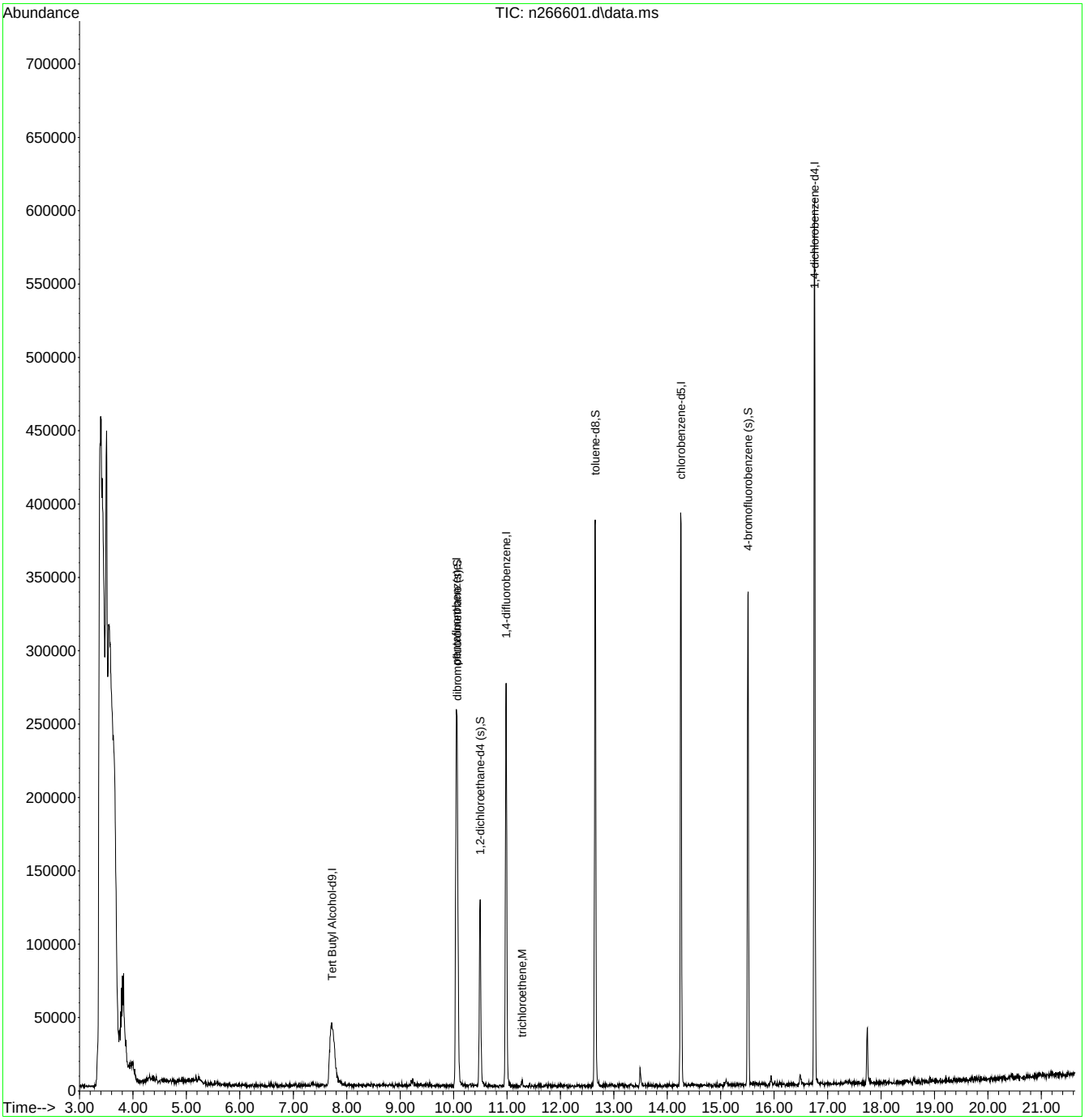
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.725	65	134160	300.00	ug/L	0.03
4) pentafluorobenzene	10.052	168	156064	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.983	114	208835	30.00	ug/L	0.00
74) chlorobenzene-d5	14.257	117	197388	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.757	152	144780	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.068	113	82891	34.17	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 113.90%			
54) 1,2-dichloroethane-d4 (s)	10.497	65	91126	35.48	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 118.27%			
75) toluene-d8	12.652	98	246829	28.67	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.57%			
97) 4-bromofluorobenzene (s)	15.507	95	99944	29.81	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.37%			
Target Compounds						Qvalue
62) trichloroethene	11.281	95	797	0.40	ug/L	# 53

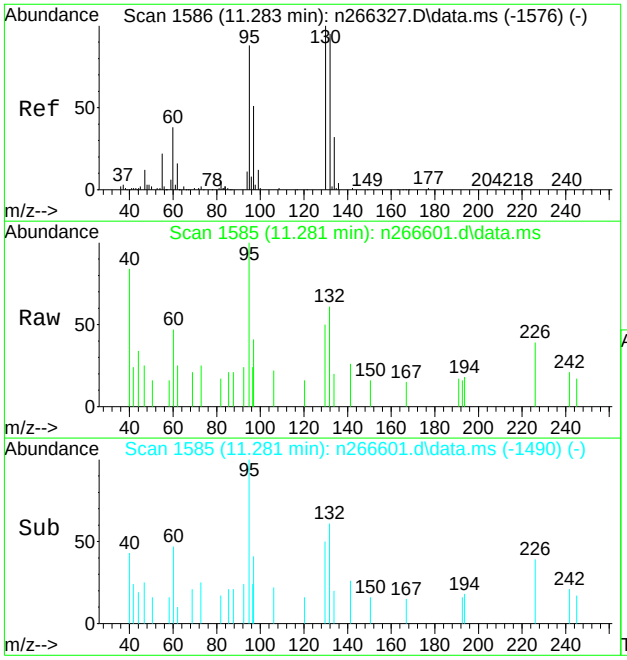
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266601.d
Acq On : 13 Dec 2017 4:58 am
Operator : CHELSEAS
Sample : jc56966-4 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 39 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:28:08 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

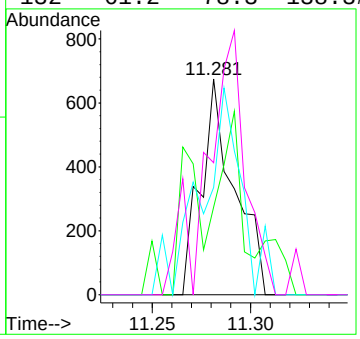




#62
trichloroethene
Concen: 0.40 ug/L
RT: 11.281 min Scan# 1585
Delta R.T. -0.002 min
Lab File: n266601.d
Acq: 13 Dec 2017 4:58 am

Tgt Ion: 95 Resp: 797

Ion	Ratio	Lower	Upper
95	100		
97	40.6	31.3	91.3
130	49.8	84.0	144.0#
132	61.2	78.3	138.3#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266602.d
Acq On : 13 Dec 2017 5:28 am
Operator : CHELSEAS
Sample : jc56966-5 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 40 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:28:53 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

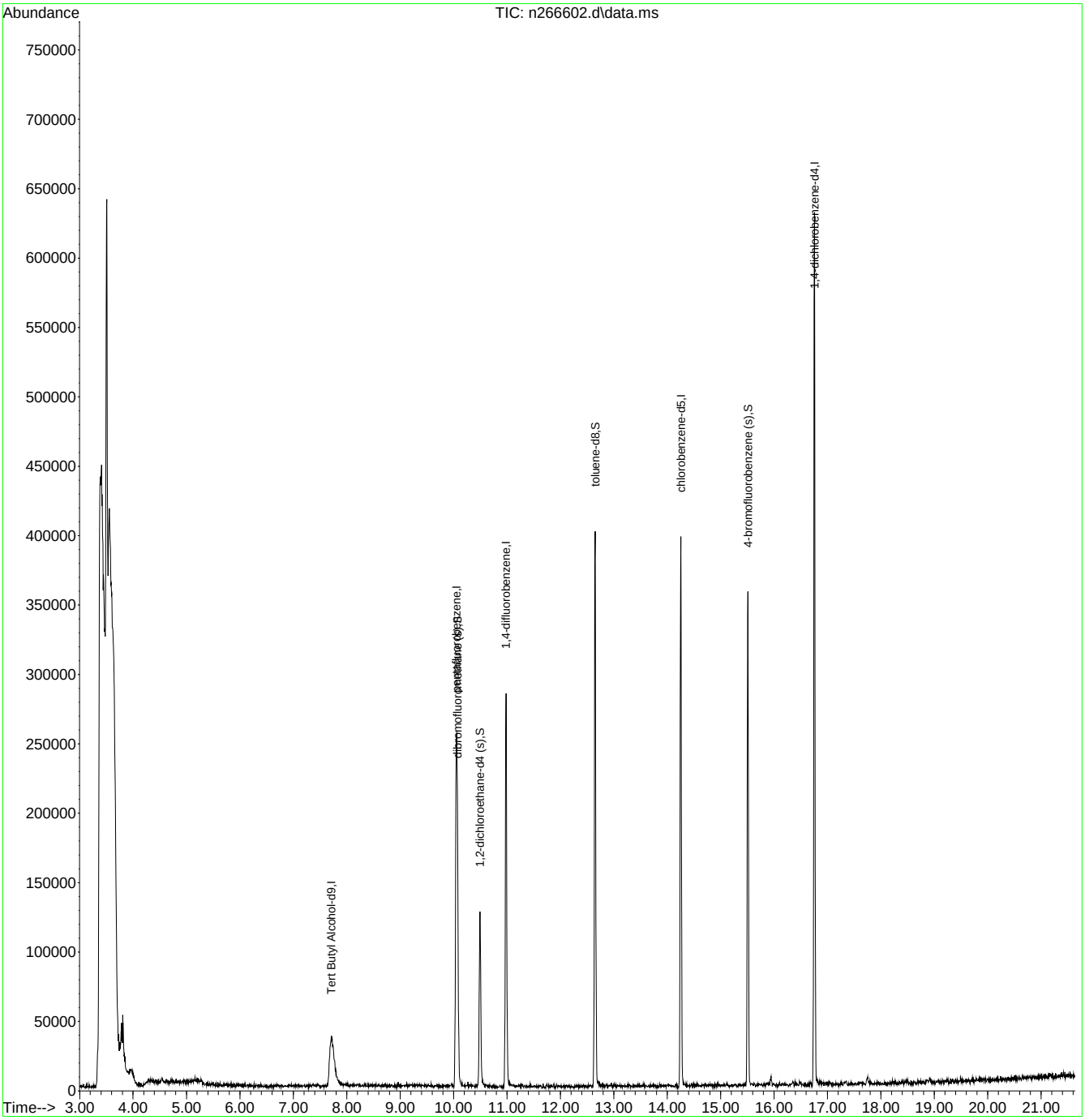
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.708	65	109648	300.00	ug/L	0.01
4) pentafluorobenzene	10.051	168	158700	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.982	114	215921	30.00	ug/L	0.00
74) chlorobenzene-d5	14.256	117	198527	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.756	152	150421	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.072	113	86552	35.08	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 116.93%			
54) 1,2-dichloroethane-d4 (s)	10.495	65	92306	34.76	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 115.87%			
75) toluene-d8	12.650	98	250106	28.88	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.27%			
97) 4-bromofluorobenzene (s)	15.511	95	99196	28.47	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.90%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266602.d
Acq On : 13 Dec 2017 5:28 am
Operator : CHELSEAS
Sample : jc56966-5 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 40 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:28:53 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228722.d
Acq On : 13 Dec 2017 4:51 am
Operator : CHELSEAS
Sample : jc56966-6 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 39 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:50:47 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

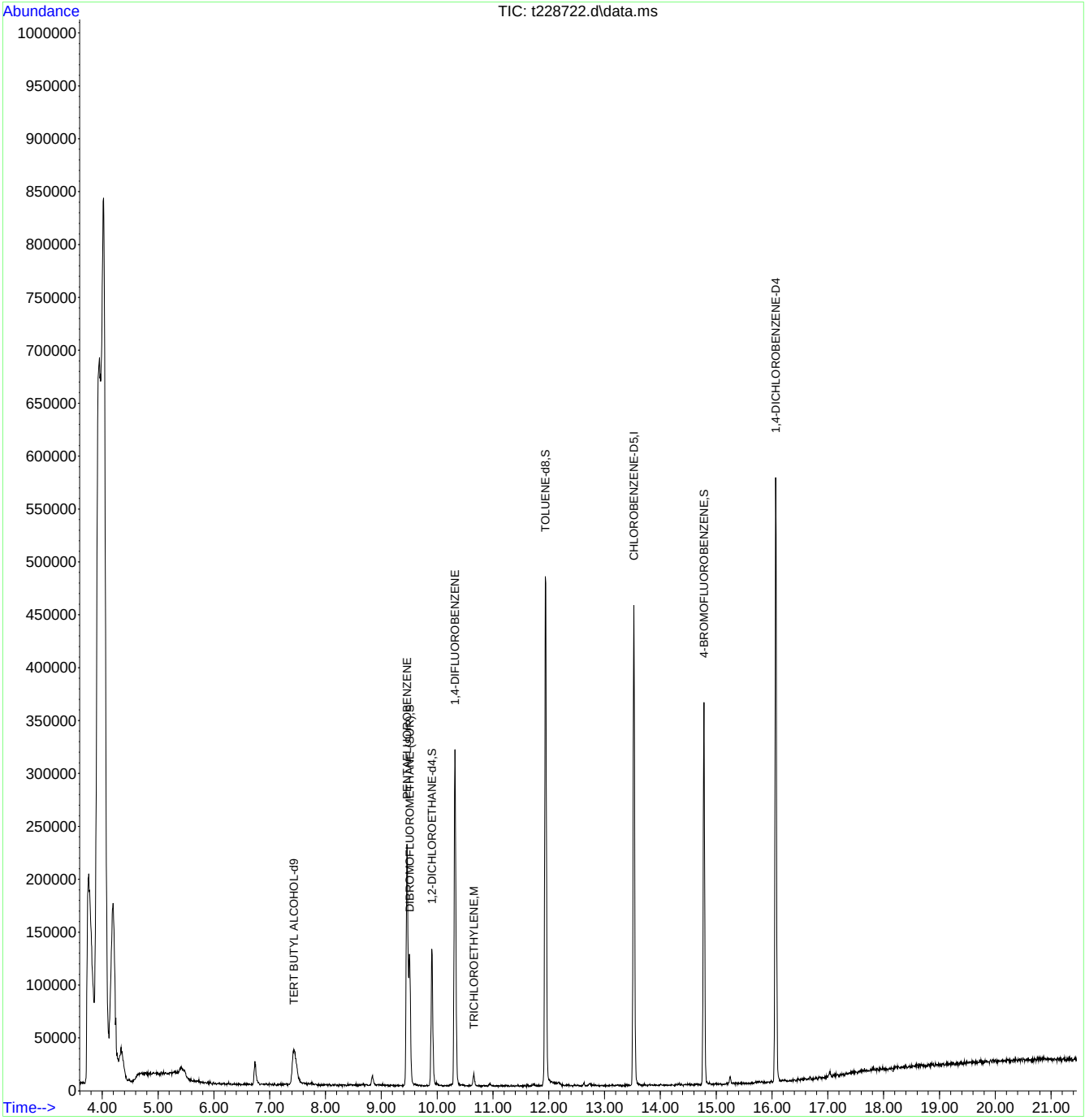
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.432	65	96261	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.461	168	184105	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.319	114	280382	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.525	117	271596	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.067	152	161985	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.508	113	83020	32.71	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.03%			
50) 1,2-DICHLOROETHANE-d4	9.906	65	93389	34.78	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 115.93%			
67) TOLUENE-d8	11.940	98	362522	31.30	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.33%			
90) 4-BROMOFLUOROBENZENE	14.780	174	112454	29.03	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.77%			
Target Compounds						Qvalue
56) TRICHLOROETHYLENE	10.659	95	4184	1.43	PPb	# 80

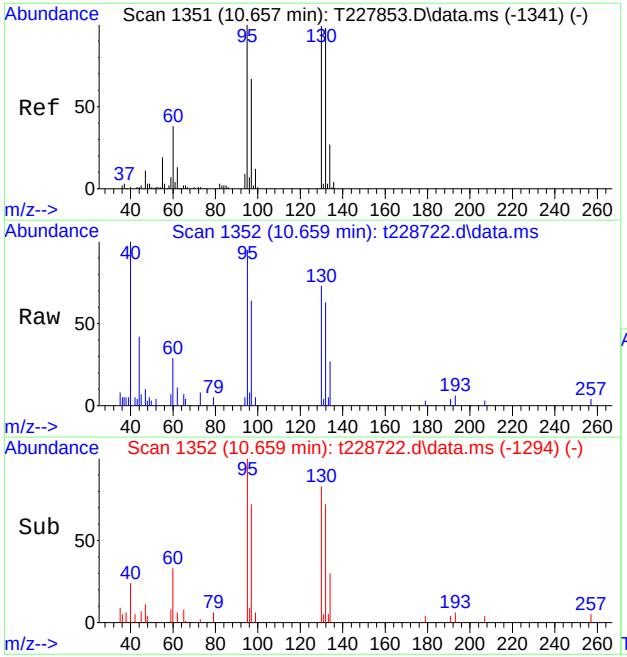
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228722.d
Acq On : 13 Dec 2017 4:51 am
Operator : CHELSEAS
Sample : jc56966-6 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 39 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:50:47 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

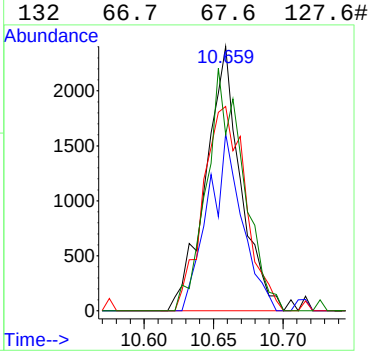




#56
TRICHLOROETHYLENE
Concen: 1.43 PPb
RT: 10.659 min Scan# 1352
Delta R.T. 0.002 min
Lab File: t228722.d
Acq: 13 Dec 2017 4:51 am

Tgt Ion: 95 Resp: 4184

Ion	Ratio	Lower	Upper
95	100		
97	67.0	36.9	96.9
130	77.3	68.7	128.7
132	66.7	67.6	127.6#



7.1.6

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266603.d
Acq On : 13 Dec 2017 5:57 am
Operator : CHELSEAS
Sample : jc56966-7 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 41 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:29:45 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

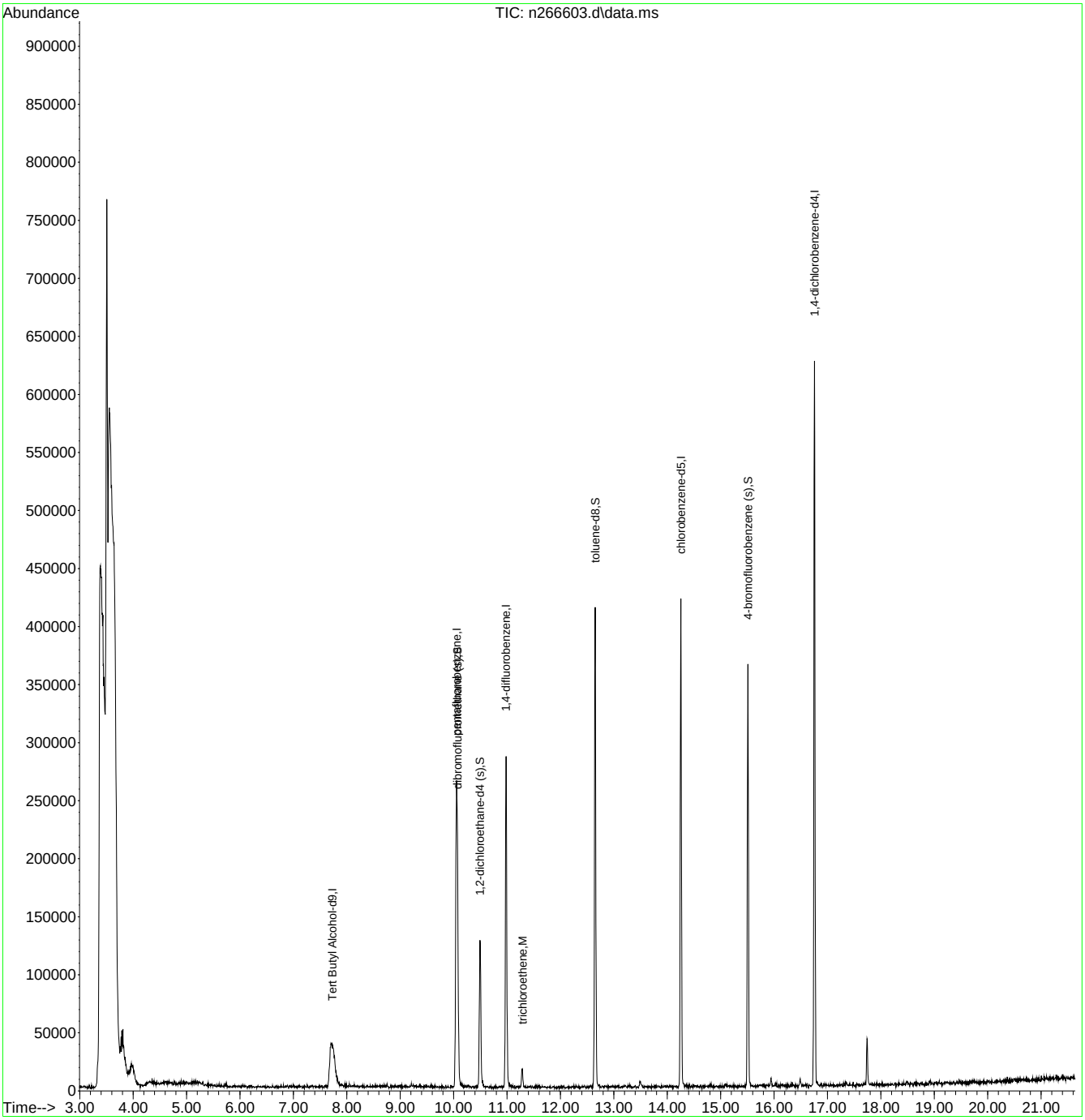
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.728	65	119424	300.00	ug/L	0.03
4) pentafluorobenzene	10.055	168	162636	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	211647	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	205754	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	144749	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.071	113	83078	32.86	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.53%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	90457	34.75	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 115.83%			
75) toluene-d8	12.649	98	252121	28.09	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.63%			
97) 4-bromofluorobenzene (s)	15.510	95	100326	29.93	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.77%			
Target Compounds						Qvalue
62) trichloroethene	11.289	95	5143	2.55	ug/L	87

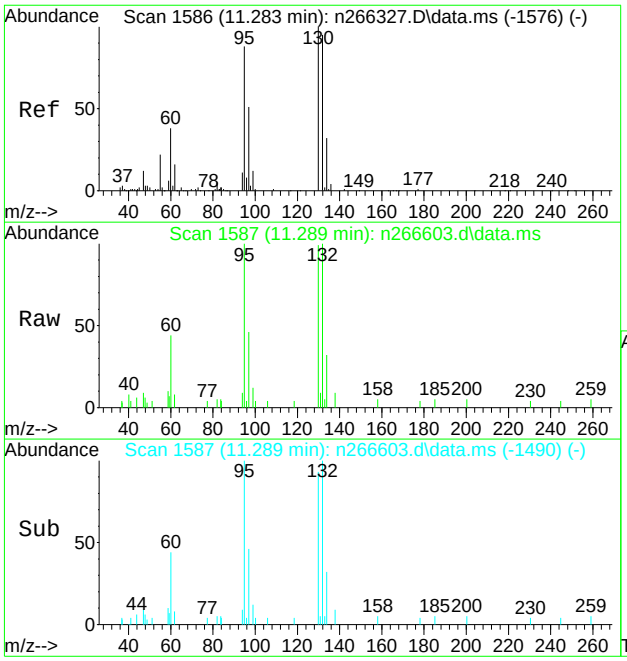
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266603.d
Acq On : 13 Dec 2017 5:57 am
Operator : CHELSEAS
Sample : jc56966-7 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 41 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:29:45 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

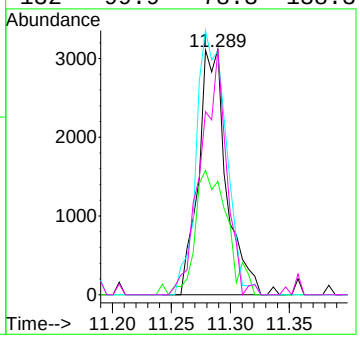




#62
trichloroethene
Concen: 2.55 ug/L
RT: 11.289 min Scan# 1587
Delta R.T. 0.007 min
Lab File: n266603.d
Acq: 13 Dec 2017 5:57 am

Tgt Ion: 95 Resp: 5143

Ion	Ratio	Lower	Upper
95	100		
97	46.2	31.3	91.3
130	99.2	84.0	144.0
132	99.9	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266604.d
Acq On : 13 Dec 2017 6:27 am
Operator : CHELSEAS
Sample : jc56966-8 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 42 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:30:29 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

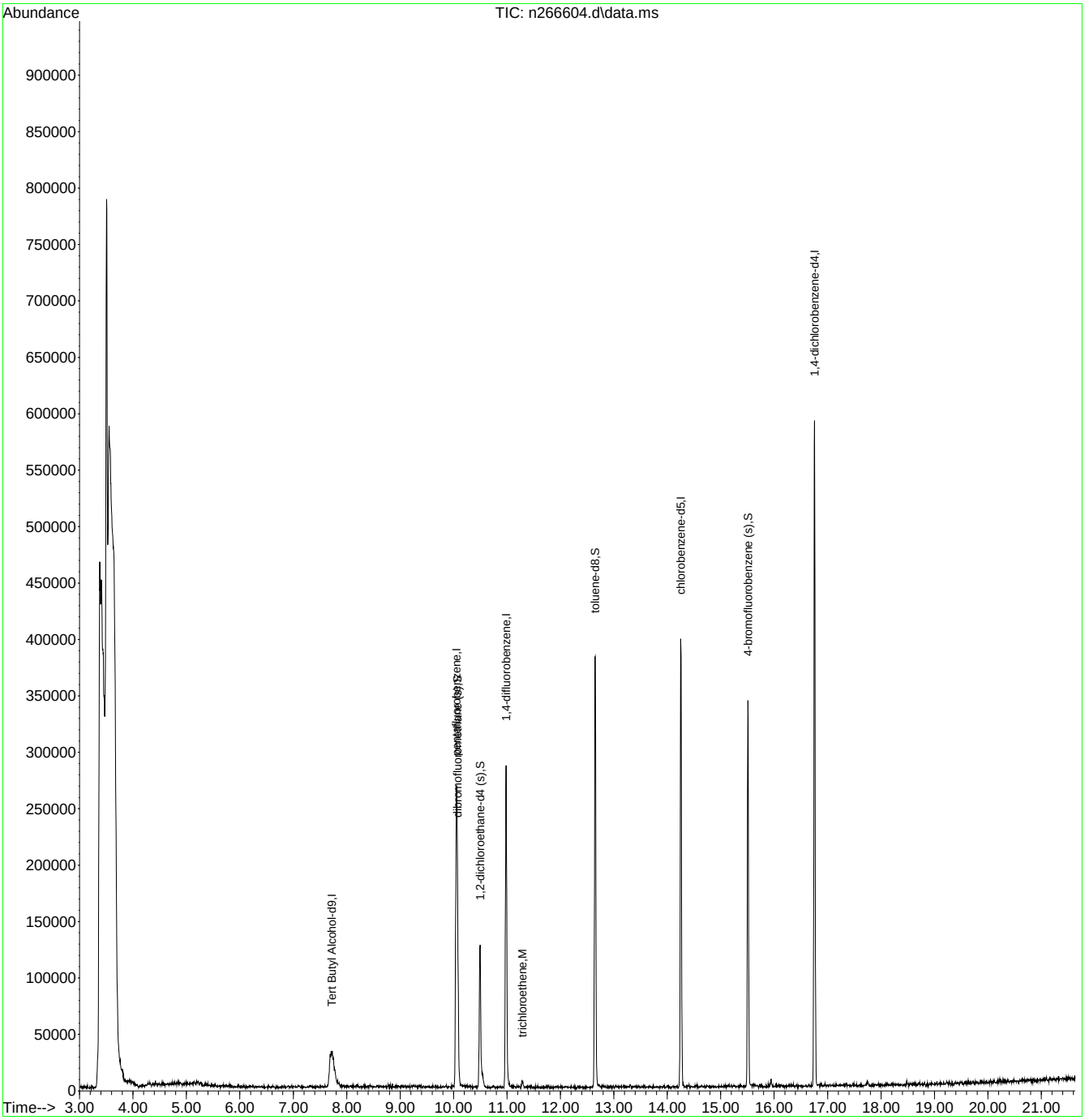
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.719	65	94188	300.00	ug/L	0.02
4) pentafluorobenzene	10.052	168	158689	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.983	114	210903	30.00	ug/L	0.00
74) chlorobenzene-d5	14.252	117	200950	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.757	152	144720	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.073	113	83537	33.86	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 112.87%			
54) 1,2-dichloroethane-d4 (s)	10.497	65	91484	35.27	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 117.57%			
75) toluene-d8	12.646	98	241634	27.57	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 91.90%			
97) 4-bromofluorobenzene (s)	15.507	95	100191	29.89	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.63%			
Target Compounds						Qvalue
62) trichloroethene	11.286	95	2272	1.13	ug/L	# 70

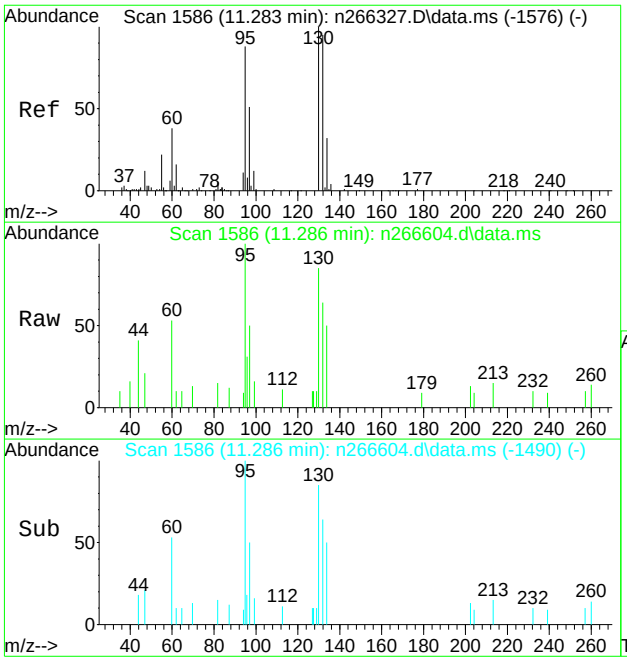
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266604.d
Acq On : 13 Dec 2017 6:27 am
Operator : CHELSEAS
Sample : jc56966-8 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 42 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:30:29 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

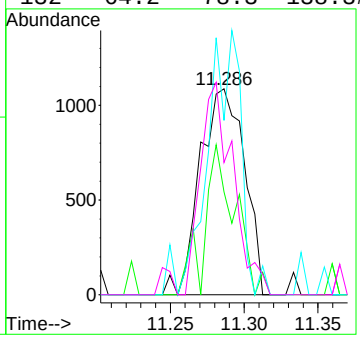




#62
trichloroethene
Concen: 1.13 ug/L
RT: 11.286 min Scan# 1586
Delta R.T. 0.004 min
Lab File: n266604.d
Acq: 13 Dec 2017 6:27 am

Tgt Ion: 95 Resp: 2272

Ion	Ratio	Lower	Upper
95	100		
97	49.9	31.3	91.3
130	84.6	84.0	144.0
132	64.2	78.3	138.3#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266597.d
Acq On : 13 Dec 2017 3:01 am
Operator : CHELSEAS
Sample : jc56966-9 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 35 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:23:50 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

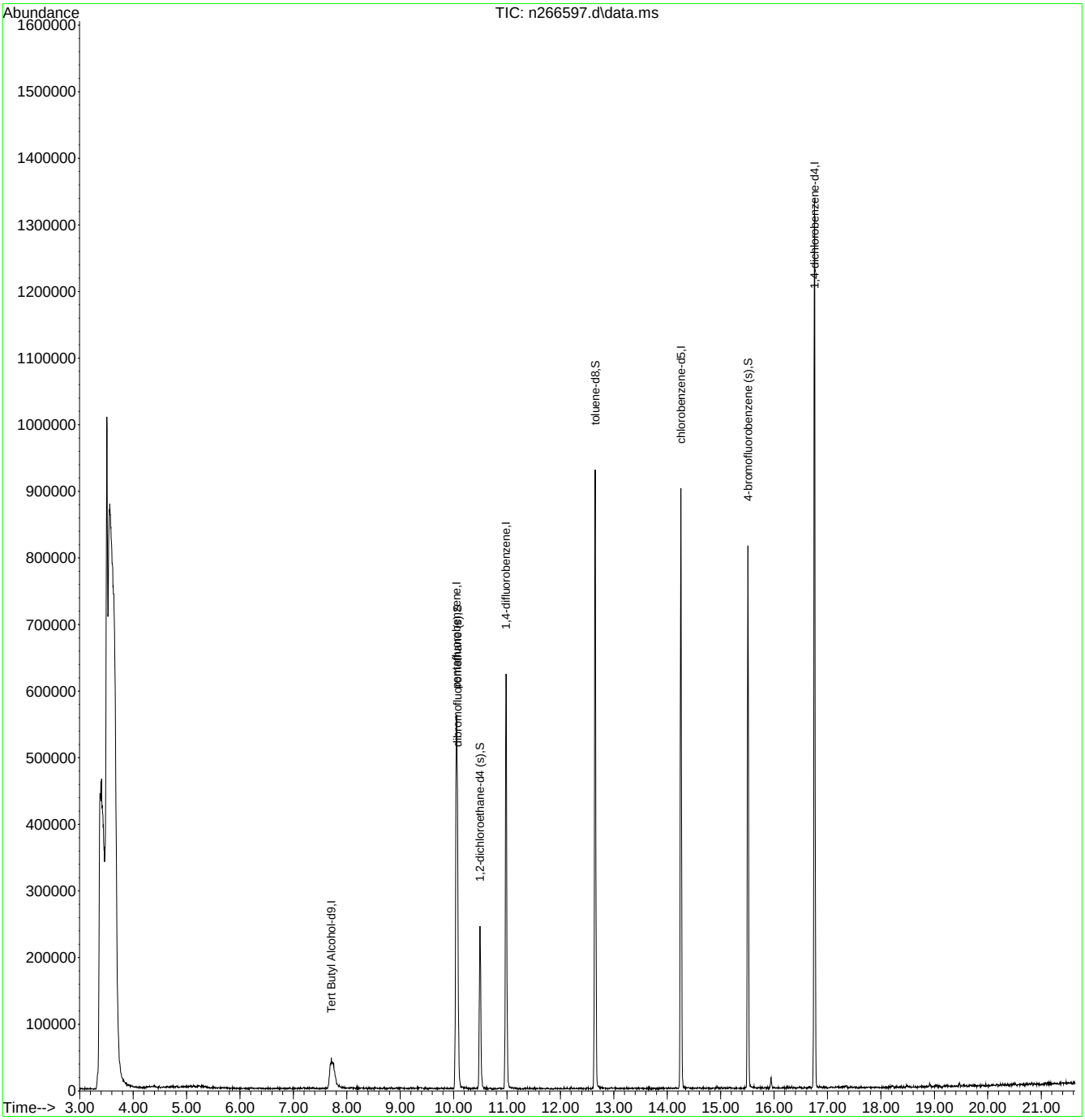
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.711	65	137272	300.00	ug/L	0.02
4) pentafluorobenzene	10.049	168	341841	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	468588	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	438498	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	320397	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.070	113	167192	31.46	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.87%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	172739	29.97	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 99.90%			
75) toluene-d8	12.648	98	543308	28.40	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.67%			
97) 4-bromofluorobenzene (s)	15.509	95	230331	31.04	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.47%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266597.d
Acq On : 13 Dec 2017 3:01 am
Operator : CHELSEAS
Sample : jc56966-9 Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 35 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:23:50 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228723.d
Acq On : 13 Dec 2017 5:21 am
Operator : CHELSEAS
Sample : jc56966-10 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 40 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 05:08:21 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

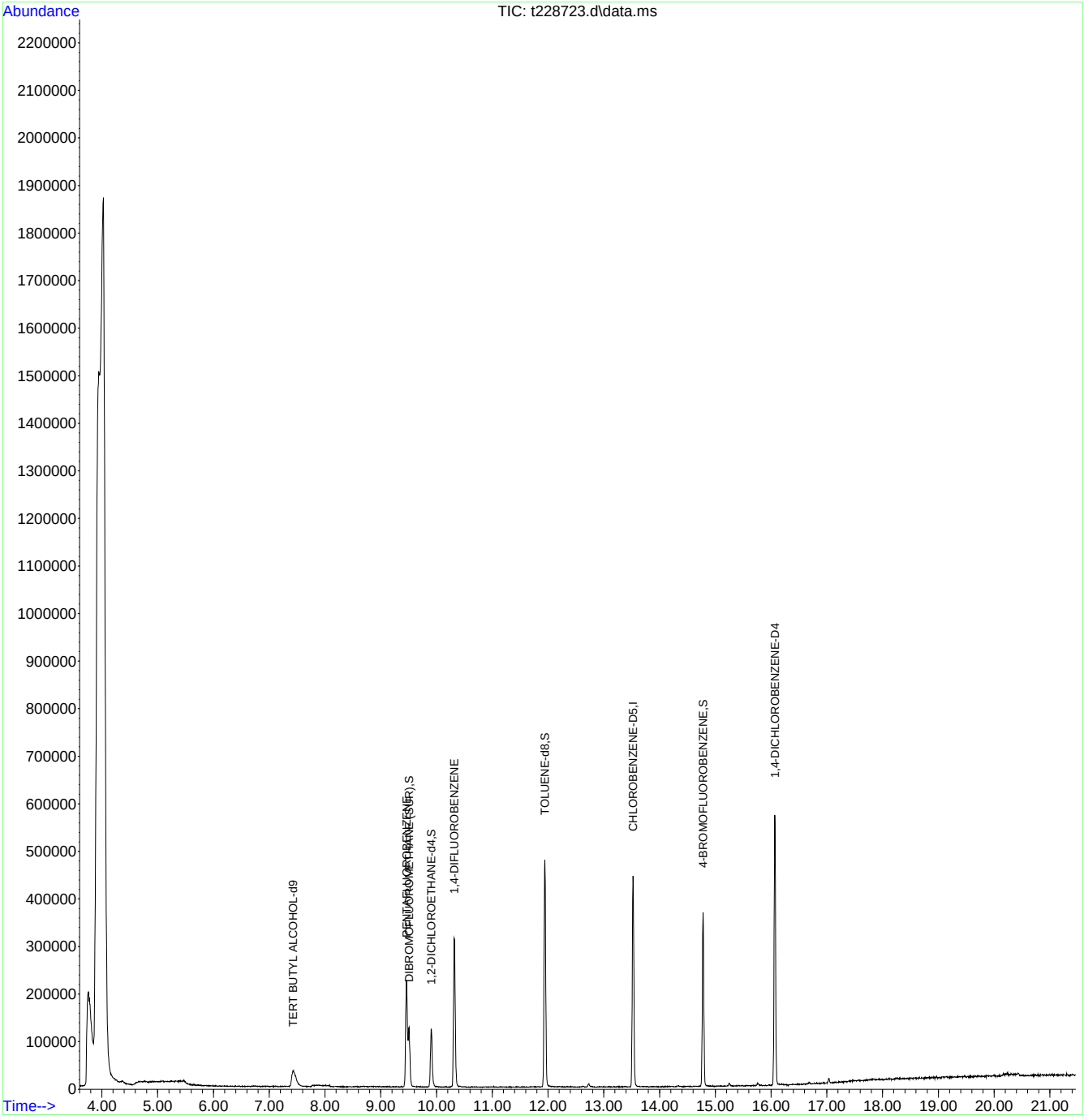
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.425	65	97048	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.465	168	180676	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.317	114	275402	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.523	117	273800	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.070	152	159716	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.506	113	83067	33.35	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.17%			
50) 1,2-DICHLOROETHANE-d4	9.904	65	93112	35.30	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 117.67%			
67) TOLUENE-d8	11.944	98	355421	30.44	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.47%			
90) 4-BROMOFLUOROBENZENE	14.778	174	113387	29.69	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.97%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228723.d
Acq On : 13 Dec 2017 5:21 am
Operator : CHELSEAS
Sample : jc56966-10 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 40 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 05:08:21 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228724.d
Acq On : 13 Dec 2017 5:51 am
Operator : CHELSEAS
Sample : jc56966-11 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 41 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:52:46 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

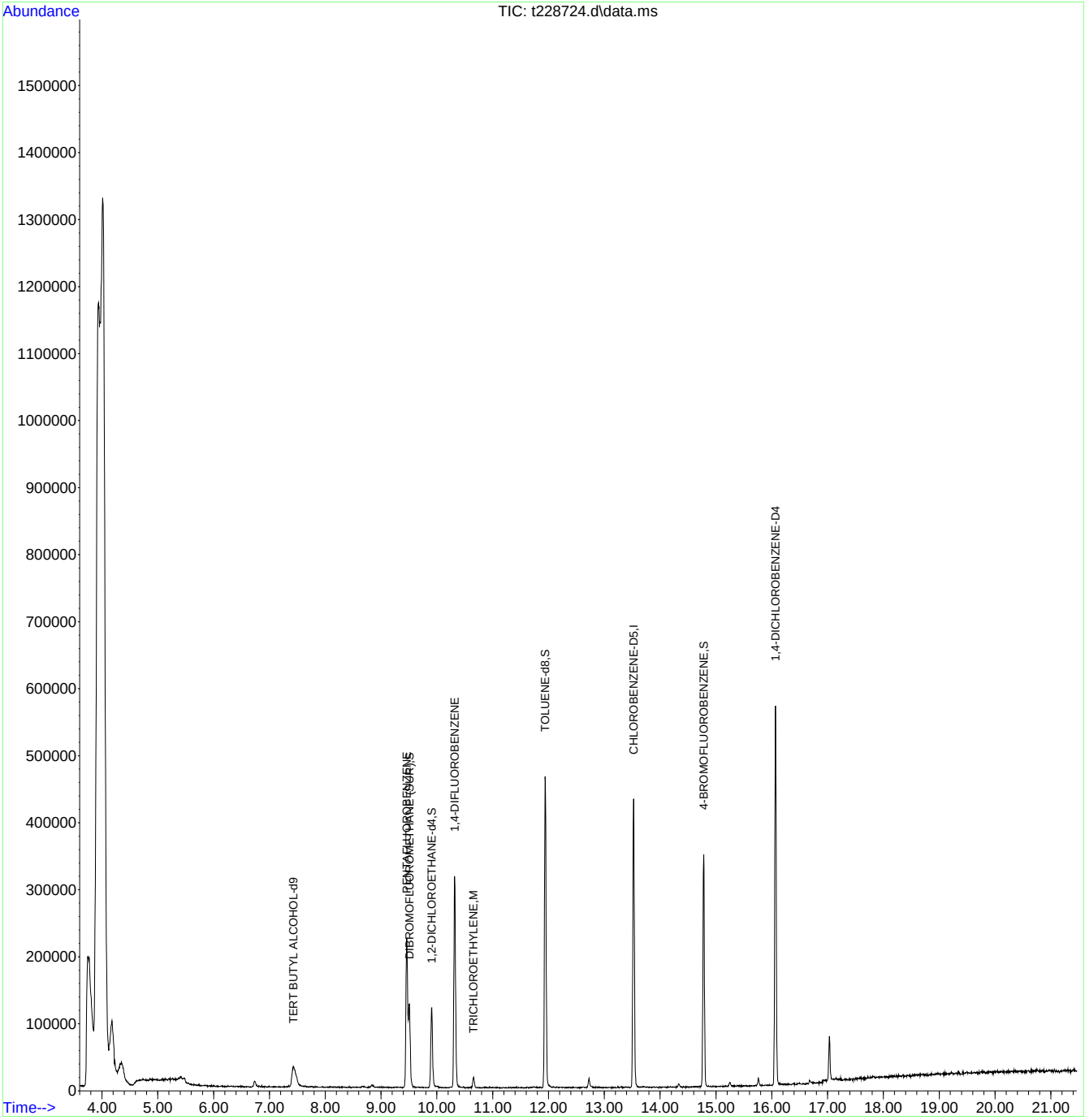
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.426	65	86349	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.460	168	181334	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.318	114	275284	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.524	117	259096	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.066	152	158756	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.507	113	84465	33.79	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 112.63%			
50) 1,2-DICHLOROETHANE-d4	9.905	65	89650	34.01	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.37%			
67) TOLUENE-d8	11.939	98	348145	31.51	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 105.03%			
90) 4-BROMOFLUOROBENZENE	14.779	174	109620	28.87	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.23%			
Target Compounds						Qvalue
56) TRICHLOROETHYLENE	10.653	95	5881	2.05	PPb	# 69

(#) = qualifier out of range (m) = manual integration (+) = signals summed

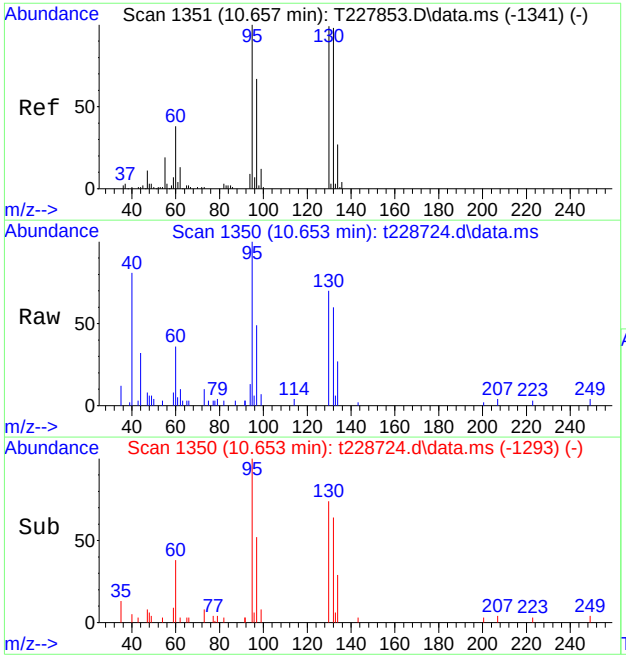
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228724.d
Acq On : 13 Dec 2017 5:51 am
Operator : CHELSEAS
Sample : jc56966-11 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 41 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:52:46 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



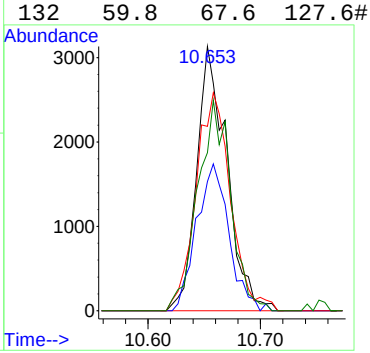
MT9358.M Thu Dec 14 04:52:53 2017 Page: 2



#56
TRICHLOROETHYLENE
Concen: 2.05 PPb
RT: 10.653 min Scan# 1350
Delta R.T. -0.004 min
Lab File: t228724.d
Acq: 13 Dec 2017 5:51 am

Tgt Ion: 95 Resp: 5881

Ion	Ratio	Lower	Upper
95	100		
97	48.8	36.9	96.9
130	69.7	68.7	128.7
132	59.8	67.6	127.6#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228725.d
Acq On : 13 Dec 2017 6:21 am
Operator : CHELSEAS
Sample : jc56966-12 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 42 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:55:02 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

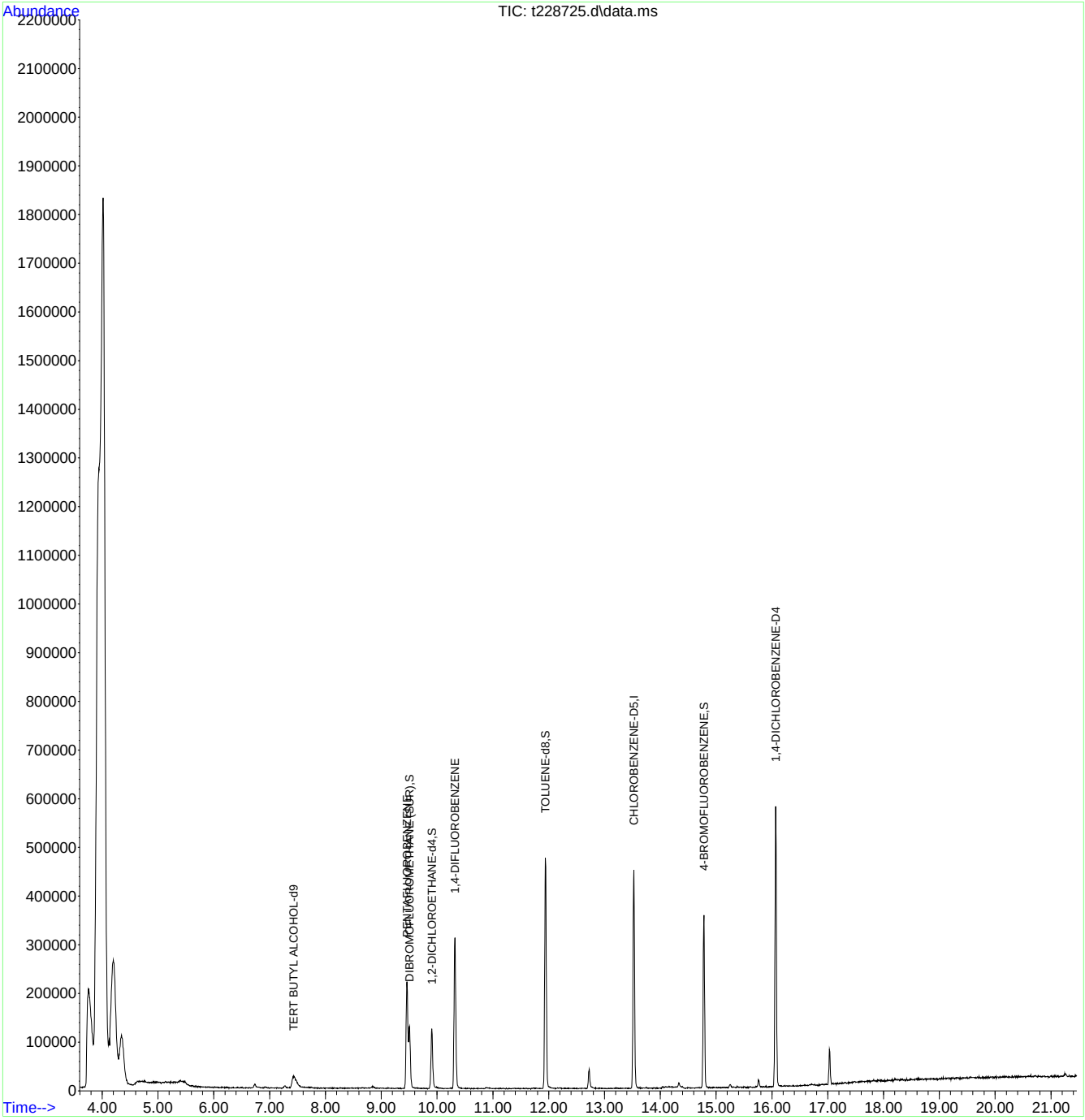
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.428	65	73106	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.462	168	175652	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.320	114	273516	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.526	117	270646	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.068	152	160982	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.504	113	83624	34.54	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 115.13%			
50) 1,2-DICHLOROETHANE-d4	9.907	65	91028	34.75	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 115.83%			
67) TOLUENE-d8	11.941	98	354636	30.73	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.43%			
90) 4-BROMOFLUOROBENZENE	14.781	174	113012	29.36	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.87%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228725.d
Acq On : 13 Dec 2017 6:21 am
Operator : CHELSEAS
Sample : jc56966-12 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 42 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:55:02 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228726.d
Acq On : 13 Dec 2017 6:52 am
Operator : CHELSEAS
Sample : jc56966-13 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 43 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:56:21 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

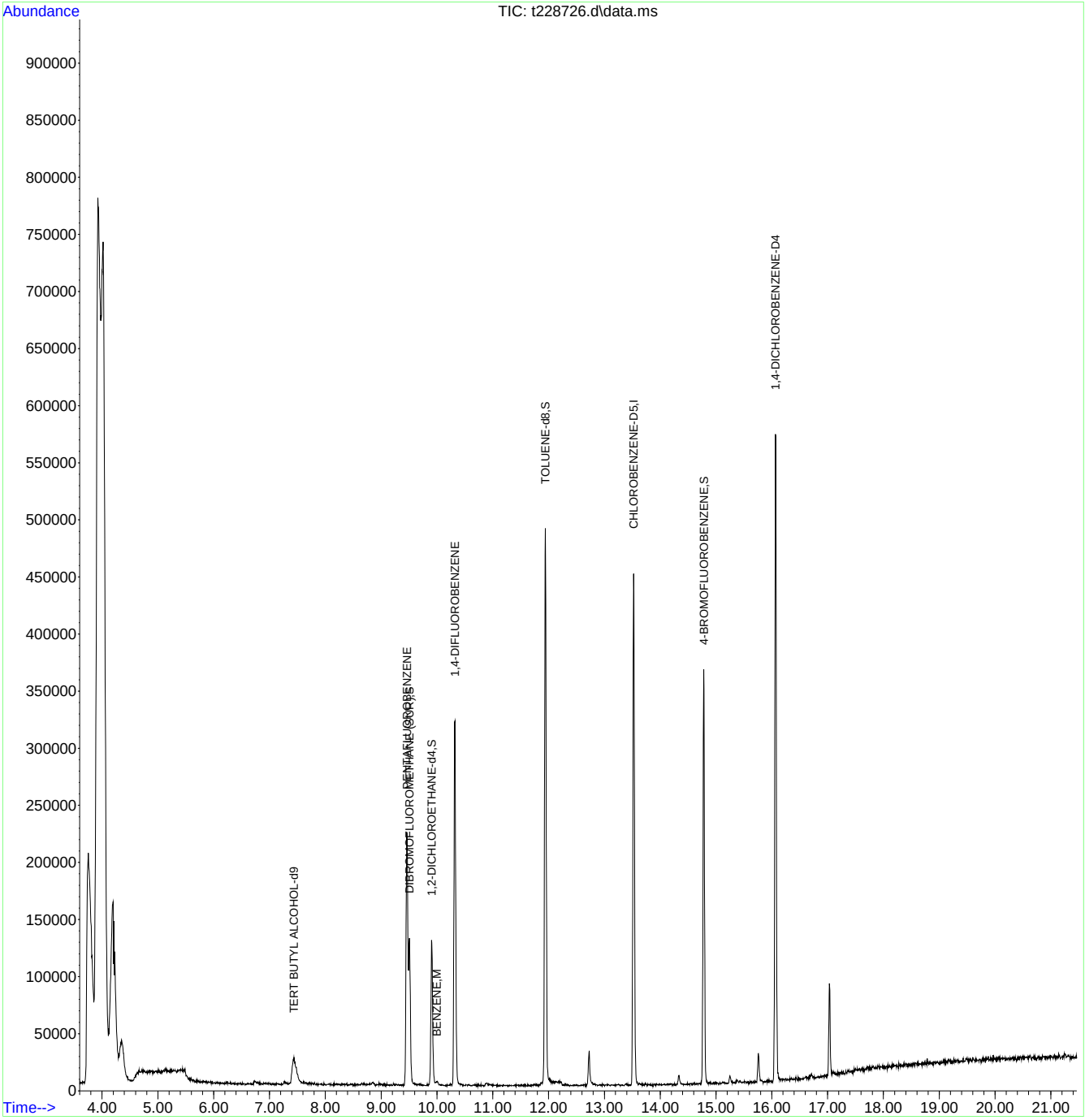
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.435	65	65203	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.464	168	184247	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.322	114	285190	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.523	117	270478	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.064	152	160484	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.506	113	85958	33.85	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 112.83%			
50) 1,2-DICHLOROETHANE-d4	9.903	65	94146	34.47	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 114.90%			
67) TOLUENE-d8	11.943	98	360012	31.22	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.07%			
90) 4-BROMOFLUOROBENZENE	14.783	174	111762	29.12	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.07%			
Target Compounds						Qvalue
51) BENZENE	9.997	78	2975	0.23	PPb	90

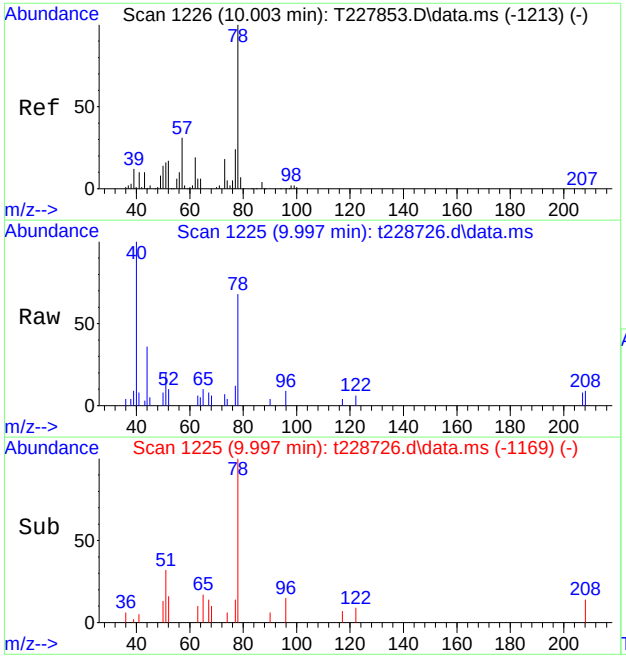
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228726.d
Acq On : 13 Dec 2017 6:52 am
Operator : CHELSEAS
Sample : jc56966-13 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 43 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:56:21 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

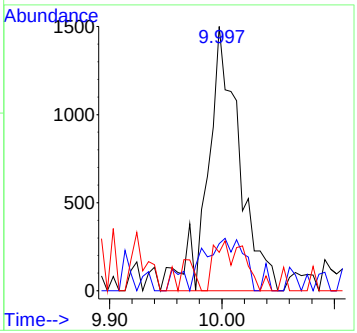




#51
BENZENE
Concen: 0.23 PPb
RT: 9.997 min Scan# 1225
Delta R.T. -0.005 min
Lab File: t228726.d
Acq: 13 Dec 2017 6:52 am

Tgt Ion: 78 Resp: 2975

Ion	Ratio	Lower	Upper
78	100		
77	17.9	0.0	54.0
52	14.6	0.0	47.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266714.d
Acq On : 15 Dec 2017 4:52 pm
Operator : CHELSEAS
Sample : jc56966-14 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:21:39 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

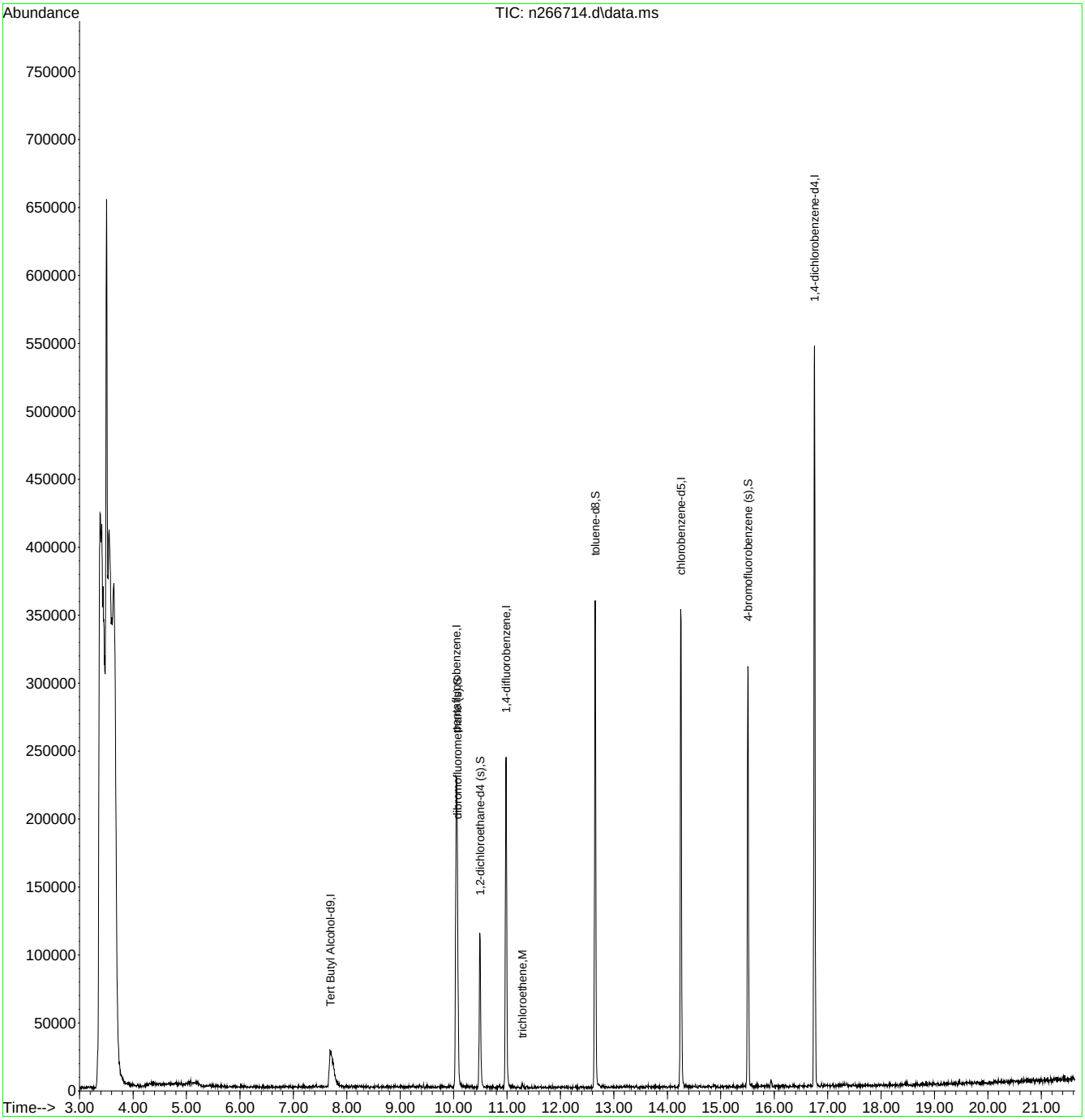
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.693	65	72480	300.00	ug/L	0.00
4) pentafluorobenzene	10.051	168	134438	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.982	114	185848	30.00	ug/L	0.00
74) chlorobenzene-d5	14.256	117	177139	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.756	152	131550	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.072	113	67896	32.49	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.30%			
54) 1,2-dichloroethane-d4 (s)	10.496	65	76811	33.61	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 112.03%			
75) toluene-d8	12.651	98	214642	27.78	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.60%			
97) 4-bromofluorobenzene (s)	15.506	95	91024	29.88	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.60%			
Target Compounds						Qvalue
62) trichloroethene	11.286	95	728	0.41	ug/L	# 40

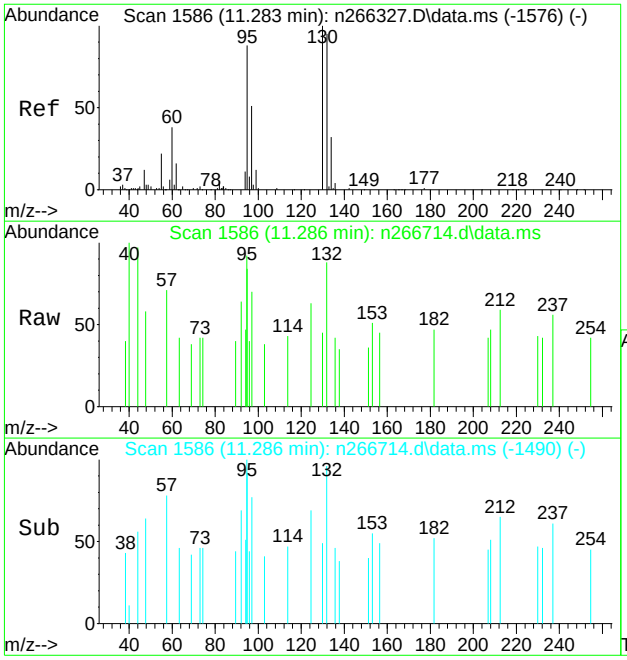
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266714.d
Acq On : 15 Dec 2017 4:52 pm
Operator : CHELSEAS
Sample : jc56966-14 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:21:39 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

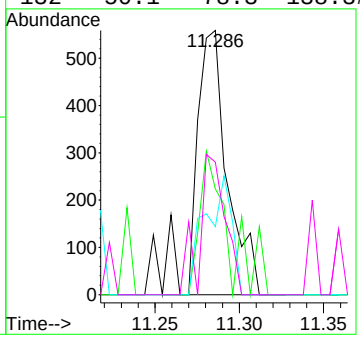




#62
trichloroethene
Concen: 0.41 ug/L
RT: 11.286 min Scan# 1586
Delta R.T. 0.003 min
Lab File: n266714.d
Acq: 15 Dec 2017 4:52 pm

Tgt Ion: 95 Resp: 728

Ion	Ratio	Lower	Upper
95	100		
97	40.1	31.3	91.3
130	25.8	84.0	144.0#
132	50.1	78.3	138.3#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266757.d
Acq On : 18 Dec 2017 1:45 pm
Operator : CHELSEAS
Sample : jc56966-15 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:54:46 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

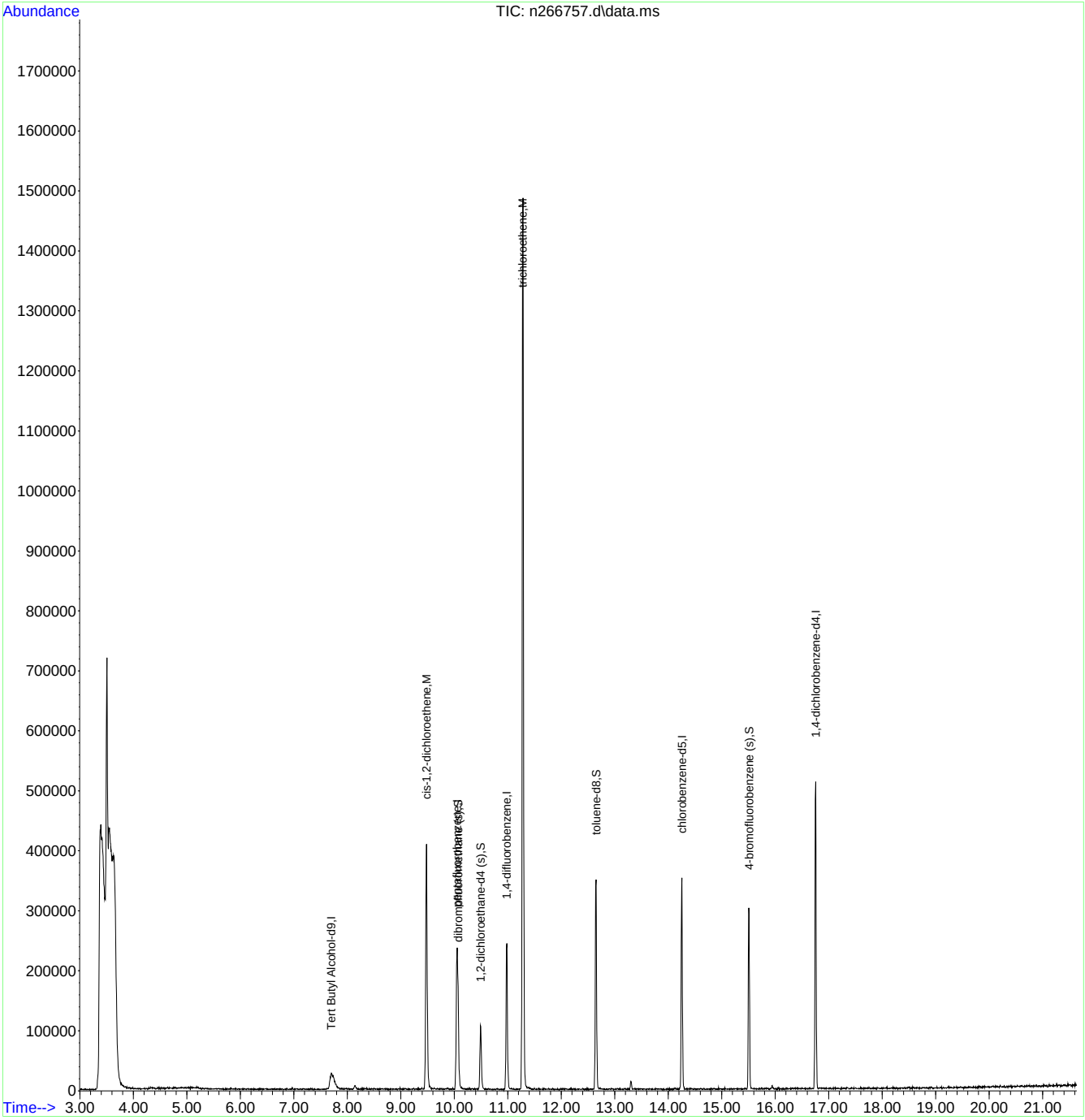
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.696	65	73344	300.00	ug/L	0.00
4) pentafluorobenzene	10.050	168	138459	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	186802	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	173245	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	119800	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.071	113	69410	32.25	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 107.50%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	75068	32.68	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 108.93%			
75) toluene-d8	12.649	98	221943	29.37	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.90%			
97) 4-bromofluorobenzene (s)	15.510	95	89137	32.13	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 107.10%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.480	96	181410	78.40	ug/L	97
62) trichloroethene	11.279	95	448331	252.15	ug/L	92

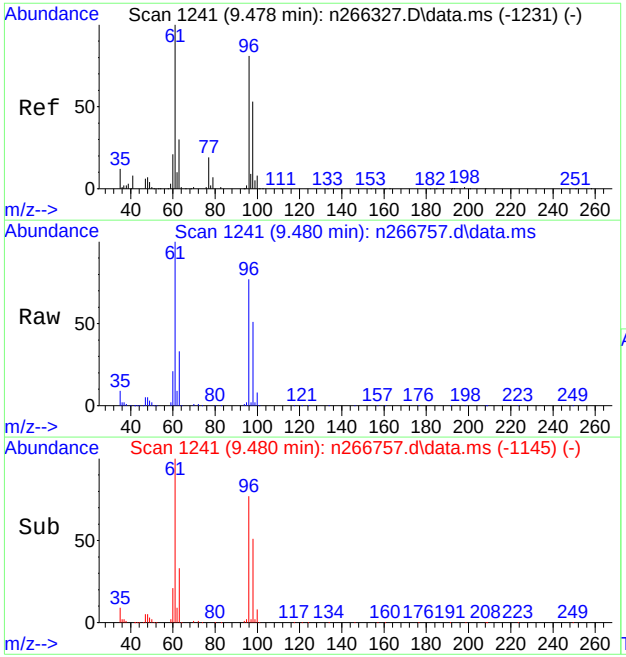
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266757.d
Acq On : 18 Dec 2017 1:45 pm
Operator : CHELSEAS
Sample : jc56966-15 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:54:46 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

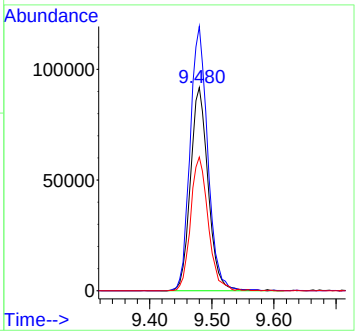


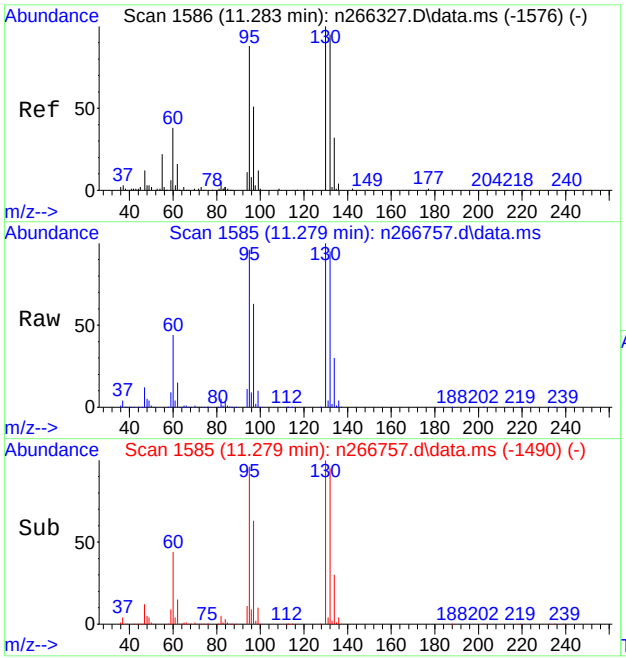


#39
cis-1,2-dichloroethene
Concen: 78.40 ug/L
RT: 9.480 min Scan# 1241
Delta R.T. 0.001 min
Lab File: n266757.d
Acq: 18 Dec 2017 1:45 pm

Tgt Ion: 96 Resp: 181410

Ion	Ratio	Lower	Upper
96	100		
61	130.2	94.2	154.2
98	65.9	35.9	95.9

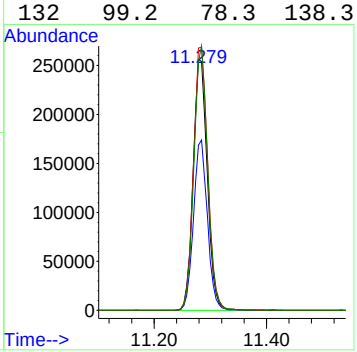




#62
trichloroethene
Concen: 252.15 ug/L
RT: 11.279 min Scan# 1585
Delta R.T. -0.004 min
Lab File: n266757.d
Acq: 18 Dec 2017 1:45 pm

Tgt Ion: 95 Resp: 448331

Ion	Ratio	Lower	Upper
95	100		
97	65.8	31.3	91.3
130	104.5	84.0	144.0
132	99.2	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266758.d
Acq On : 18 Dec 2017 2:24 pm
Operator : CHELSEAS
Sample : jc56966-15 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,10
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:55:44 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

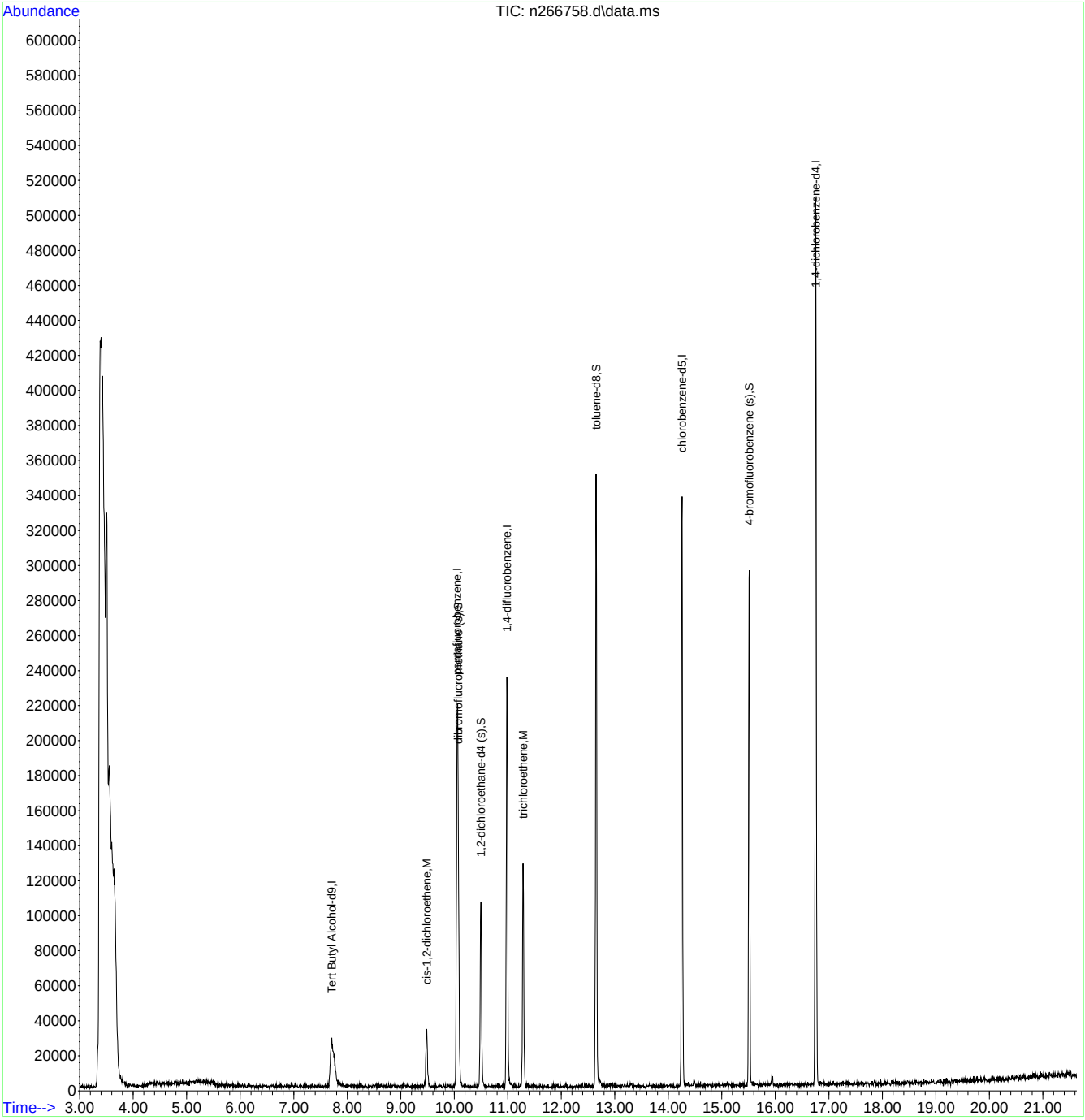
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.709	65	68023	300.00	ug/L	0.01
4) pentafluorobenzene	10.052	168	130740	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.983	114	175500	30.00	ug/L	0.00
74) chlorobenzene-d5	14.257	117	172293	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.757	152	120853	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.073	113	68254	33.58	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.93%			
54) 1,2-dichloroethane-d4 (s)	10.496	65	74168	34.36	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 114.53%			
75) toluene-d8	12.651	98	211383	28.13	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.77%			
97) 4-bromofluorobenzene (s)	15.512	95	85534	30.56	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.87%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.487	96	15171	6.94	ug/L	94
62) trichloroethene	11.286	95	36747	22.00	ug/L	94

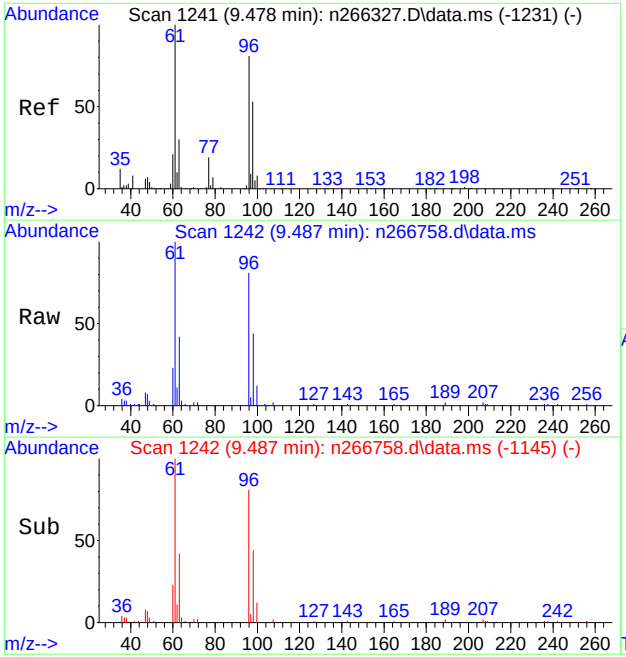
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266758.d
Acq On : 18 Dec 2017 2:24 pm
Operator : CHELSEAS
Sample : jc56966-15 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,10
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:55:44 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

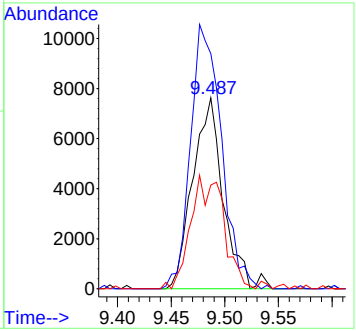


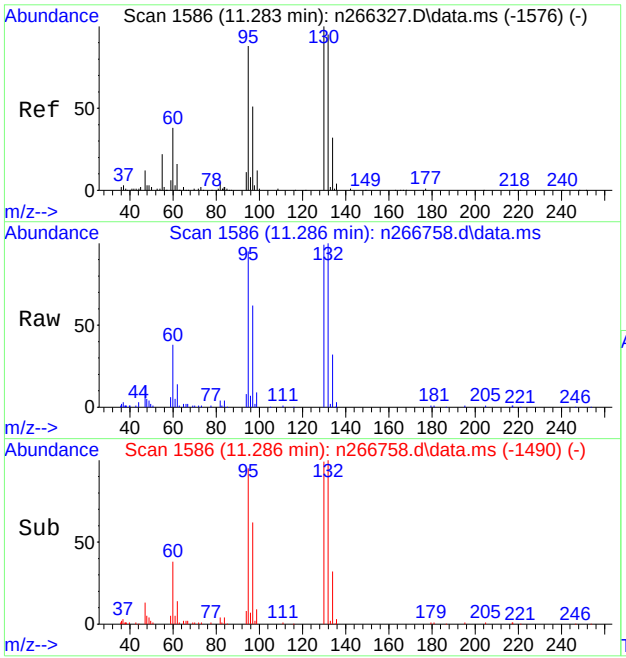


#39
cis-1,2-dichloroethene
Concen: 6.94 ug/L
RT: 9.487 min Scan# 1242
Delta R.T. 0.009 min
Lab File: n266758.d
Acq: 18 Dec 2017 2:24 pm

Tgt Ion: 96 Resp: 15171

Ion	Ratio	Lower	Upper
96	100		
61	123.2	94.2	154.2
98	54.3	35.9	95.9

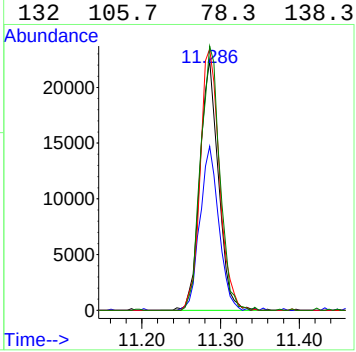




#62
trichloroethene
Concen: 22.00 ug/L
RT: 11.286 min Scan# 1586
Delta R.T. 0.003 min
Lab File: n266758.d
Acq: 18 Dec 2017 2:24 pm

Tgt Ion: 95 Resp: 36747

Ion	Ratio	Lower	Upper
95	100		
97	65.5	31.3	91.3
130	104.3	84.0	144.0
132	105.7	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266679.d
Acq On : 14 Dec 2017 11:04 pm
Operator : CHELSEAS
Sample : jc56966-16 Inst : GCMSN
Misc : MS22980,VN11237,5,,,,1
ALS Vial : 29 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 02:30:58 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

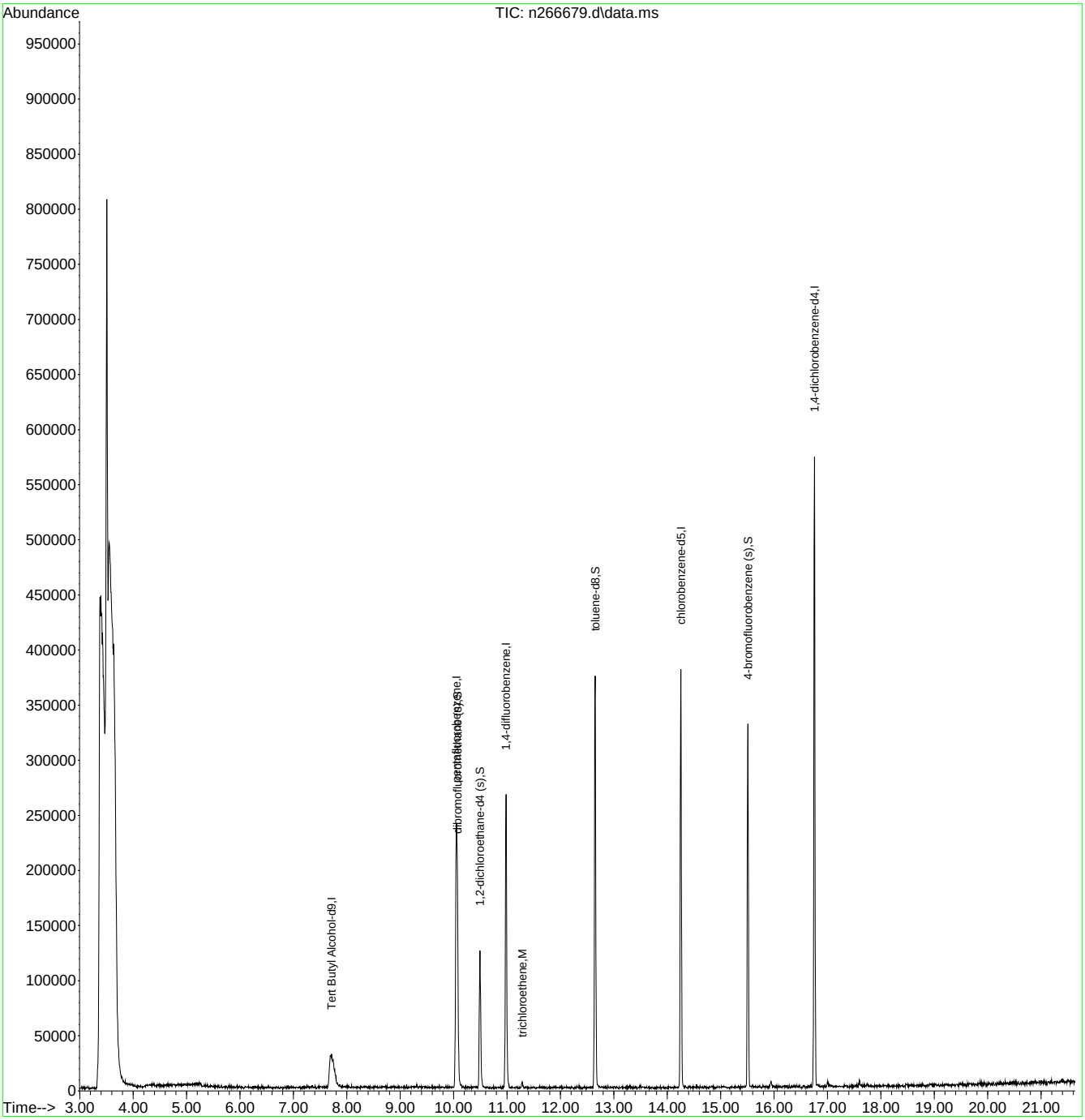
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.717	65	91347	300.00	ug/L	0.02
4) pentafluorobenzene	10.049	168	143163	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	198331	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	186694	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	134006	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.070	113	76508	34.38	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 114.60%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	85991	35.25	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 117.50%			
75) toluene-d8	12.649	98	230012	28.24	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.13%			
97) 4-bromofluorobenzene (s)	15.509	95	91188	29.38	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.93%			
Target Compounds						Qvalue
62) trichloroethene	11.284	95	1385	0.73	ug/L	73

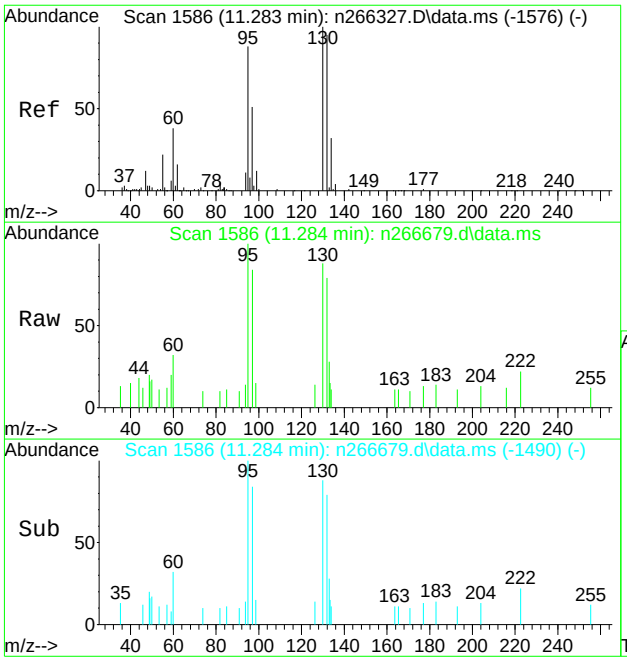
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266679.d
Acq On : 14 Dec 2017 11:04 pm
Operator : CHELSEAS
Sample : jc56966-16 Inst : GCMSN
Misc : MS22980,VN11237,5,,,,1
ALS Vial : 29 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 02:30:58 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

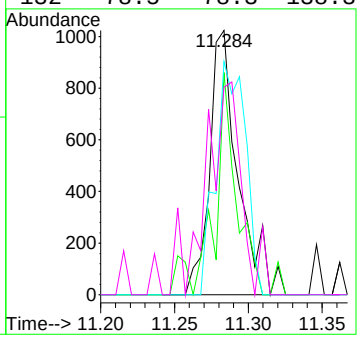




#62
trichloroethene
Concen: 0.73 ug/L
RT: 11.284 min Scan# 1586
Delta R.T. 0.001 min
Lab File: n266679.d
Acq: 14 Dec 2017 11:04 pm

Tgt Ion: 95 Resp: 1385

Ion	Ratio	Lower	Upper
95	100		
97	84.1	31.3	91.3
130	88.2	84.0	144.0
132	78.5	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266753.d
Acq On : 18 Dec 2017 11:47 am
Operator : CHELSEAS
Sample : jc56966-17 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:50:37 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

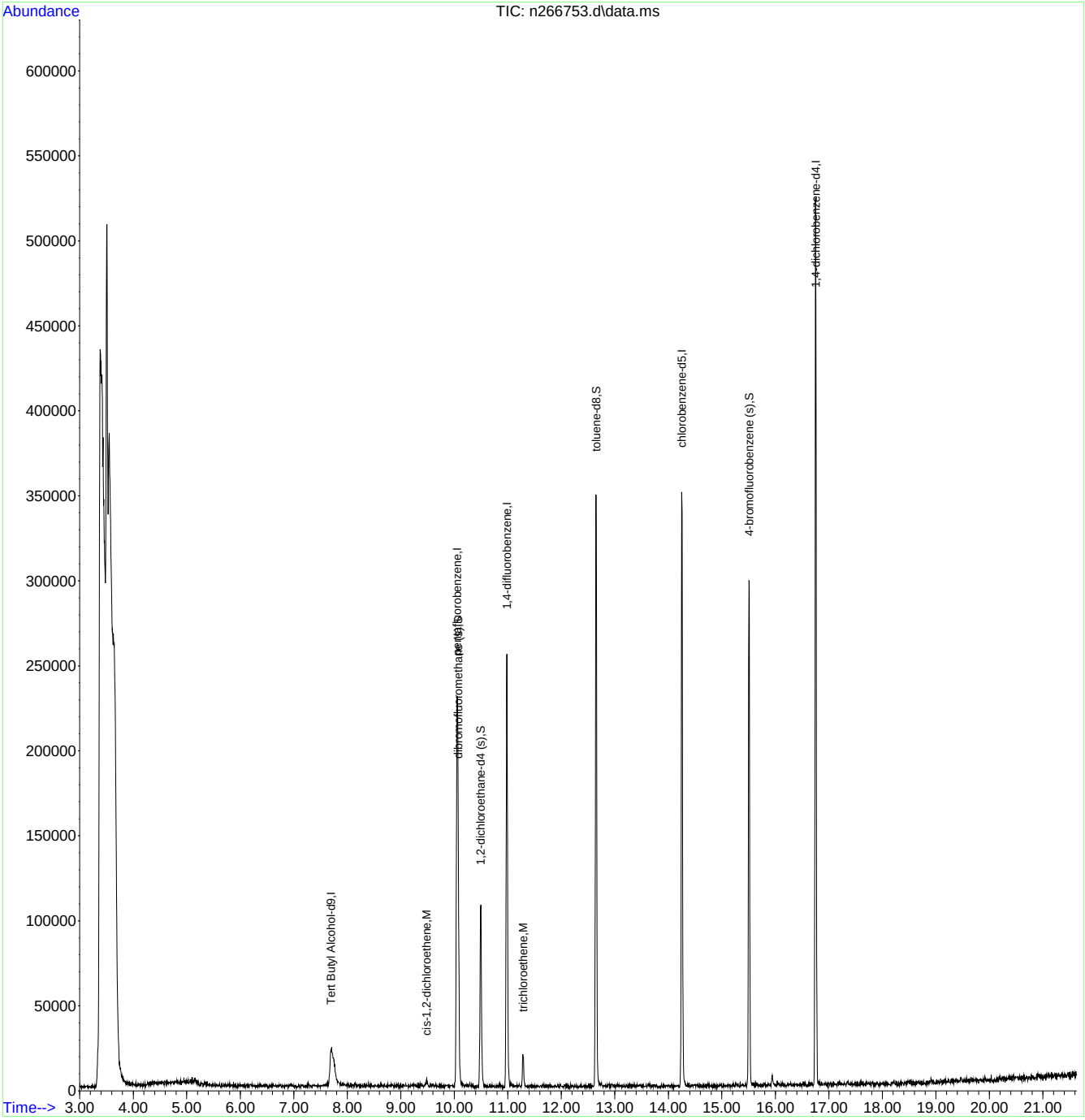
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.693	65	61414	300.00	ug/L	0.00
4) pentafluorobenzene	10.052	168	136633	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.983	114	186484	30.00	ug/L	0.00
74) chlorobenzene-d5	14.251	117	178599	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.757	152	125909	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.073	113	69415	32.68	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.93%			
54) 1,2-dichloroethane-d4 (s)	10.491	65	75940	33.11	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 110.37%			
75) toluene-d8	12.651	98	218668	28.07	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.57%			
97) 4-bromofluorobenzene (s)	15.507	95	90390	31.00	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.33%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.482	96	1655	0.72	ug/L #	37
62) trichloroethene	11.286	95	5816	3.28	ug/L	89

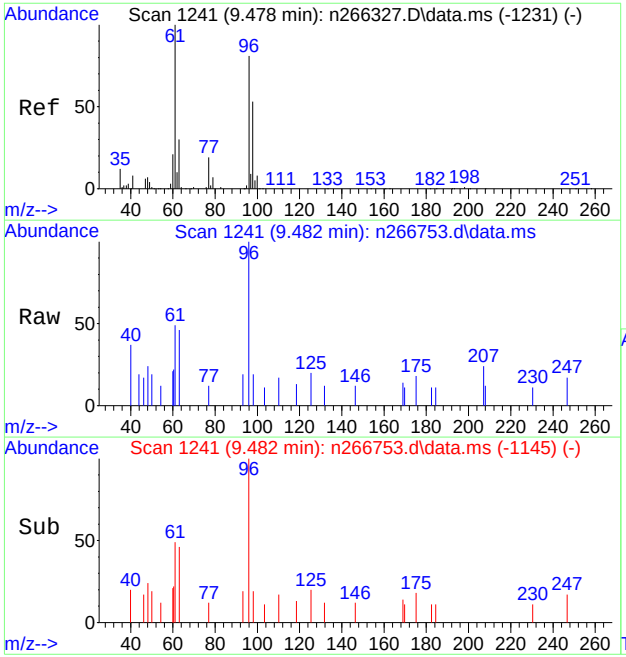
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266753.d
Acq On : 18 Dec 2017 11:47 am
Operator : CHELSEAS
Sample : jc56966-17 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:50:37 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

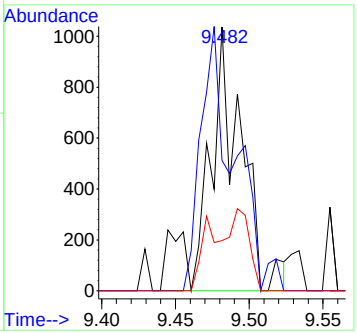


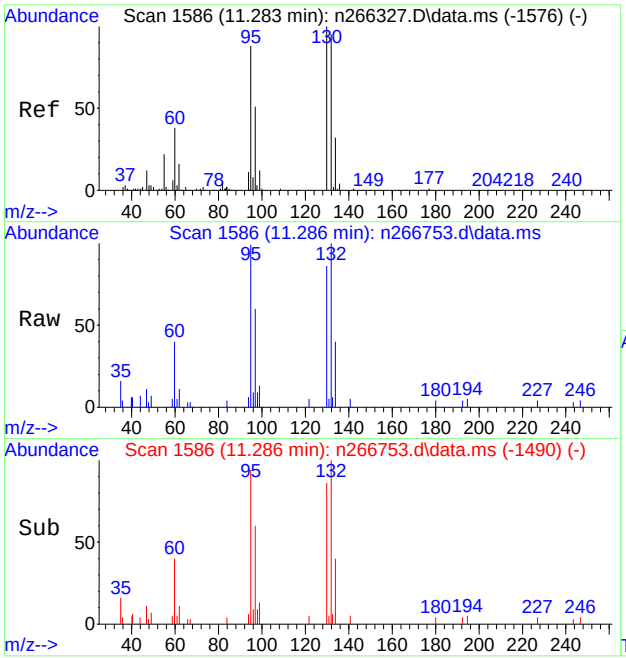


#39
cis-1,2-dichloroethene
Concen: 0.72 ug/L
RT: 9.482 min Scan# 1241
Delta R.T. 0.003 min
Lab File: n266753.d
Acq: 18 Dec 2017 11:47 am

Tgt Ion: 96 Resp: 1655

Ion	Ratio	Lower	Upper
96	100		
61	49.4	94.2	154.2#
98	19.1	35.9	95.9#

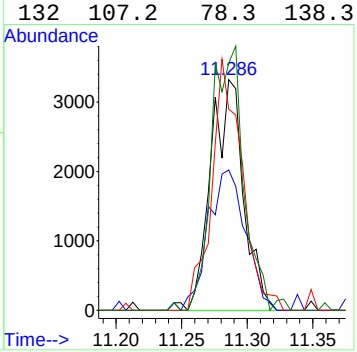




#62
trichloroethene
Concen: 3.28 ug/L
RT: 11.286 min Scan# 1586
Delta R.T. 0.003 min
Lab File: n266753.d
Acq: 18 Dec 2017 11:47 am

Tgt Ion: 95 Resp: 5816

Ion	Ratio	Lower	Upper
95	100		
97	60.9	31.3	91.3
130	87.2	84.0	144.0
132	107.2	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266680.d
Acq On : 14 Dec 2017 11:33 pm
Operator : CHELSEAS
Sample : jc56966-18 Inst : GCMSN
Misc : MS22980,VN11237,5,,,,1
ALS Vial : 30 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 02:32:24 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

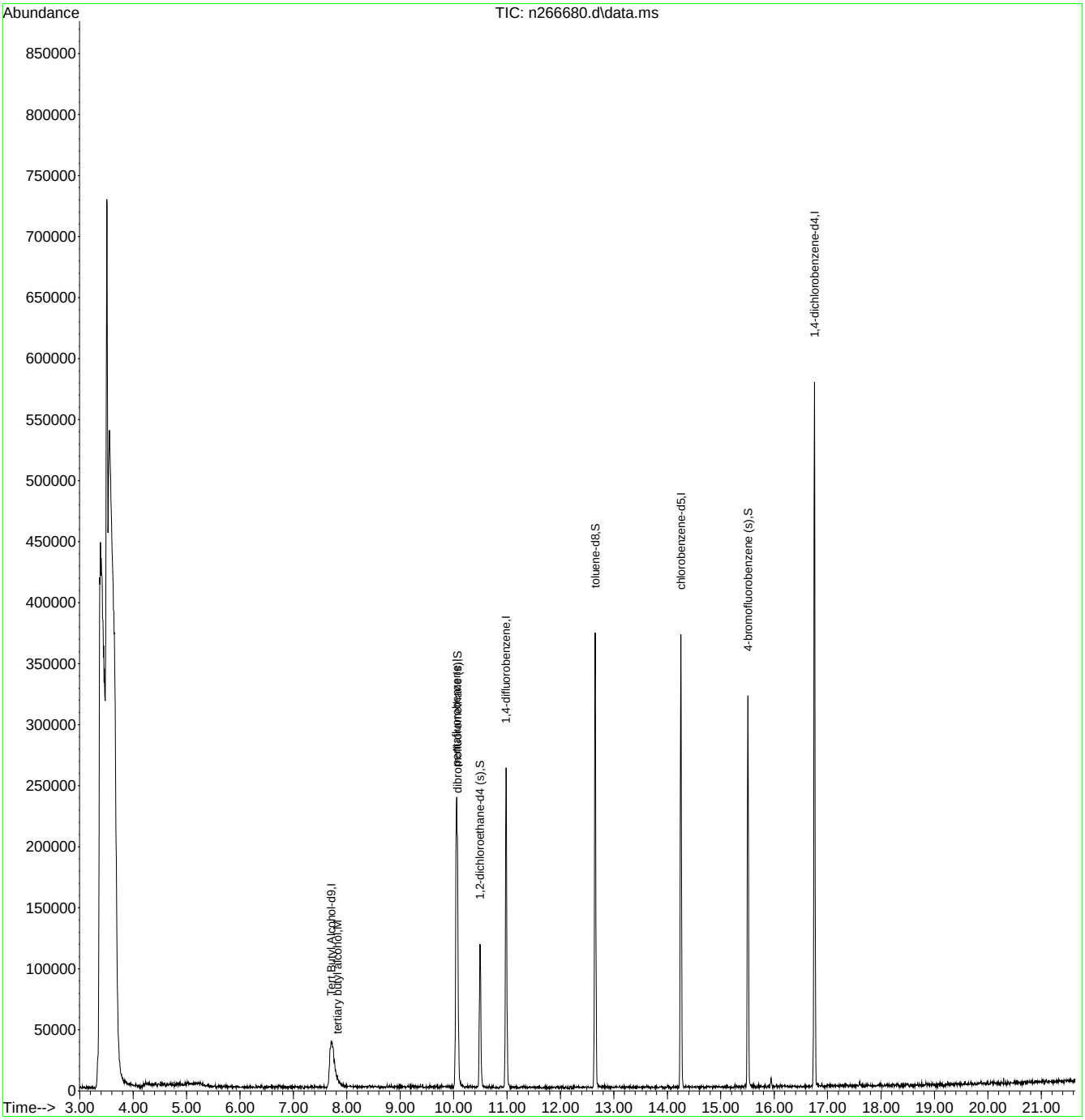
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.705	65	114095	300.00	ug/L	0.01
4) pentafluorobenzene	10.048	168	143129	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.979	114	193562	30.00	ug/L	0.00
74) chlorobenzene-d5	14.253	117	184143	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.753	152	137934	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.069	113	75270	33.83	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 112.77%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	85925	36.09	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 120.30%			
75) toluene-d8	12.648	98	224632	27.97	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.23%			
97) 4-bromofluorobenzene (s)	15.509	95	92721	29.02	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.73%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.826	59	6095	15.77	ug/L	91

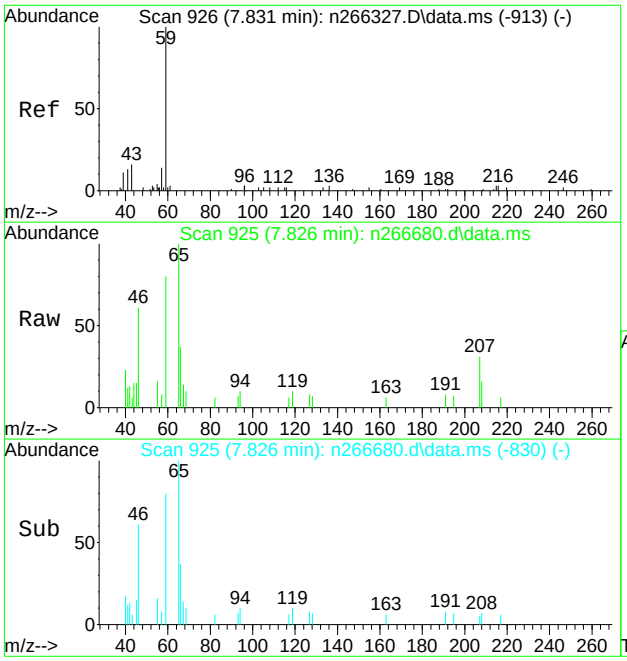
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266680.d
Acq On : 14 Dec 2017 11:33 pm
Operator : CHELSEAS
Sample : jc56966-18 Inst : GCMSN
Misc : MS22980,VN11237,5,,,,1
ALS Vial : 30 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 02:32:24 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

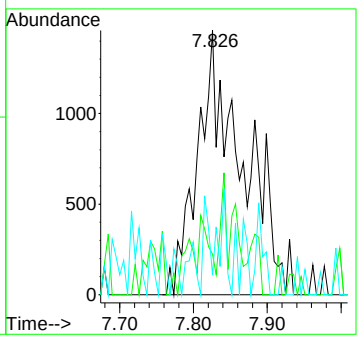




#2
tertiary butyl alcohol
Concen: 15.77 ug/L
RT: 7.826 min Scan# 925
Delta R.T. -0.005 min
Lab File: n266680.d
Acq: 14 Dec 2017 11:33 pm

Tgt Ion: 59 Resp: 6095

Ion	Ratio	Lower	Upper
59	100		
41	15.4	0.0	46.6
43	7.4	0.0	44.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266720.d
Acq On : 15 Dec 2017 7:49 pm
Operator : CHELSEAS
Sample : jc56966-19 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 26 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:28:24 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

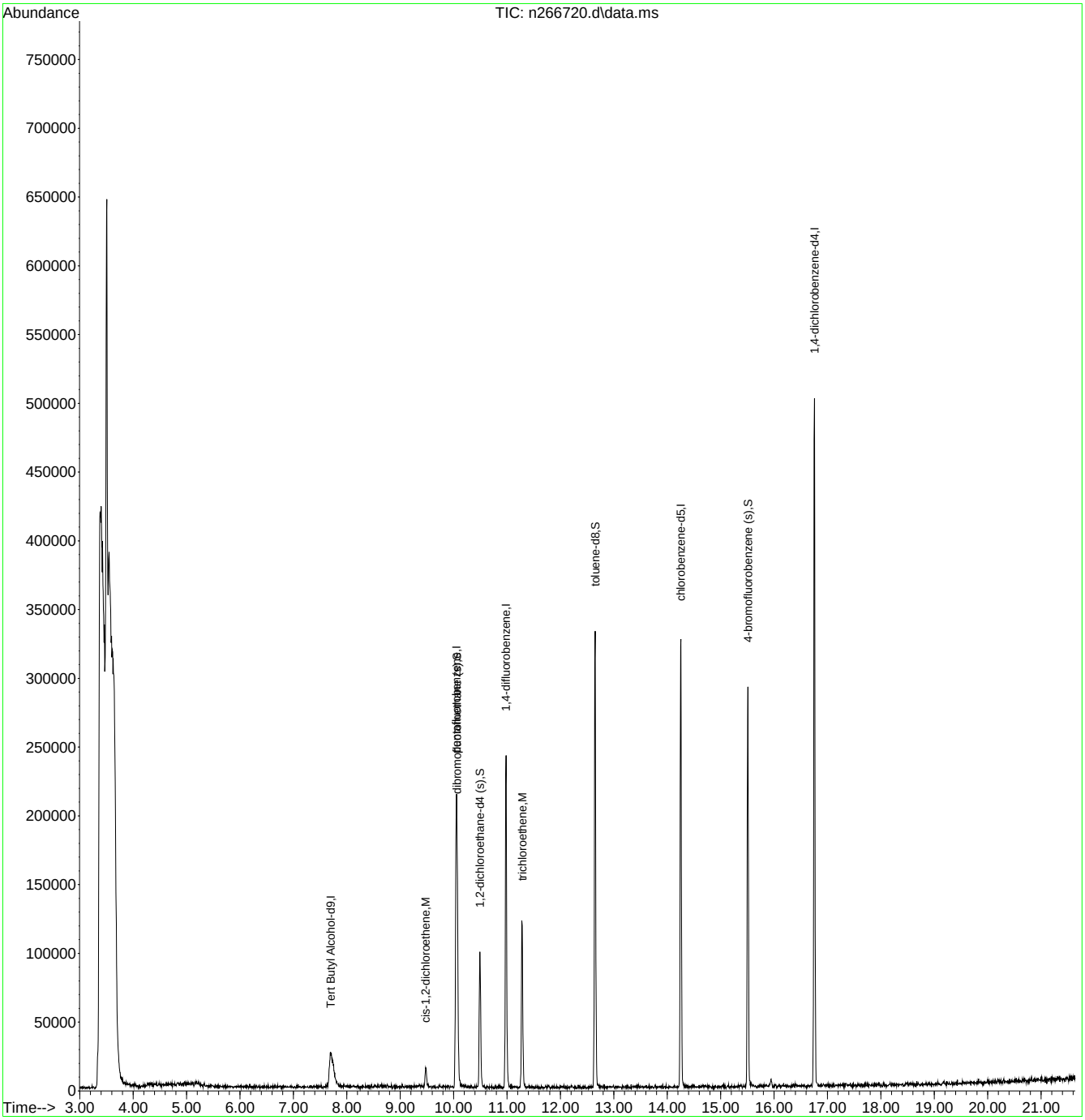
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.696	65	69200	300.00	ug/L	0.00
4) pentafluorobenzene	10.050	168	126172	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	170980	30.00	ug/L	0.00
74) chlorobenzene-d5	14.249	117	164409	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	121999	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.065	113	63571	32.41	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.03%			
54) 1,2-dichloroethane-d4 (s)	10.489	65	70235	33.40	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 111.33%			
75) toluene-d8	12.649	98	199761	27.85	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.83%			
97) 4-bromofluorobenzene (s)	15.510	95	83435	29.53	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.43%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.474	96	7350	3.49	ug/L	76
62) trichloroethene	11.284	95	37288	22.91	ug/L	92

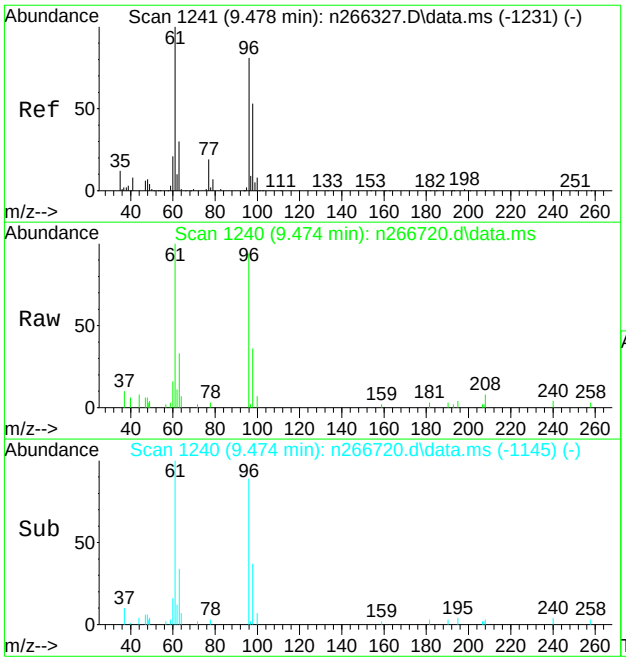
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266720.d
Acq On : 15 Dec 2017 7:49 pm
Operator : CHELSEAS
Sample : jc56966-19 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 26 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:28:24 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

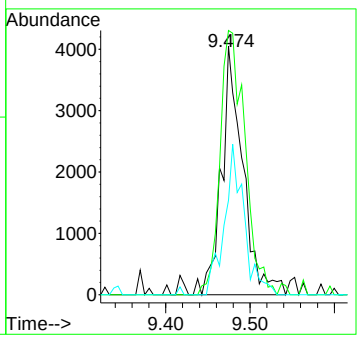


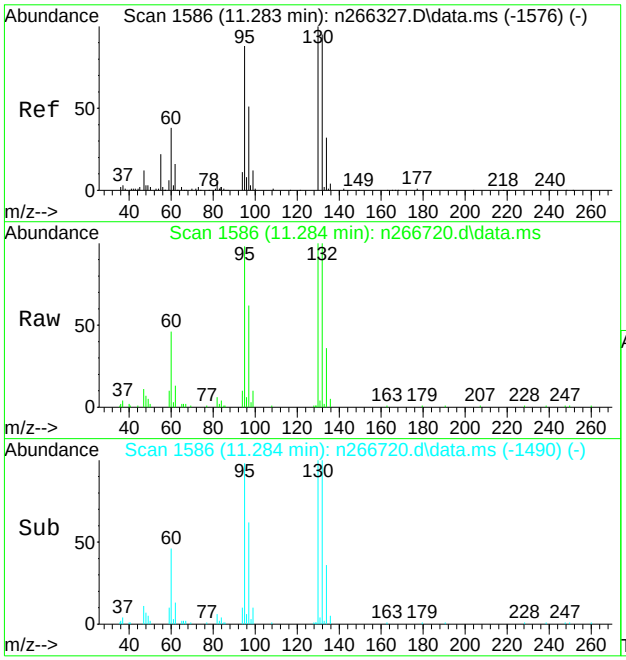


#39
cis-1,2-dichloroethene
Concen: 3.49 ug/L
RT: 9.474 min Scan# 1240
Delta R.T. -0.004 min
Lab File: n266720.d
Acq: 15 Dec 2017 7:49 pm

Tgt Ion: 96 Resp: 7350

Ion	Ratio	Lower	Upper
96	100		
61	103.7	94.2	154.2
98	37.0	35.9	95.9

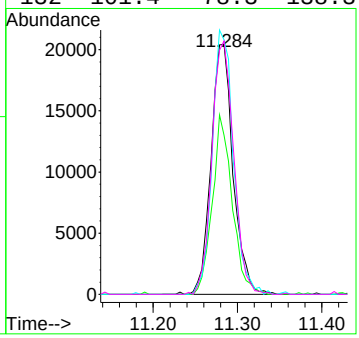




#62
trichloroethene
Concen: 22.91 ug/L
RT: 11.284 min Scan# 1586
Delta R.T. 0.001 min
Lab File: n266720.d
Acq: 15 Dec 2017 7:49 pm

Tgt Ion: 95 Resp: 37288

Ion	Ratio	Lower	Upper
95	100		
97	63.6	31.3	91.3
130	101.8	84.0	144.0
132	101.4	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266721.d
Acq On : 15 Dec 2017 8:18 pm
Operator : CHELSEAS
Sample : jc56966-20 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 27 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:29:16 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.691	65	72507	300.00	ug/L	0.00
4) pentafluorobenzene	10.050	168	125342	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	174460	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	171534	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	125071	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.071	113	67600	34.69	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 115.63%			
54) 1,2-dichloroethane-d4 (s)	10.490	65	75444	35.16	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 117.20%			
75) toluene-d8	12.650	98	201470	26.93	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 89.77%			
97) 4-bromofluorobenzene (s)	15.505	95	87069	30.06	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.20%			
Target Compounds						Qvalue

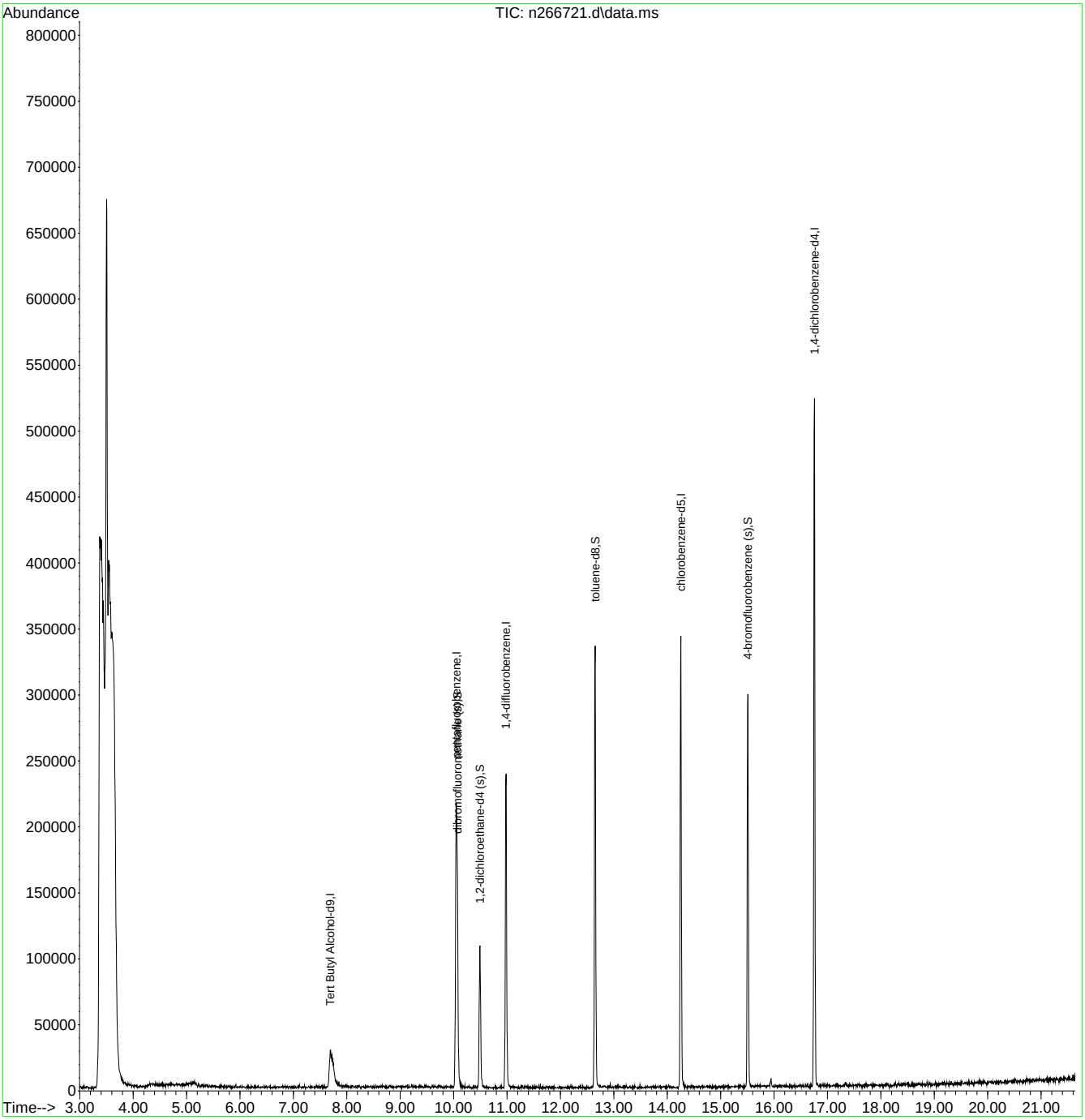
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.1.21
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266721.d
Acq On : 15 Dec 2017 8:18 pm
Operator : CHELSEAS
Sample : jc56966-20 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 27 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:29:16 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266722.d
Acq On : 15 Dec 2017 8:47 pm
Operator : CHELSEAS
Sample : jc56966-21 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 28 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:29:55 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

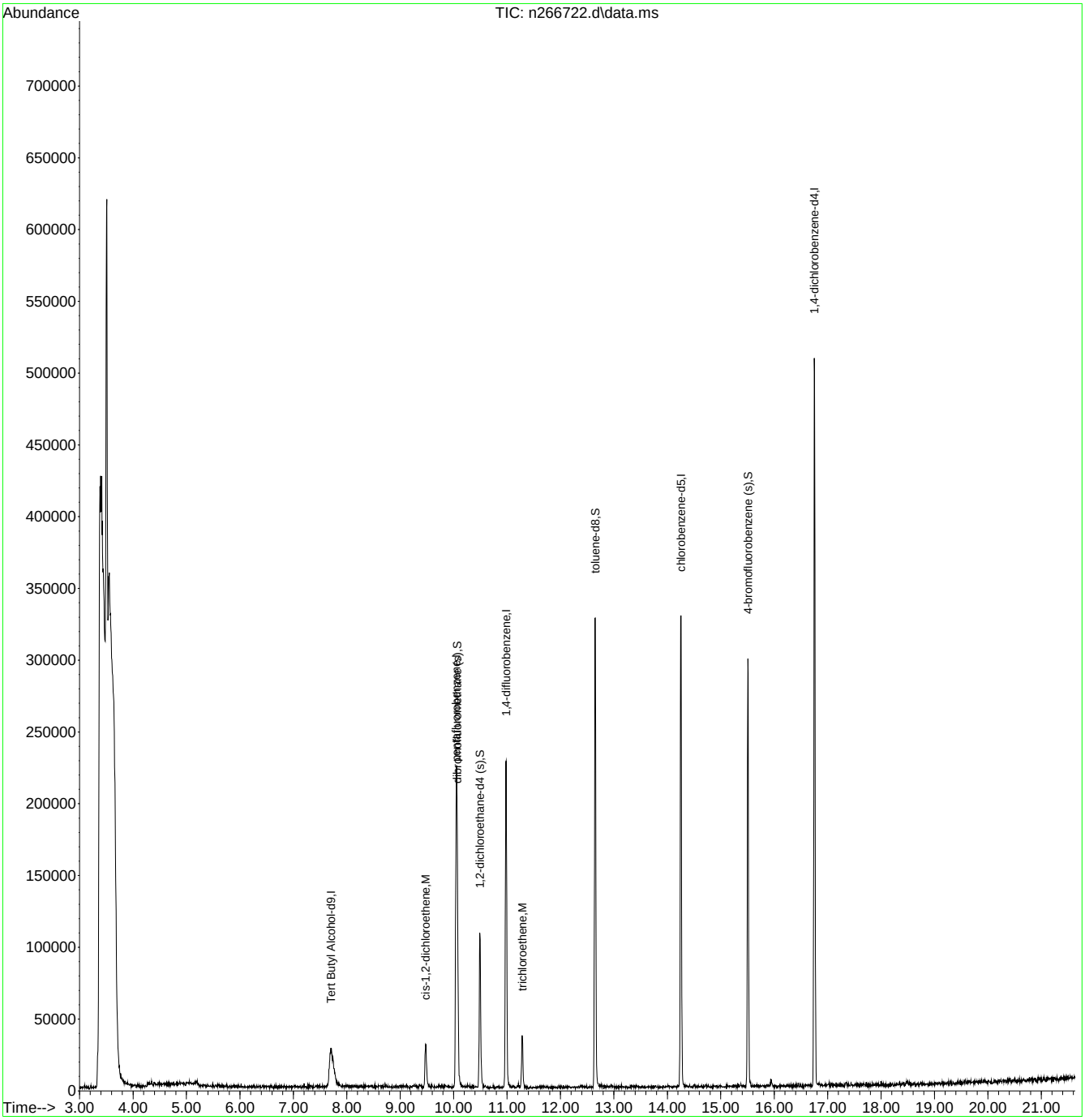
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.703	65	67293	300.00	ug/L	0.00
4) pentafluorobenzene	10.046	168	126336	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.982	114	176760	30.00	ug/L	0.00
74) chlorobenzene-d5	14.257	117	169134	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.751	152	122478	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.067	113	66288	33.75	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 112.50%			
54) 1,2-dichloroethane-d4 (s)	10.491	65	72790	33.48	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 111.60%			
75) toluene-d8	12.651	98	204903	27.77	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.57%			
97) 4-bromofluorobenzene (s)	15.507	95	84116	29.65	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.83%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.476	96	14959	7.09	ug/L	92
62) trichloroethene	11.286	95	10553	6.27	ug/L	93

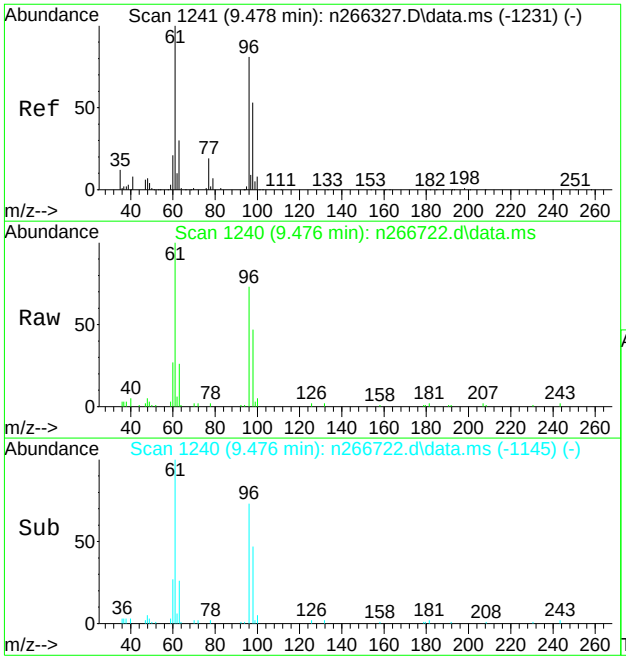
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266722.d
Acq On : 15 Dec 2017 8:47 pm
Operator : CHELSEAS
Sample : jc56966-21 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 28 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:29:55 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

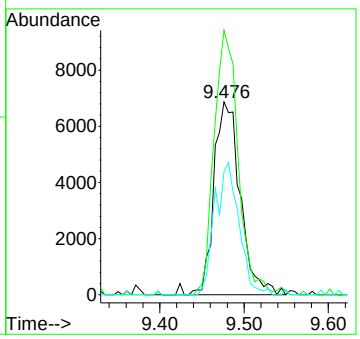


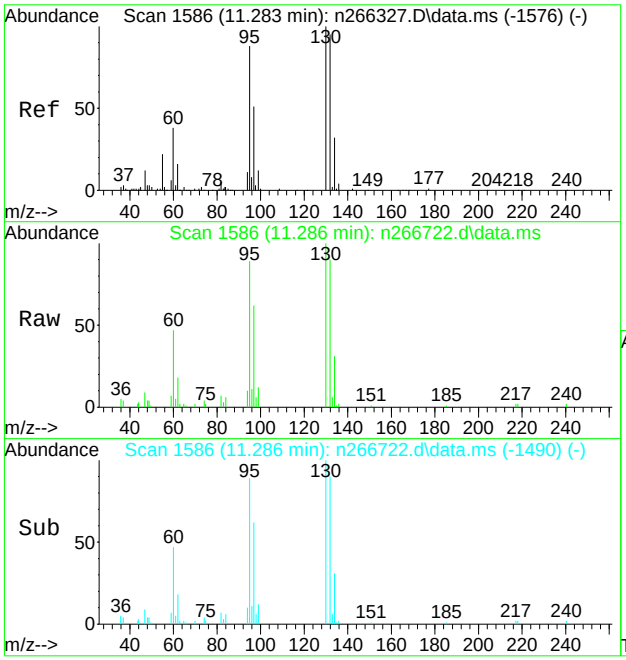


#39
cis-1,2-dichloroethene
Concen: 7.09 ug/L
RT: 9.476 min Scan# 1240
Delta R.T. -0.002 min
Lab File: n266722.d
Acq: 15 Dec 2017 8:47 pm

Tgt Ion: 96 Resp: 14959

Ion	Ratio	Lower	Upper
96	100		
61	137.1	94.2	154.2
98	63.8	35.9	95.9

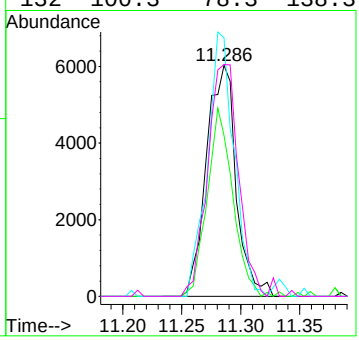




#62
trichloroethene
Concen: 6.27 ug/L
RT: 11.286 min Scan# 1586
Delta R.T. 0.003 min
Lab File: n266722.d
Acq: 15 Dec 2017 8:47 pm

Tgt Ion: 95 Resp: 10553

Ion	Ratio	Lower	Upper
95	100		
97	69.7	31.3	91.3
130	109.4	84.0	144.0
132	100.3	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266802.d
Acq On : 19 Dec 2017 1:34 pm
Operator : CHELSEAS
Sample : jc56966-22 Inst : GCMSN
Misc : MS22980,VN11243,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:45:48 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration

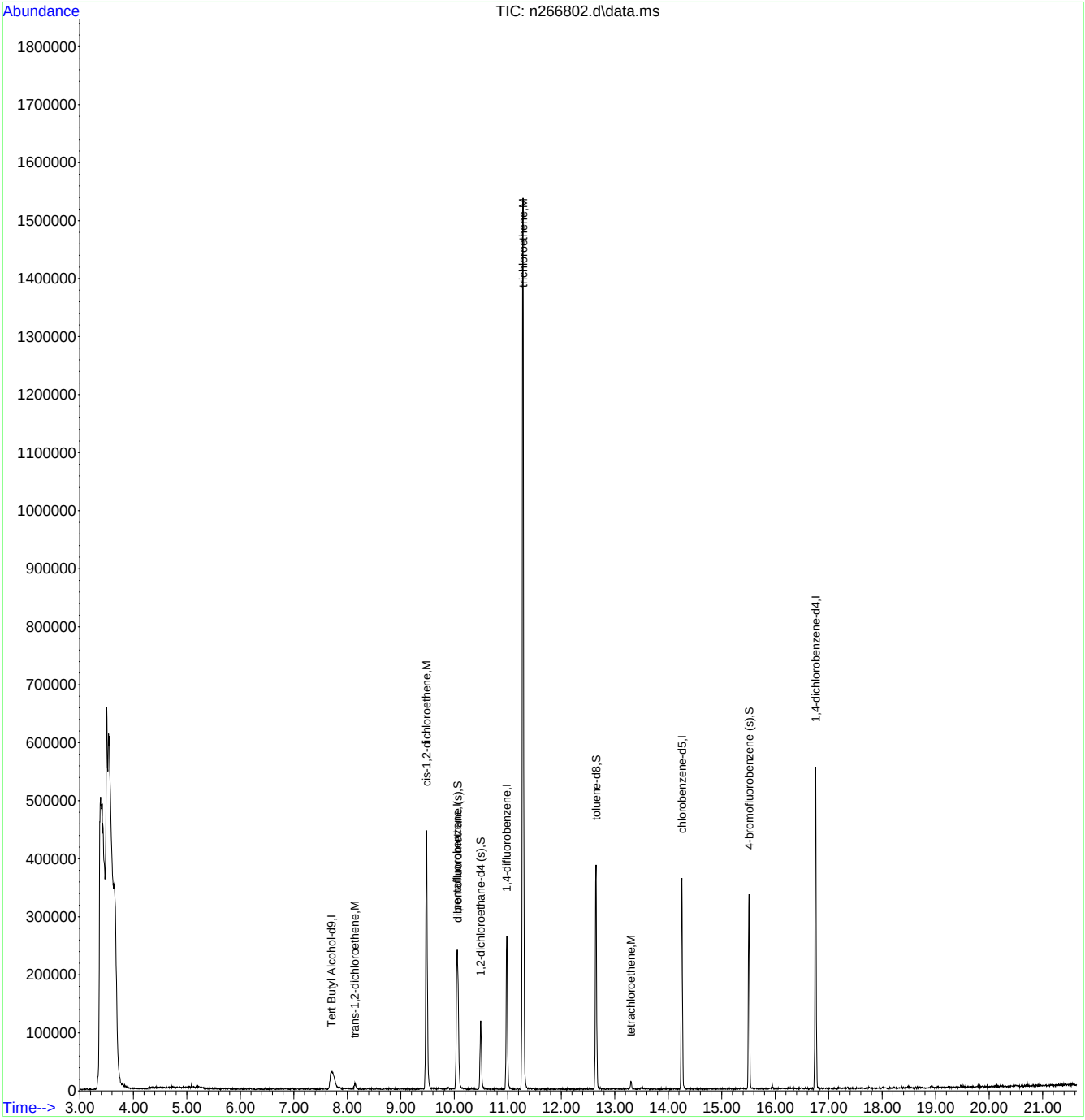
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.701	65	92534	300.00	ug/L	0.00
4) pentafluorobenzene	10.049	168	136608	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	193066	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	188060	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	129491	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.065	113	72059	33.93	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 113.10%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	80452	33.88	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 112.93%			
75) toluene-d8	12.649	98	232950	28.40	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.67%			
97) 4-bromofluorobenzene (s)	15.510	95	93723	31.25	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.17%			
Target Compounds						Qvalue
28) trans-1,2-dichloroethene	8.140	96	4530	2.15	ug/L	91
39) cis-1,2-dichloroethene	9.479	96	197319	86.43	ug/L	93
62) trichloroethene	11.284	95	480022	261.22	ug/L	91
80) tetrachloroethene	13.303	164	2807	1.43	ug/L	88

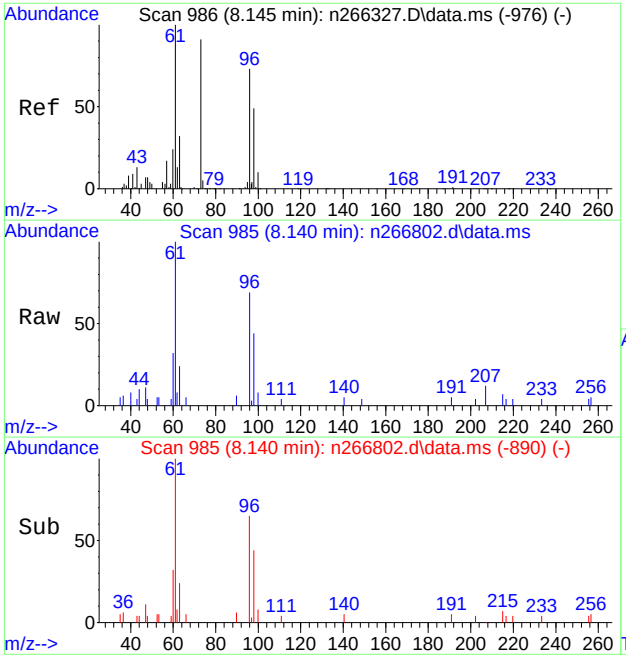
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266802.d
Acq On : 19 Dec 2017 1:34 pm
Operator : CHELSEAS
Sample : jc56966-22 Inst : GCMSN
Misc : MS22980,VN11243,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:45:48 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration

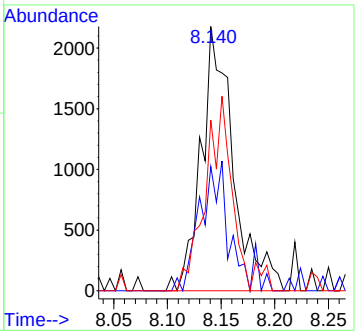


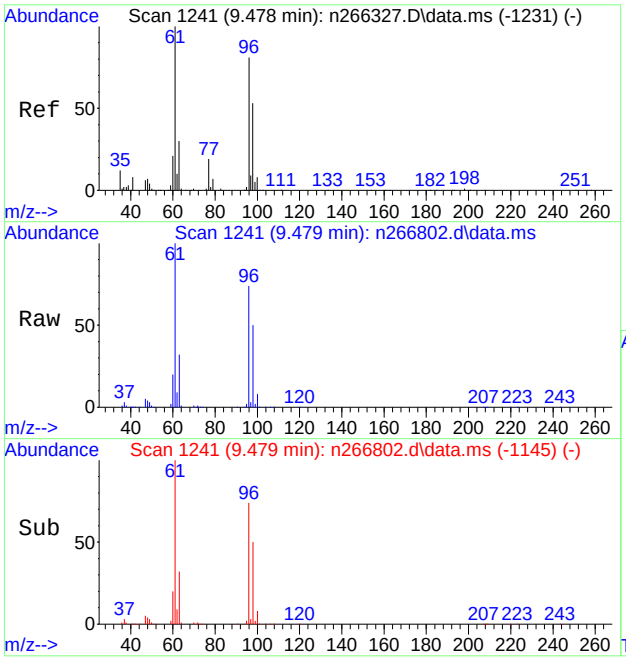


#28
trans-1,2-dichloroethene
Concen: 2.15 ug/L
RT: 8.140 min Scan# 985
Delta R.T. -0.004 min
Lab File: n266802.d
Acq: 19 Dec 2017 1:34 pm

Tgt Ion: 96 Resp: 4530

Ion	Ratio	Lower	Upper
96	100		
60	47.0	1.4	61.4
98	64.5	34.5	94.5

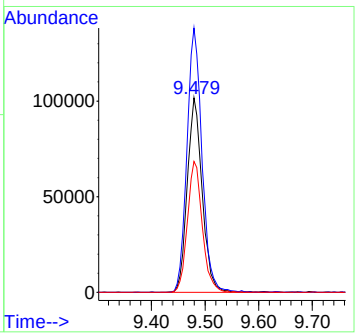


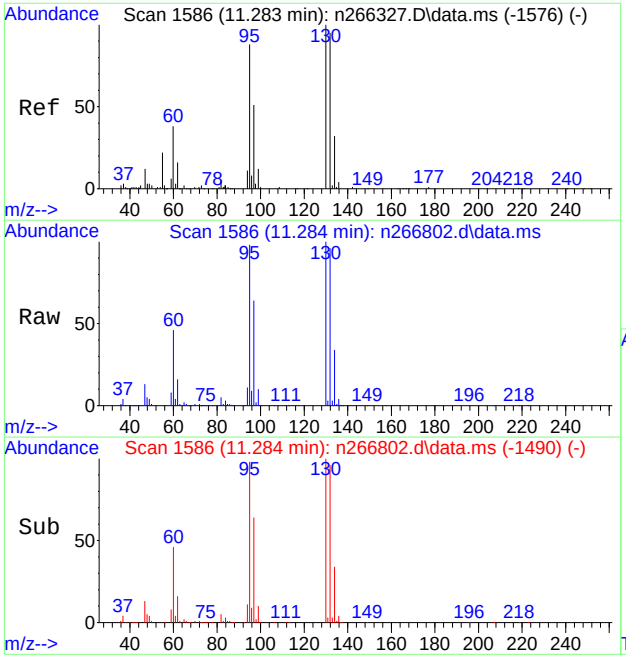


#39
cis-1,2-dichloroethene
Concen: 86.43 ug/L
RT: 9.479 min Scan# 1241
Delta R.T. 0.001 min
Lab File: n266802.d
Acq: 19 Dec 2017 1:34 pm

Tgt Ion: 96 Resp: 197319

Ion	Ratio	Lower	Upper
96	100		
61	135.8	94.2	154.2
98	67.3	35.9	95.9

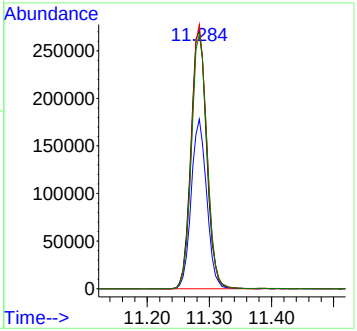


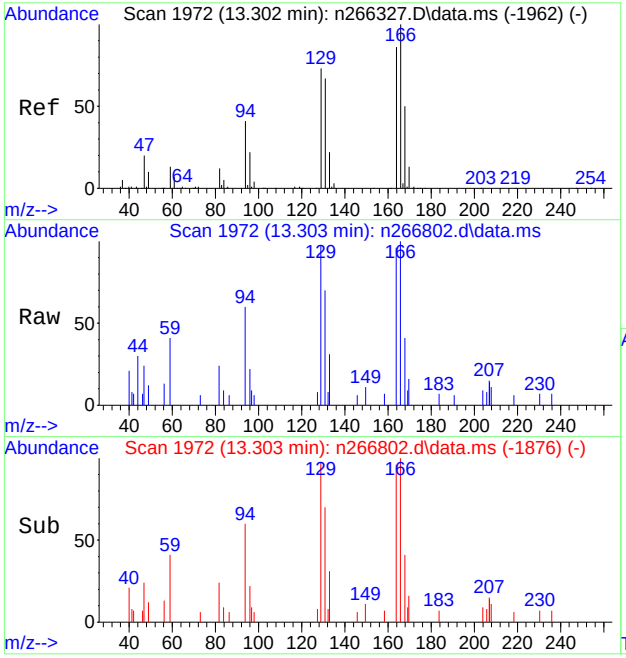


#62
trichloroethene
Concen: 261.22 ug/L
RT: 11.284 min Scan# 1586
Delta R.T. 0.001 min
Lab File: n266802.d
Acq: 19 Dec 2017 1:34 pm

Tgt Ion: 95 Resp: 480022

Ion	Ratio	Lower	Upper
95	100		
97	65.8	31.3	91.3
130	102.6	84.0	144.0
132	98.8	78.3	138.3

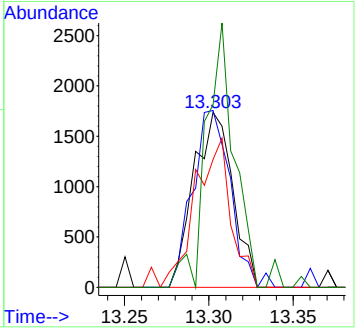




#80
tetrachloroethene
Concen: 1.43 ug/L
RT: 13.303 min Scan# 1972
Delta R.T. 0.001 min
Lab File: n266802.d
Acq: 19 Dec 2017 1:34 pm

Tgt Ion:164 Resp: 2807

Ion	Ratio	Lower	Upper
164	100		
129	101.2	54.6	114.6
131	73.1	48.3	108.3
166	104.4	86.8	146.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266803.d
Acq On : 19 Dec 2017 2:38 pm
Operator : CHELSEAS
Sample : jc56966-22 Inst : GCMSN
Misc : MS22980,VN11243,5,,,,10
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:48:43 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

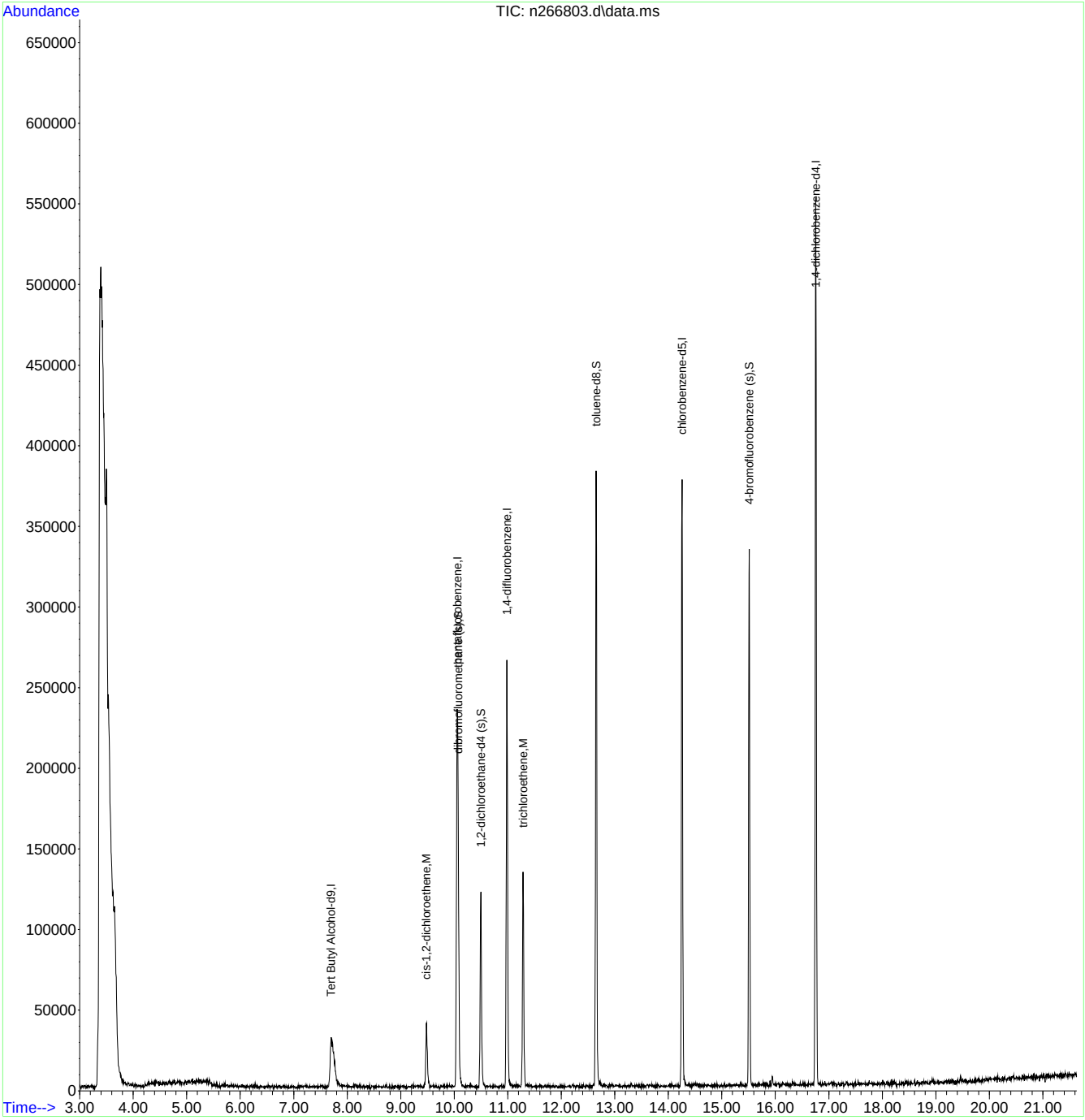
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.693	65	80585	300.00	ug/L	0.00
4) pentafluorobenzene	10.057	168	132829	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.983	114	193244	30.00	ug/L	0.00
74) chlorobenzene-d5	14.257	117	187950	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.757	152	126179	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.073	113	69947	33.87	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 112.90%			
54) 1,2-dichloroethane-d4 (s)	10.496	65	78783	33.15	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 110.50%			
75) toluene-d8	12.651	98	223849	27.30	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 91.00%			
97) 4-bromofluorobenzene (s)	15.512	95	95608	32.72	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.07%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.476	96	18237	8.22	ug/L	87
62) trichloroethene	11.286	95	40308	21.91	ug/L	89

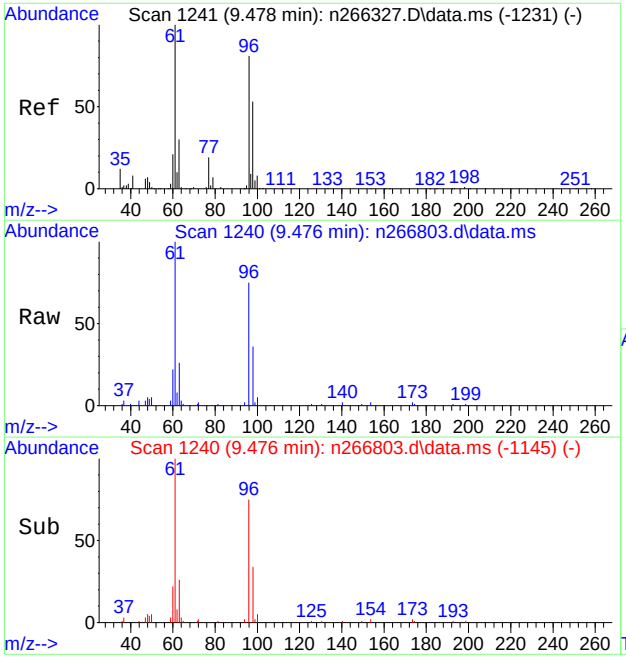
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266803.d
Acq On : 19 Dec 2017 2:38 pm
Operator : CHELSEAS
Sample : jc56966-22 Inst : GCMSN
Misc : MS22980,VN11243,5,,,,10
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:48:43 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

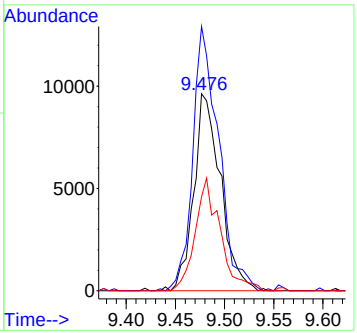


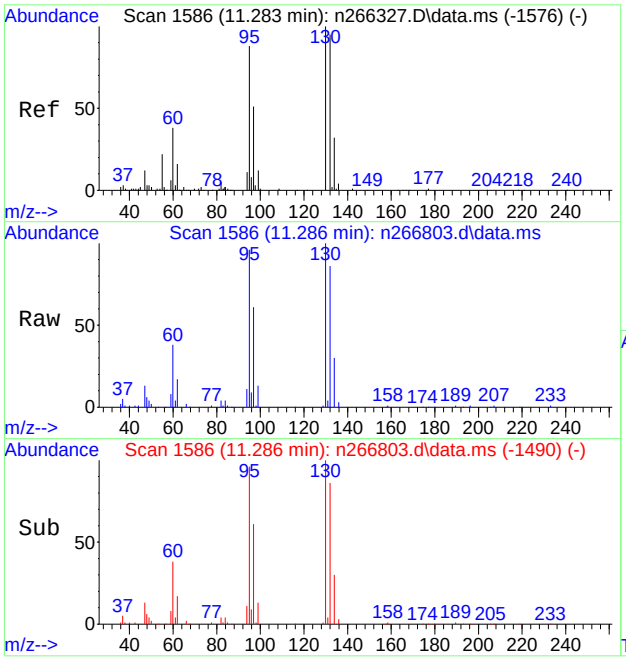


#39
cis-1,2-dichloroethene
Concen: 8.22 ug/L
RT: 9.476 min Scan# 1240
Delta R.T. -0.002 min
Lab File: n266803.d
Acq: 19 Dec 2017 2:38 pm

Tgt Ion: 96 Resp: 18237

Ion	Ratio	Lower	Upper
96	100		
61	133.2	94.2	154.2
98	47.7	35.9	95.9

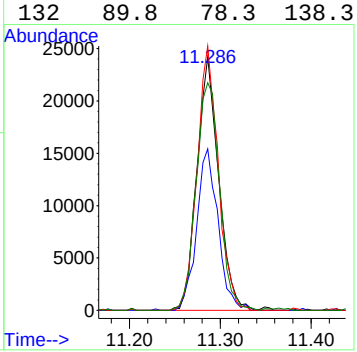




#62
trichloroethene
Concen: 21.91 ug/L
RT: 11.286 min Scan# 1586
Delta R.T. 0.003 min
Lab File: n266803.d
Acq: 19 Dec 2017 2:38 pm

Tgt Ion: 95 Resp: 40308

Ion	Ratio	Lower	Upper
95	100		
97	63.7	31.3	91.3
130	104.4	84.0	144.0
132	89.8	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266723.d
Acq On : 15 Dec 2017 9:17 pm
Operator : CHELSEAS
Sample : jc56966-23 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 29 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:30:50 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

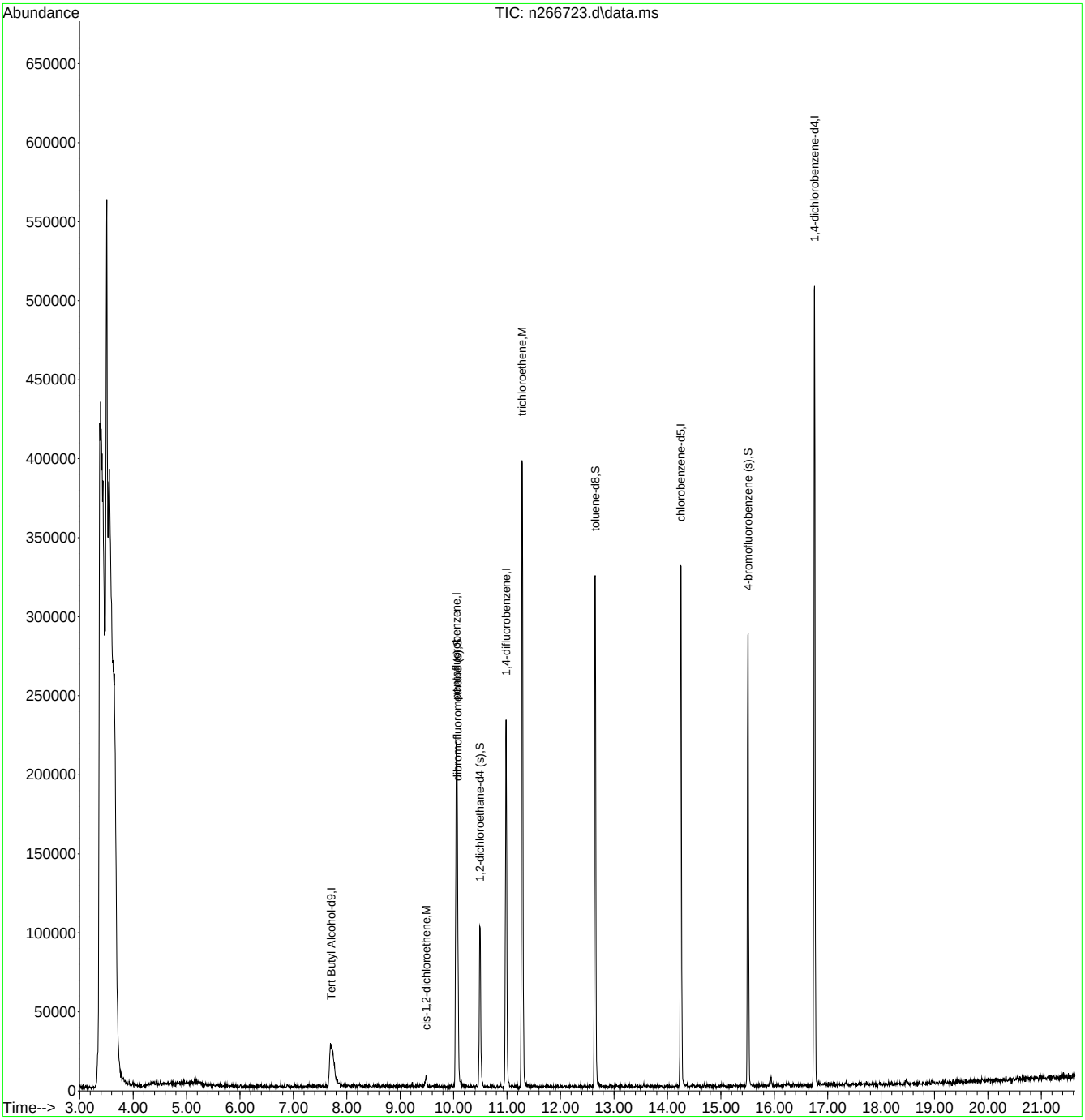
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.708	65	74039	300.00	ug/L	0.01
4) pentafluorobenzene	10.051	168	125864	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.982	114	172174	30.00	ug/L	0.00
74) chlorobenzene-d5	14.251	117	168187	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.756	152	122654	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.072	113	67144	34.32	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 114.40%			
54) 1,2-dichloroethane-d4 (s)	10.491	65	73130	34.54	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 115.13%			
75) toluene-d8	12.651	98	202085	27.55	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 91.83%			
97) 4-bromofluorobenzene (s)	15.506	95	84448	29.73	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.10%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.486	96	3660	1.74	ug/L	81
62) trichloroethene	11.280	95	123368	75.28	ug/L	92

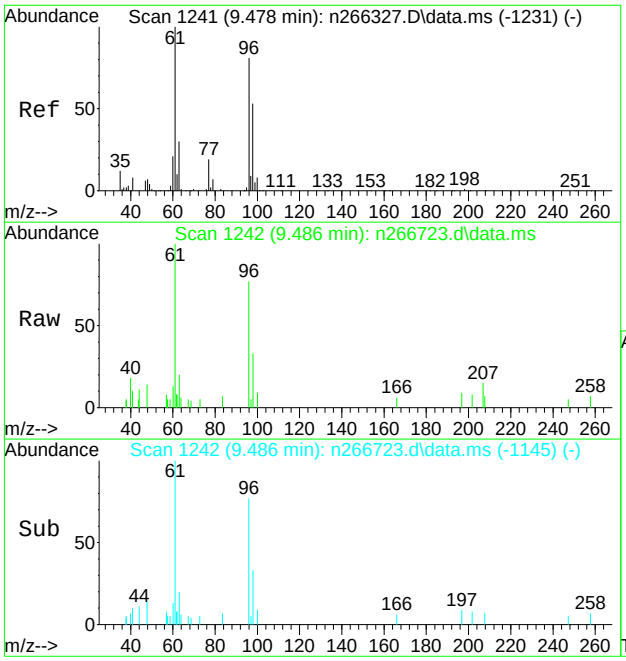
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266723.d
Acq On : 15 Dec 2017 9:17 pm
Operator : CHELSEAS
Sample : jc56966-23 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 29 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:30:50 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

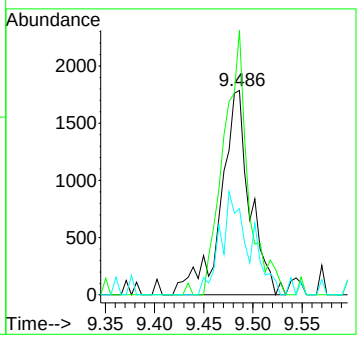


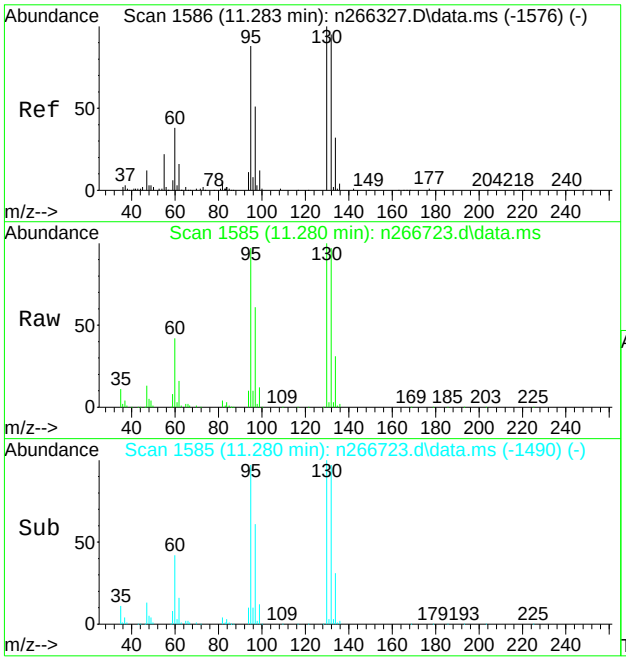


#39
cis-1,2-dichloroethene
Concen: 1.74 ug/L
RT: 9.486 min Scan# 1242
Delta R.T. 0.008 min
Lab File: n266723.d
Acq: 15 Dec 2017 9:17 pm

Tgt Ion: 96 Resp: 3660

Ion	Ratio	Lower	Upper
96	100		
61	140.0	94.2	154.2
98	42.1	35.9	95.9

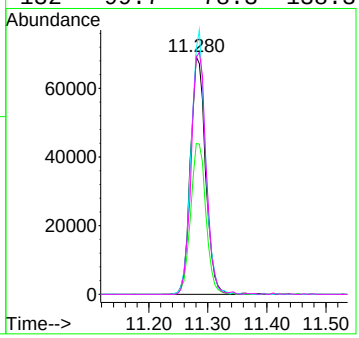




#62
trichloroethene
Concen: 75.28 ug/L
RT: 11.280 min Scan# 1585
Delta R.T. -0.003 min
Lab File: n266723.d
Acq: 15 Dec 2017 9:17 pm

Tgt Ion: 95 Resp: 123368

Ion	Ratio	Lower	Upper
95	100		
97	63.5	31.3	91.3
130	103.2	84.0	144.0
132	99.7	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266733.d
Acq On : 16 Dec 2017 2:10 am
Operator : CHELSEAS
Sample : jc56966-24 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 38 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:13:14 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

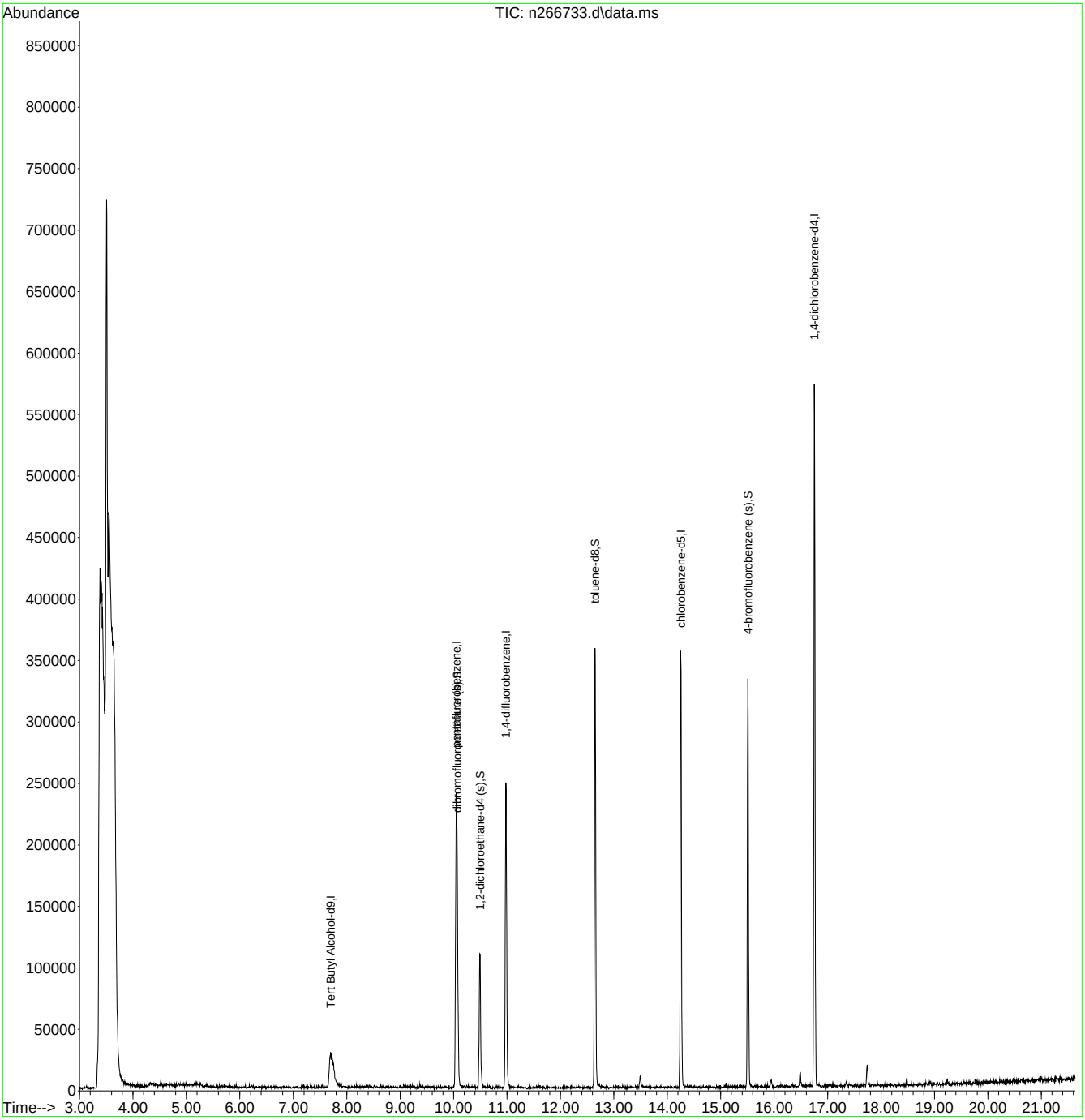
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.698	65	79176	300.00	ug/L	0.00
4) pentafluorobenzene	10.052	168	137211	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.978	114	188444	30.00	ug/L	0.00
74) chlorobenzene-d5	14.257	117	181850	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.752	152	139755	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.068	113	68196	31.97	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 106.57%			
54) 1,2-dichloroethane-d4 (s)	10.496	65	78218	33.75	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 112.50%			
75) toluene-d8	12.646	98	220328	27.78	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.60%			
97) 4-bromofluorobenzene (s)	15.507	95	96633	29.85	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.50%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266733.d
Acq On : 16 Dec 2017 2:10 am
Operator : CHELSEAS
Sample : jc56966-24 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 38 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:13:14 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



MN11221.M Tue Dec 19 04:29:29 2017 Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266734.d
Acq On : 16 Dec 2017 2:40 am
Operator : CHELSEAS
Sample : jc56966-25 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 39 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:15:13 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

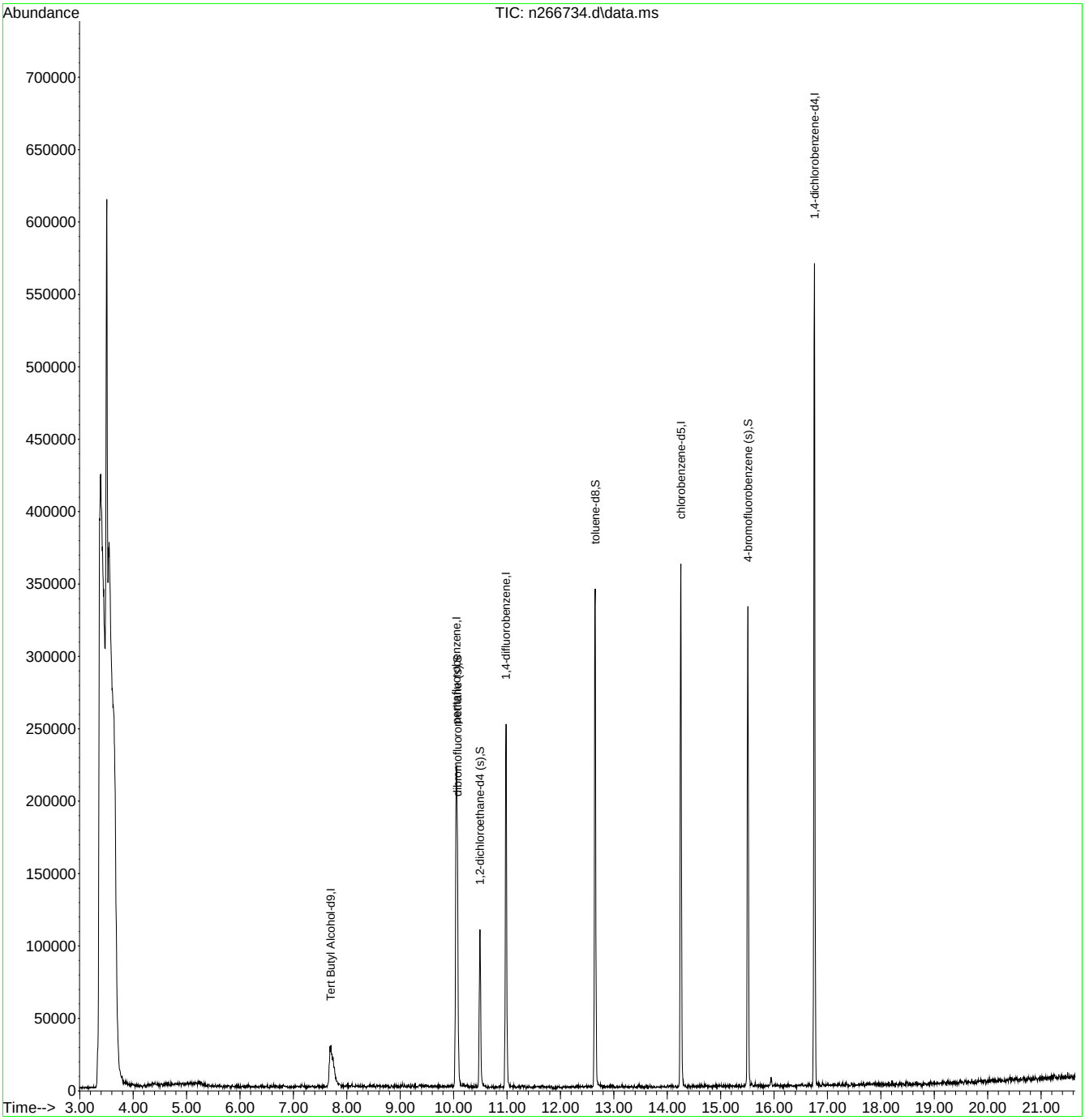
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.696	65	77984	300.00	ug/L	0.00
4) pentafluorobenzene	10.050	168	132336	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	183704	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	180953	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	133644	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.071	113	68707	33.40	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.33%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	74050	32.78	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 109.27%			
75) toluene-d8	12.649	98	215320	27.28	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 90.93%			
97) 4-bromofluorobenzene (s)	15.510	95	95745	30.93	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.10%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266734.d
Acq On : 16 Dec 2017 2:40 am
Operator : CHELSEAS
Sample : jc56966-25 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 39 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:15:13 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266754.d
Acq On : 18 Dec 2017 12:17 pm
Operator : CHELSEAS
Sample : jc56966-26 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:51:49 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

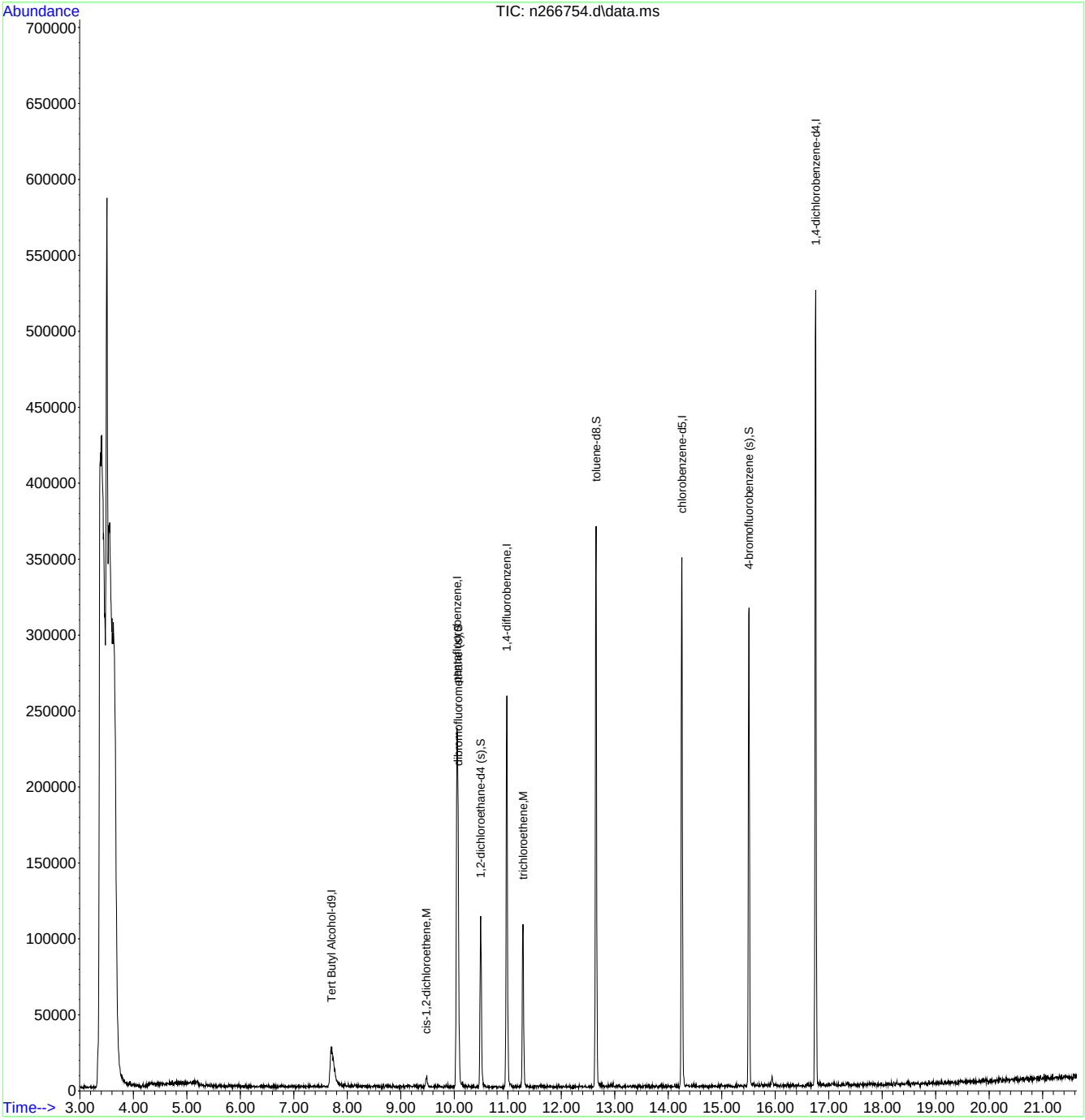
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.701	65	66732	300.00	ug/L	0.00
4) pentafluorobenzene	10.050	168	140268	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	190477	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	180751	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	127880	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.071	113	69283	31.77	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 105.90%			
54) 1,2-dichloroethane-d4 (s)	10.489	65	74232	31.69	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 105.63%			
75) toluene-d8	12.649	98	219463	27.83	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.77%			
97) 4-bromofluorobenzene (s)	15.505	95	90047	30.40	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.33%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.474	96	3792	1.62	ug/L	# 70
62) trichloroethene	11.284	95	33873	18.68	ug/L	90

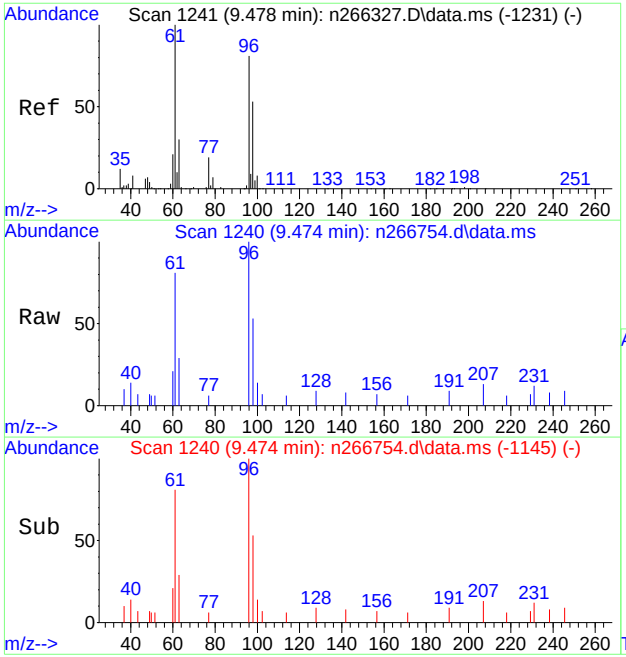
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266754.d
Acq On : 18 Dec 2017 12:17 pm
Operator : CHELSEAS
Sample : jc56966-26 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:51:49 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

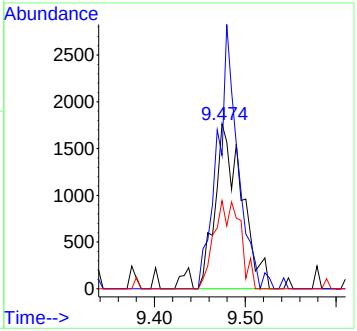


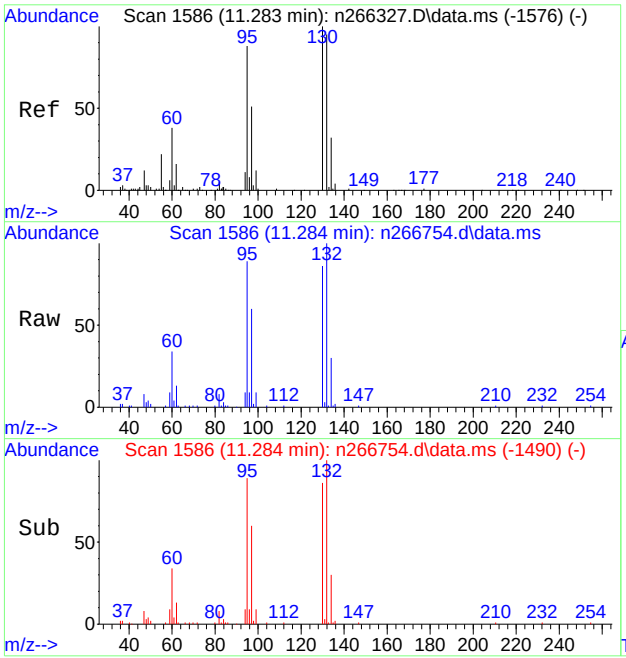


#39
cis-1,2-dichloroethene
Concen: 1.62 ug/L
RT: 9.474 min Scan# 1240
Delta R.T. -0.004 min
Lab File: n266754.d
Acq: 18 Dec 2017 12:17 pm

Tgt Ion: 96 Resp: 3792

Ion	Ratio	Lower	Upper
96	100		
61	81.1	94.2	154.2#
98	53.5	35.9	95.9

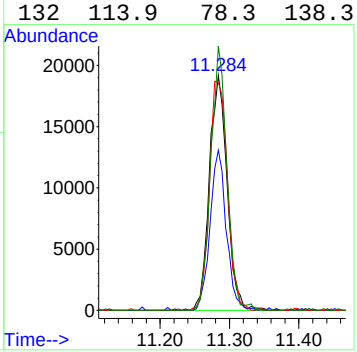




#62
trichloroethene
Concen: 18.68 ug/L
RT: 11.284 min Scan# 1586
Delta R.T. 0.001 min
Lab File: n266754.d
Acq: 18 Dec 2017 12:17 pm

Tgt Ion: 95 Resp: 33873

Ion	Ratio	Lower	Upper
95	100		
97	68.2	31.3	91.3
130	97.1	84.0	144.0
132	113.9	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266736.d
Acq On : 16 Dec 2017 3:38 am
Operator : CHELSEAS
Sample : jc56966-27 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 41 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:16:46 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

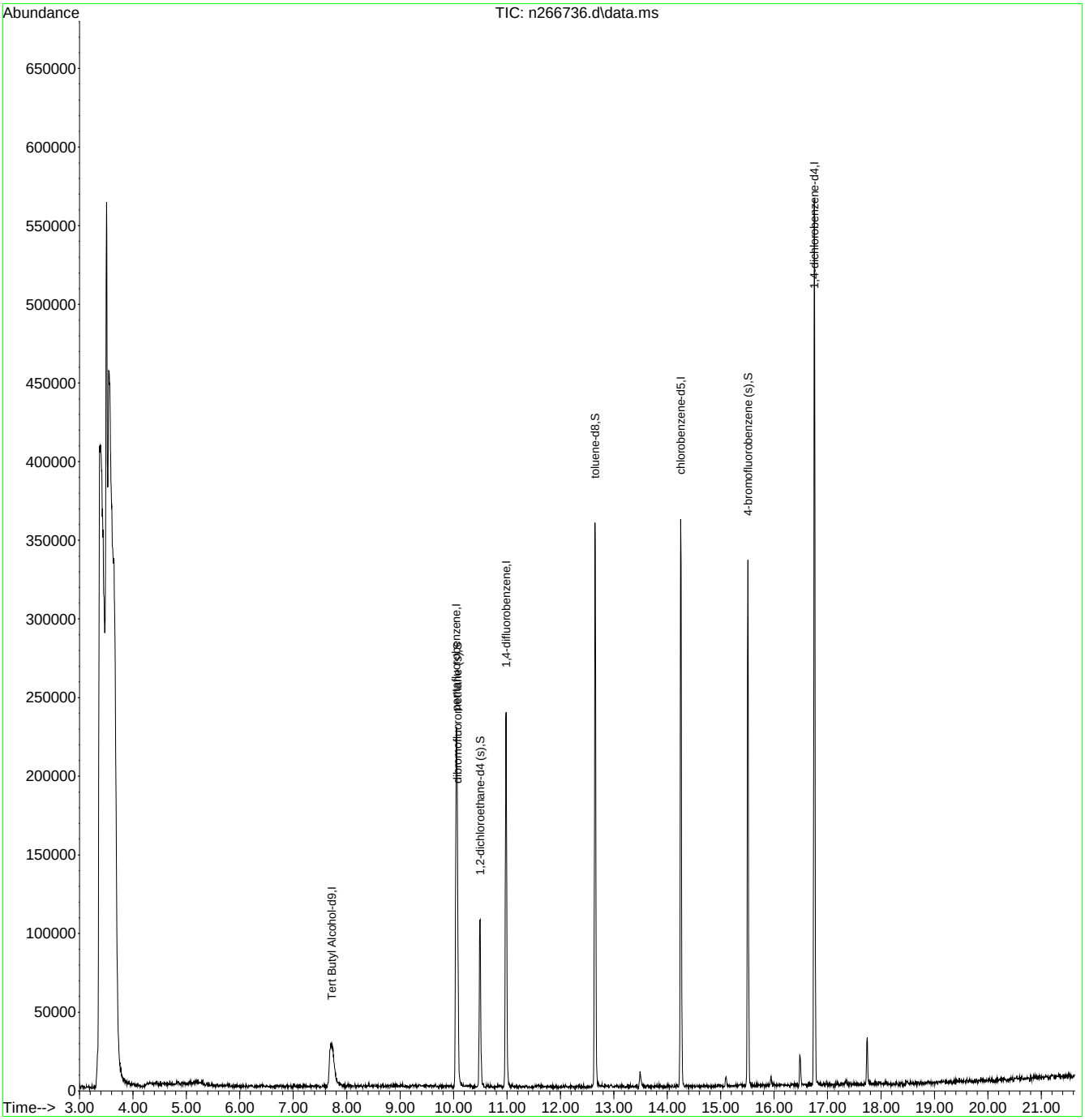
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.720	65	81650	300.00	ug/L	0.02
4) pentafluorobenzene	10.047	168	135998	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.983	114	180582	30.00	ug/L	0.00
74) chlorobenzene-d5	14.252	117	183527	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.752	152	138726	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.073	113	70389	33.29	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.97%			
54) 1,2-dichloroethane-d4 (s)	10.497	65	75013	33.78	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 112.60%			
75) toluene-d8	12.647	98	215352	26.90	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 89.67%			
97) 4-bromofluorobenzene (s)	15.507	95	96018	29.88	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.60%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266736.d
Acq On : 16 Dec 2017 3:38 am
Operator : CHELSEAS
Sample : jc56966-27 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 41 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:16:46 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266755.d
Acq On : 18 Dec 2017 12:46 pm
Operator : CHELSEAS
Sample : jc56966-28 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:53:15 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

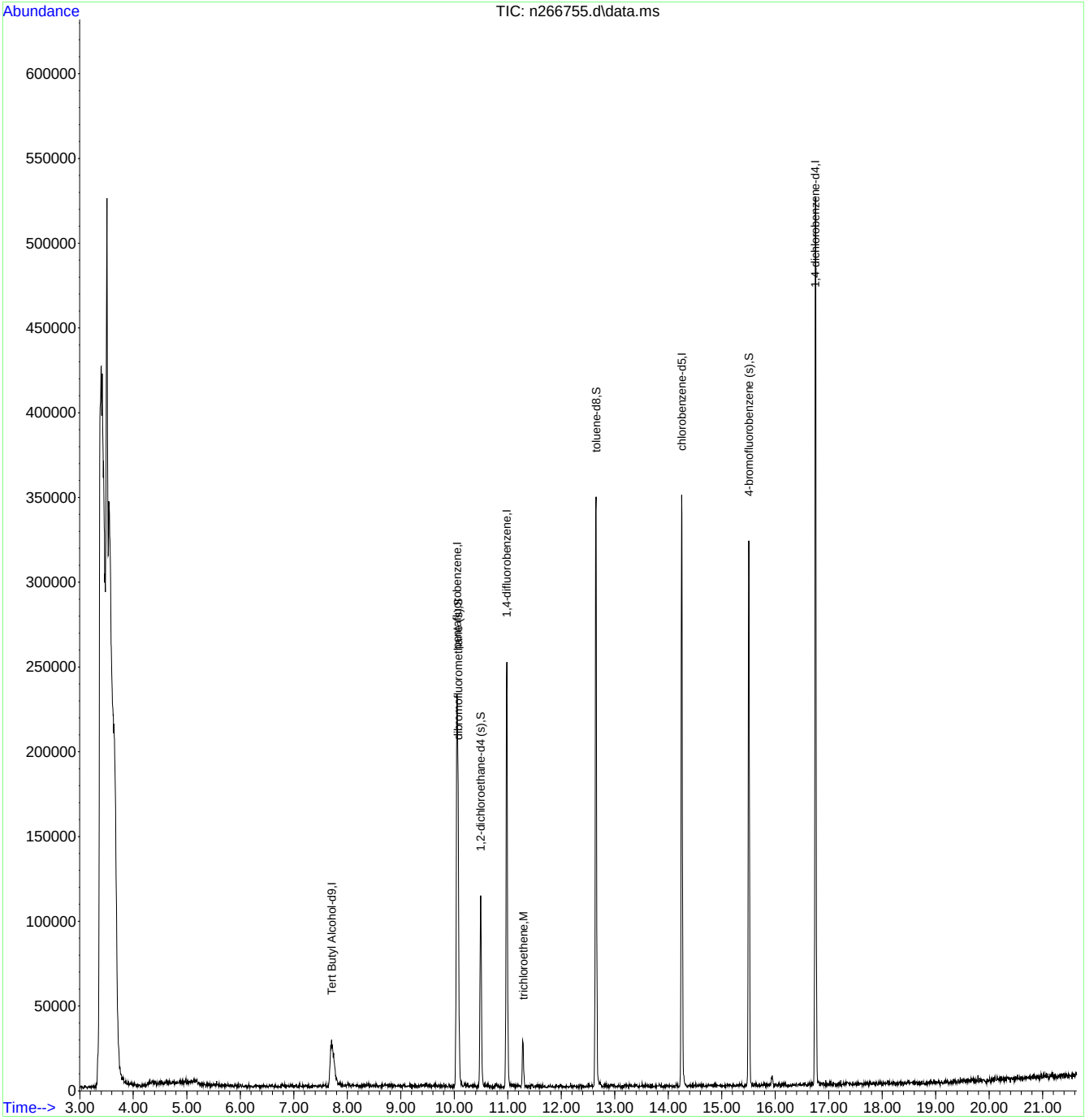
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.708	65	66410	300.00	ug/L	0.01
4) pentafluorobenzene	10.051	168	134212	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.982	114	186409	30.00	ug/L	0.00
74) chlorobenzene-d5	14.251	117	177015	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.751	152	127963	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.072	113	72834	34.91	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 116.37%			
54) 1,2-dichloroethane-d4 (s)	10.496	65	77211	33.68	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 112.27%			
75) toluene-d8	12.650	98	212298	27.49	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 91.63%			
97) 4-bromofluorobenzene (s)	15.506	95	90939	30.68	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.27%			
Target Compounds						Qvalue
62) trichloroethene	11.291	95	8566	4.83	ug/L	92

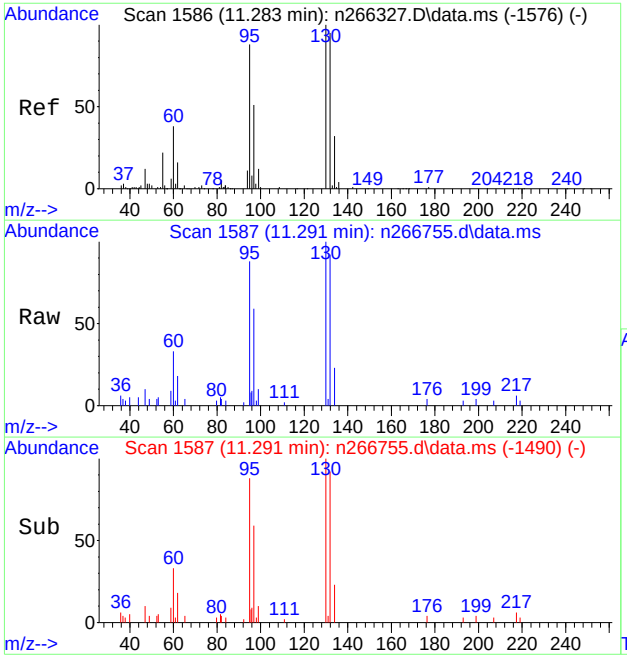
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266755.d
Acq On : 18 Dec 2017 12:46 pm
Operator : CHELSEAS
Sample : jc56966-28 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:53:15 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

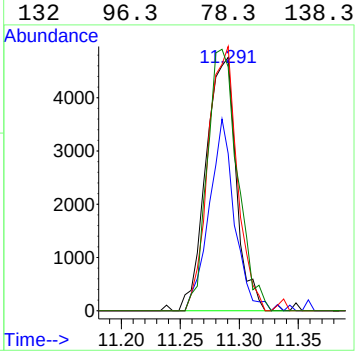




#62
trichloroethene
Concen: 4.83 ug/L
RT: 11.291 min Scan# 1587
Delta R.T. 0.008 min
Lab File: n266755.d
Acq: 18 Dec 2017 12:46 pm

Tgt Ion: 95 Resp: 8566

Ion	Ratio	Lower	Upper
95	100		
97	62.1	31.3	91.3
130	104.4	84.0	144.0
132	96.3	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266738.d
Acq On : 16 Dec 2017 4:37 am
Operator : CHELSEAS
Sample : jc56966-29 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 43 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:19:02 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

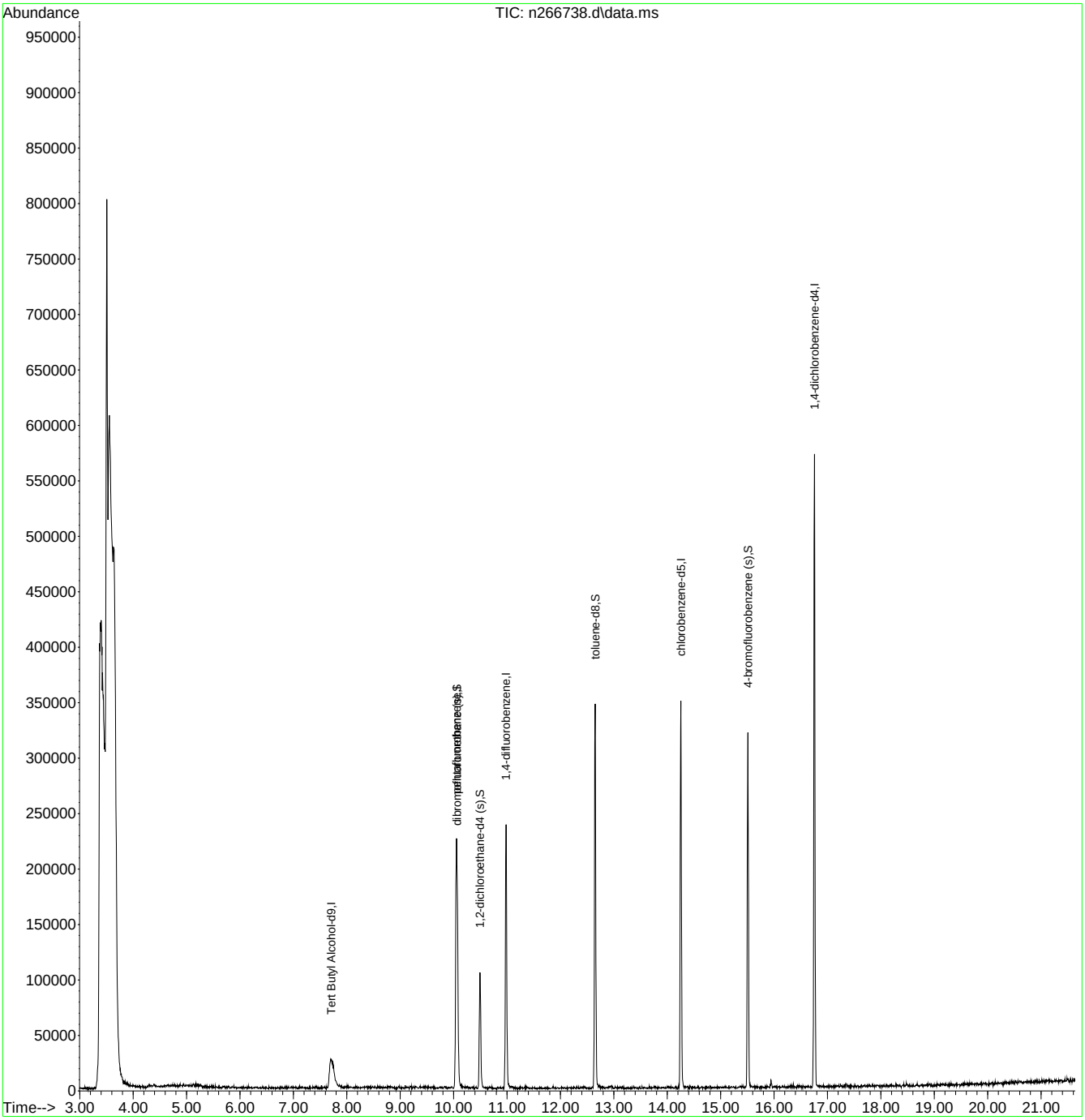
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.712	65	76493	300.00	ug/L	0.02
4) pentafluorobenzene	10.055	168	130436	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	174540	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	175769	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	130372	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.065	113	67208	33.14	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.47%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	73954	34.45	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 114.83%			
75) toluene-d8	12.649	98	210082	27.40	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 91.33%			
97) 4-bromofluorobenzene (s)	15.510	95	91605	30.34	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.13%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266738.d
Acq On : 16 Dec 2017 4:37 am
Operator : CHELSEAS
Sample : jc56966-29 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 43 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:19:02 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266739.d
Acq On : 16 Dec 2017 5:06 am
Operator : CHELSEAS
Sample : jc56966-30 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 44 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:19:40 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

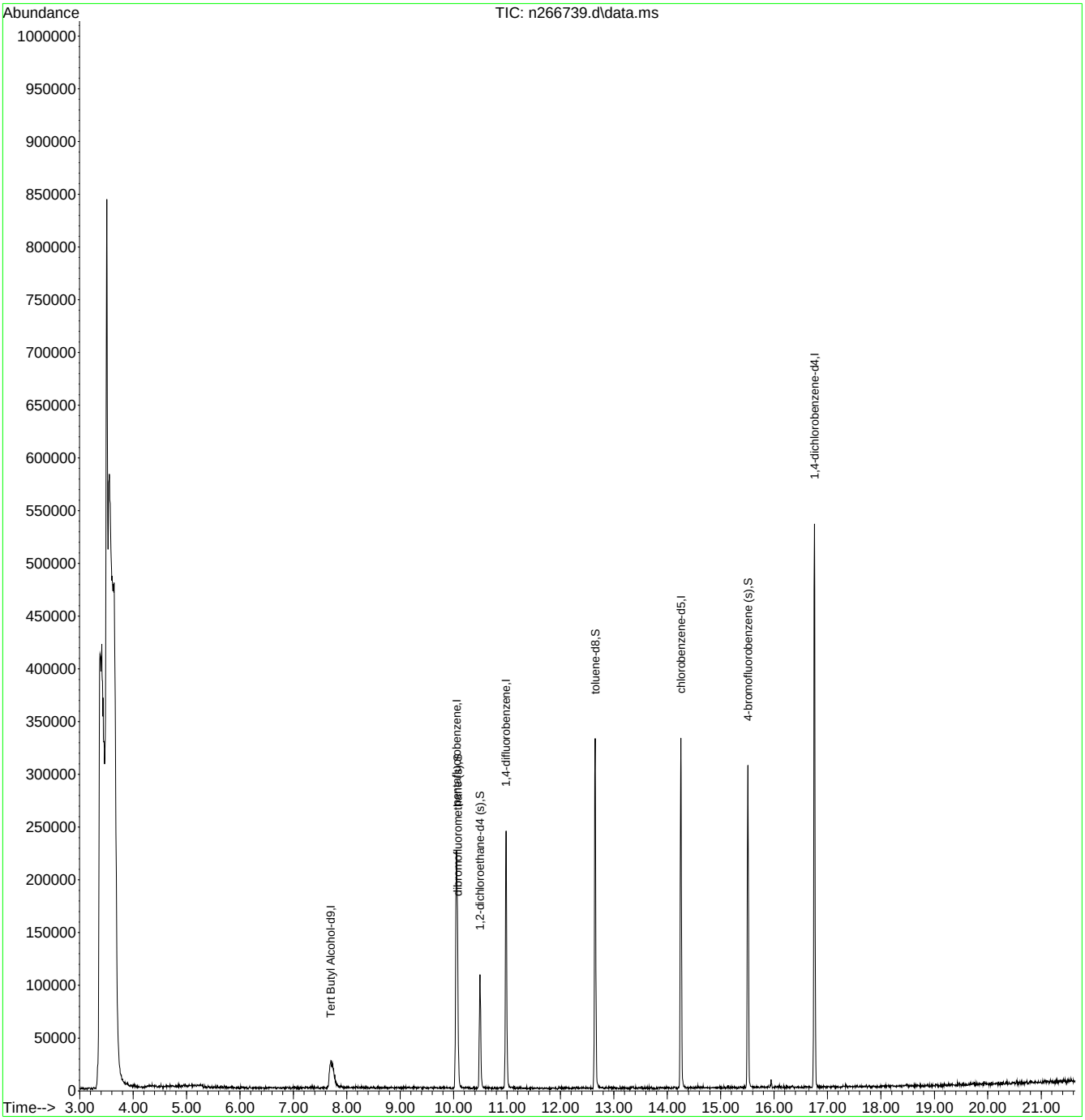
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.695	65	73609	300.00	ug/L	0.00
4) pentafluorobenzene	10.054	168	127973	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	175262	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	170249	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	126676	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	67450	33.90	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 113.00%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	73522	34.11	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.70%			
75) toluene-d8	12.648	98	200285	26.97	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 89.90%			
97) 4-bromofluorobenzene (s)	15.509	95	90801	30.95	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.17%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266739.d
Acq On : 16 Dec 2017 5:06 am
Operator : CHELSEAS
Sample : jc56966-30 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 44 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:19:40 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228721.d
Acq On : 13 Dec 2017 4:21 am
Operator : CHELSEAS
Sample : jc56966-31 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 38 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:29:58 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

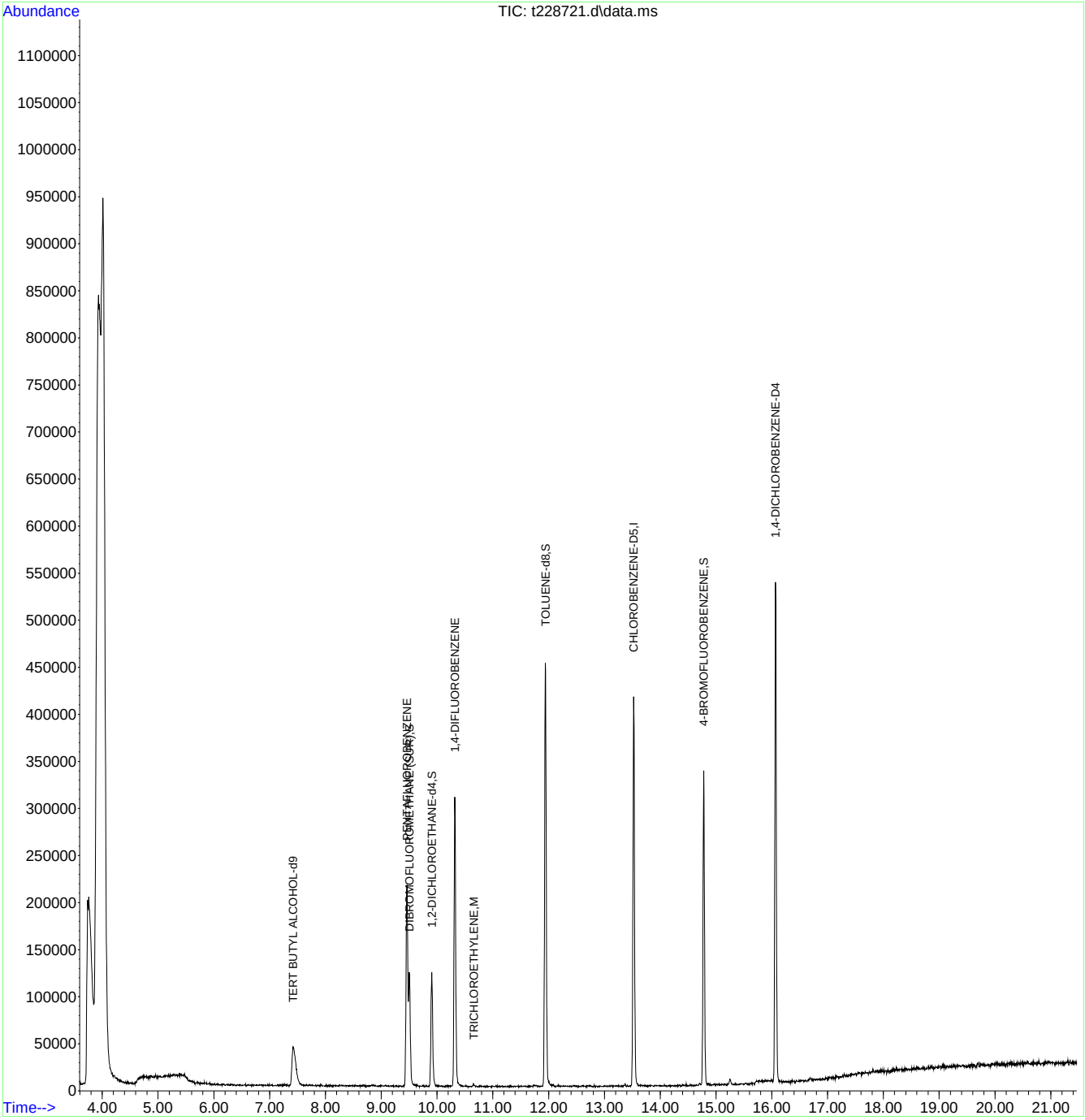
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.415	65	109826	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.460	168	166330	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.318	114	261721	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.524	117	252579	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.066	152	153795	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.508	113	78480	34.23	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 114.10%			
50) 1,2-DICHLOROETHANE-d4	9.905	65	88095	35.15	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 117.17%			
67) TOLUENE-d8	11.945	98	332671	30.89	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.97%			
90) 4-BROMOFLUOROBENZENE	14.780	174	107319	29.18	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.27%			
Target Compounds						Qvalue
56) TRICHLOROETHYLENE	10.658	95	807	0.30	PPb	77

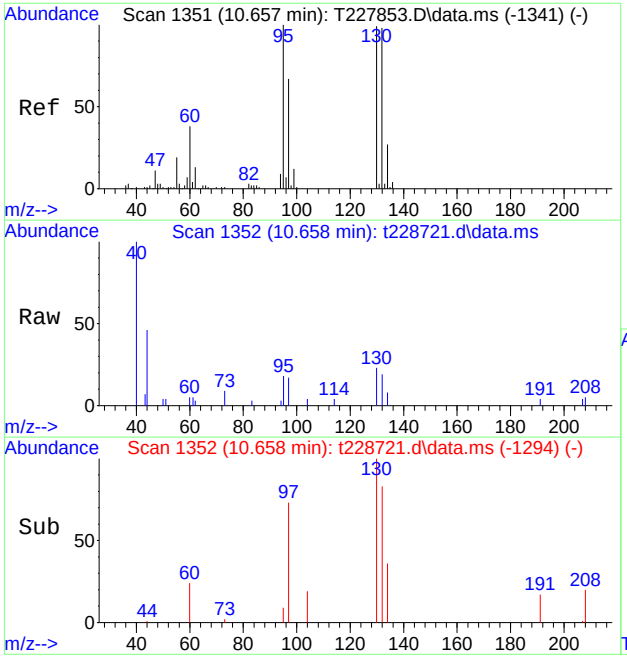
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228721.d
Acq On : 13 Dec 2017 4:21 am
Operator : CHELSEAS
Sample : jc56966-31 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 38 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:29:58 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

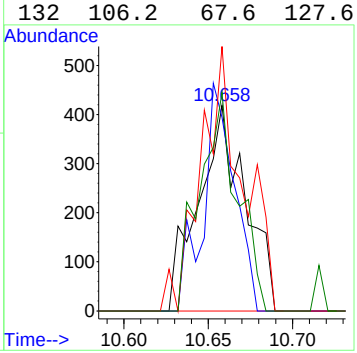




#56
TRICHLOROETHYLENE
Concen: 0.30 PPb
RT: 10.658 min Scan# 1352
Delta R.T. 0.001 min
Lab File: t228721.d
Acq: 13 Dec 2017 4:21 am

Tgt Ion: 95 Resp: 807

Ion	Ratio	Lower	Upper
95	100		
97	94.0	36.9	96.9
130	128.6	68.7	128.7
132	106.2	67.6	127.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266756.d
Acq On : 18 Dec 2017 1:16 pm
Operator : CHELSEAS
Sample : jc56966-32 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:53:53 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

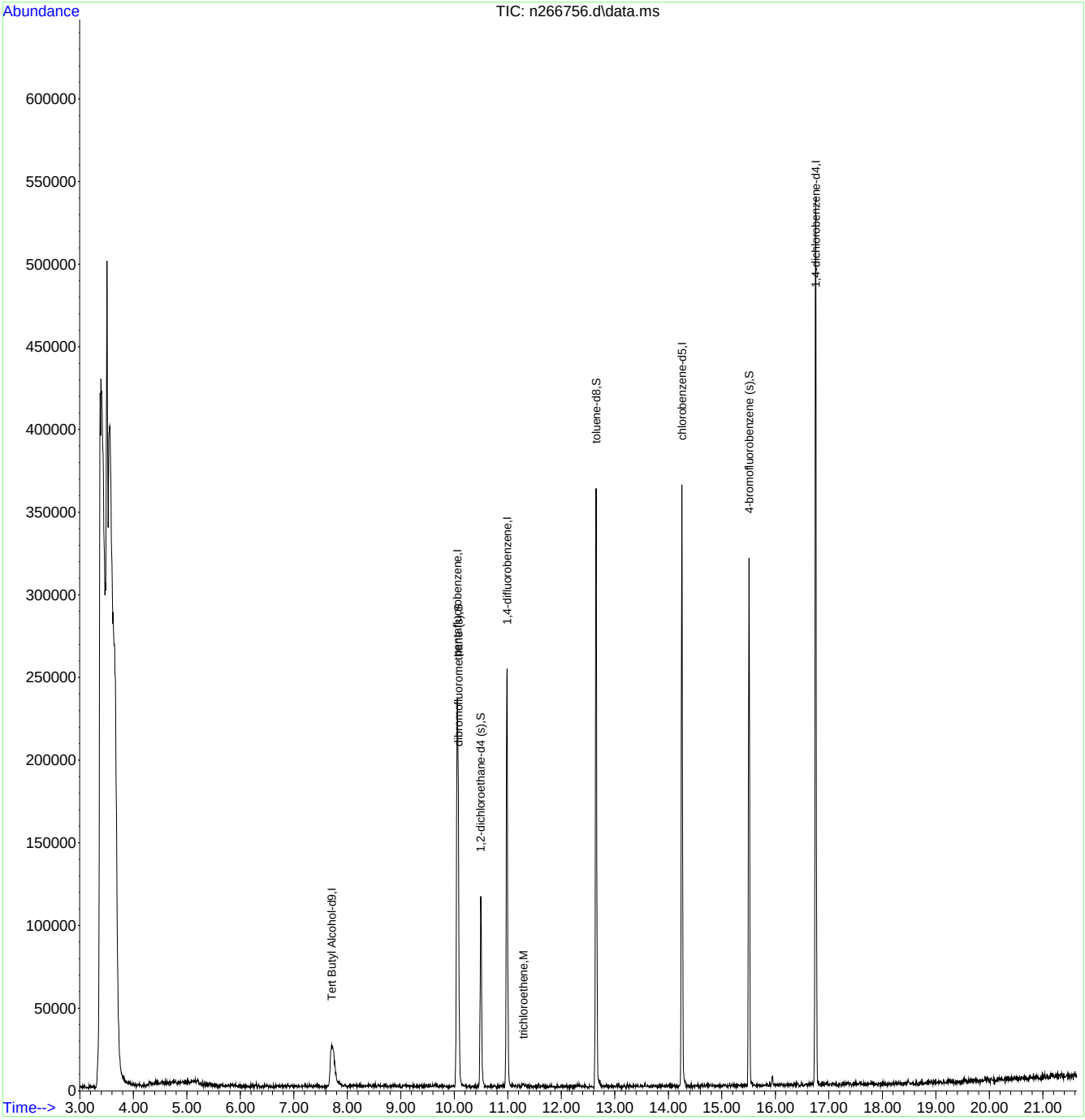
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.705	65	70293	300.00	ug/L	0.01
4) pentafluorobenzene	10.054	168	138509	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.985	114	186542	30.00	ug/L	0.00
74) chlorobenzene-d5	14.253	117	179811	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.753	152	128784	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	72378	33.61	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 112.03%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	78153	34.07	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.57%			
75) toluene-d8	12.648	98	218425	27.85	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.83%			
97) 4-bromofluorobenzene (s)	15.509	95	89632	30.05	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.17%			
Target Compounds						Qvalue
62) trichloroethene	11.293	95	409	0.23	ug/L	# 74

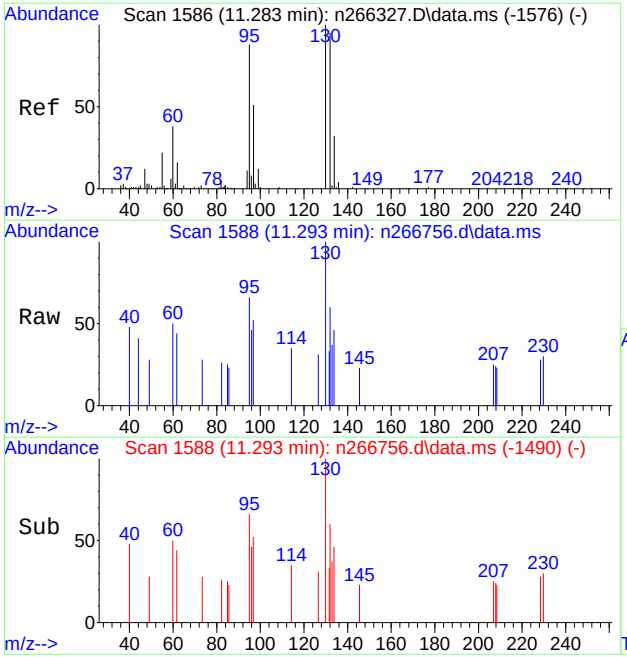
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266756.d
Acq On : 18 Dec 2017 1:16 pm
Operator : CHELSEAS
Sample : jc56966-32 Inst : GCMSN
Misc : MS22980,VN11241,5,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:53:53 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

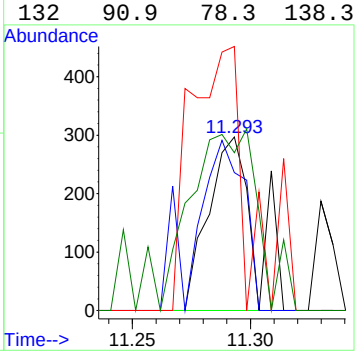




#62
trichloroethene
Concen: 0.23 ug/L
RT: 11.293 min Scan# 1588
Delta R.T. 0.010 min
Lab File: n266756.d
Acq: 18 Dec 2017 1:16 pm

Tgt Ion: 95 Resp: 409

Ion	Ratio	Lower	Upper
95	100		
97	79.5	31.3	91.3
130	152.2	84.0	144.0#
132	90.9	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266741.d
Acq On : 16 Dec 2017 6:05 am
Operator : CHELSEAS
Sample : jc56966-33 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 46 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:21:37 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

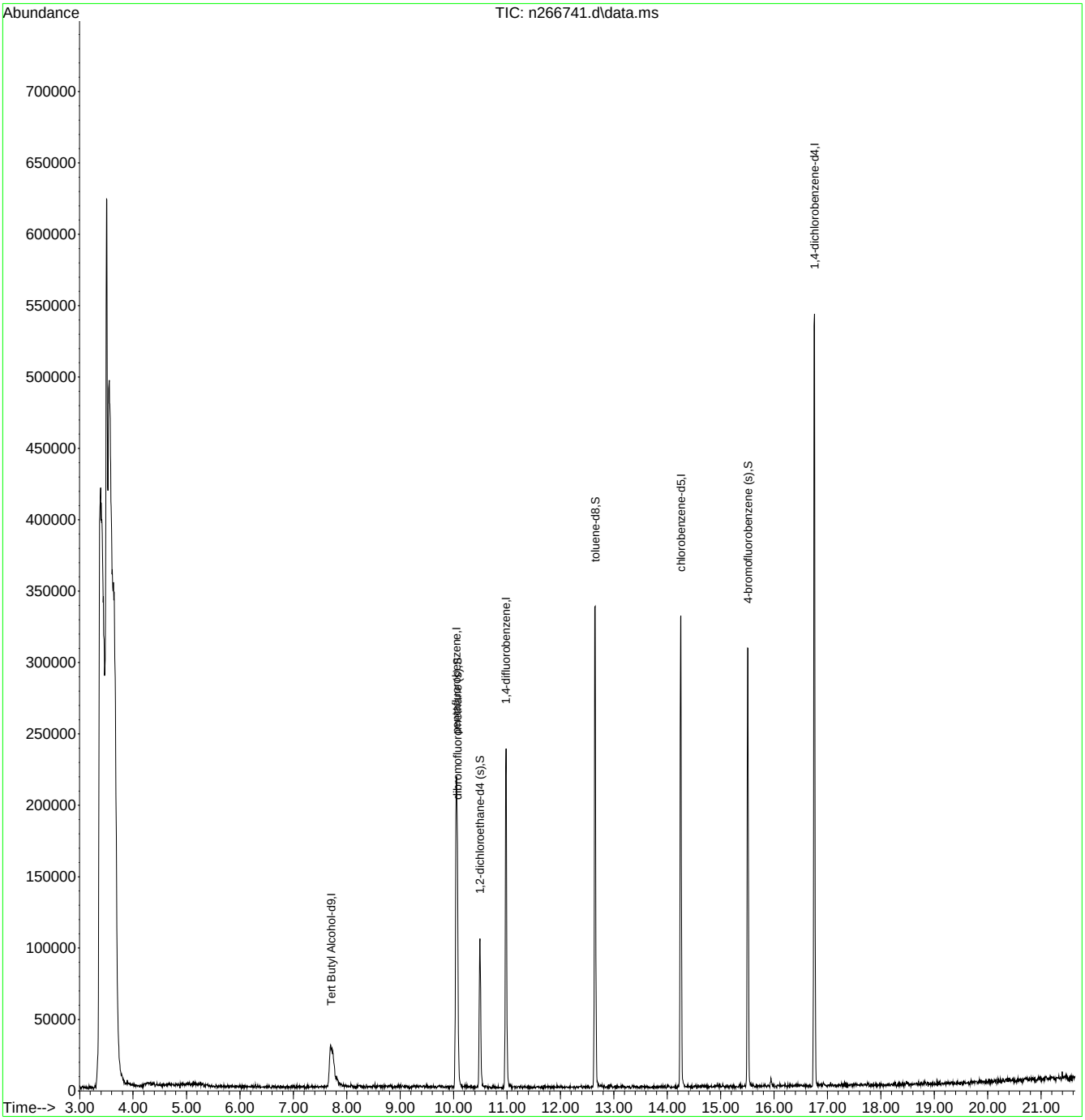
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.708	65	84052	300.00	ug/L	0.01
4) pentafluorobenzene	10.051	168	130473	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.982	114	176433	30.00	ug/L	0.00
74) chlorobenzene-d5	14.256	117	176764	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.756	152	130939	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.072	113	66493	32.78	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.27%			
54) 1,2-dichloroethane-d4 (s)	10.495	65	73761	33.99	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.30%			
75) toluene-d8	12.650	98	206621	26.80	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 89.33%			
97) 4-bromofluorobenzene (s)	15.511	95	90835	29.95	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.83%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266741.d
Acq On : 16 Dec 2017 6:05 am
Operator : CHELSEAS
Sample : jc56966-33 Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 46 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:21:37 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266708.d
Acq On : 15 Dec 2017 1:56 pm
Operator : CHELSEAS
Sample : jc56966-34 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:10:40 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

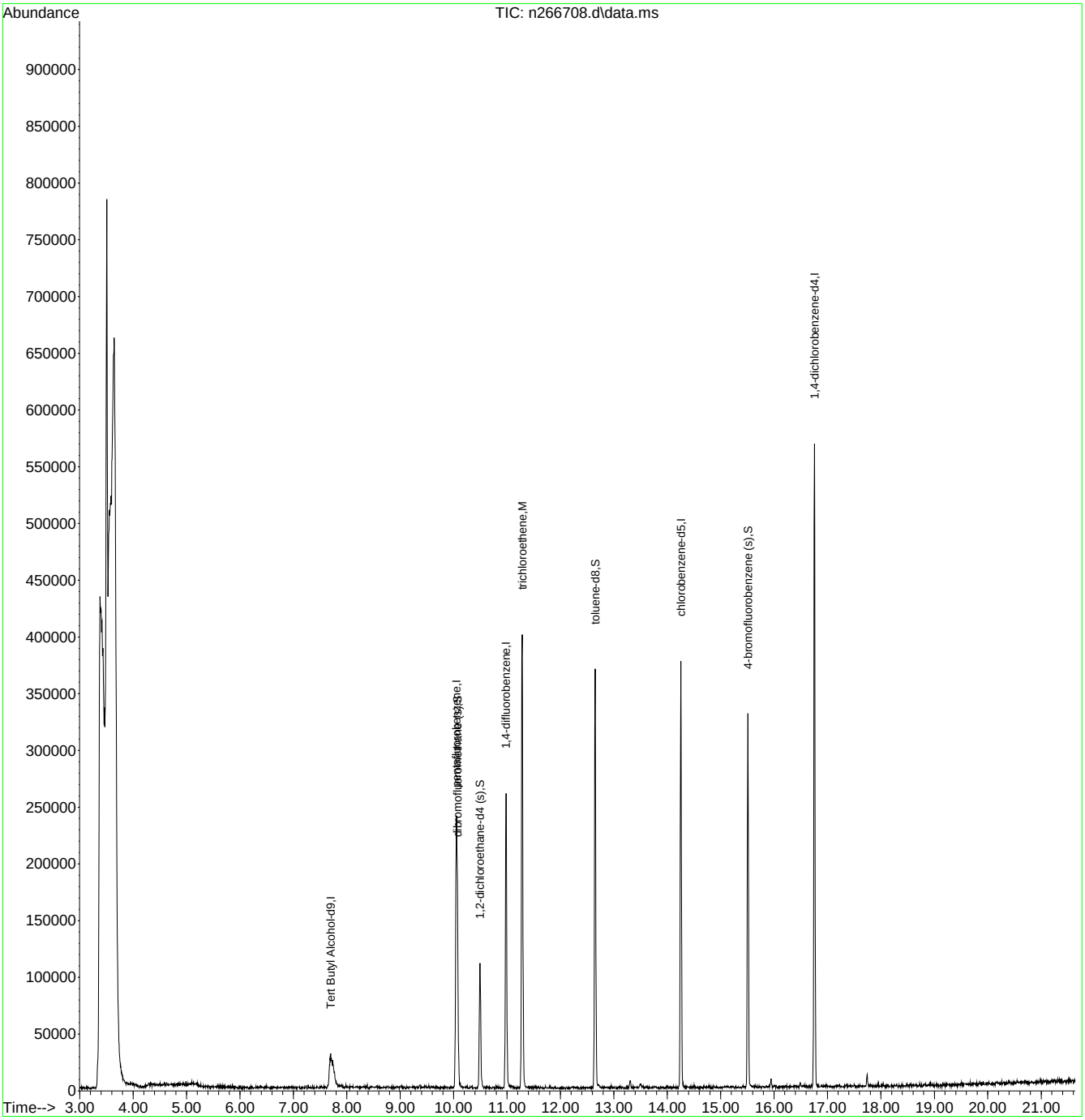
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.695	65	74625	300.00	ug/L	0.00
4) pentafluorobenzene	10.049	168	138260	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	186767	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	184451	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	134129	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.069	113	70933	33.00	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.00%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	77318	33.66	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 112.20%			
75) toluene-d8	12.648	98	225541	28.03	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.43%			
97) 4-bromofluorobenzene (s)	15.509	95	93128	29.98	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.93%			
Target Compounds						Qvalue
62) trichloroethene	11.283	95	121653	68.43	ug/L	94

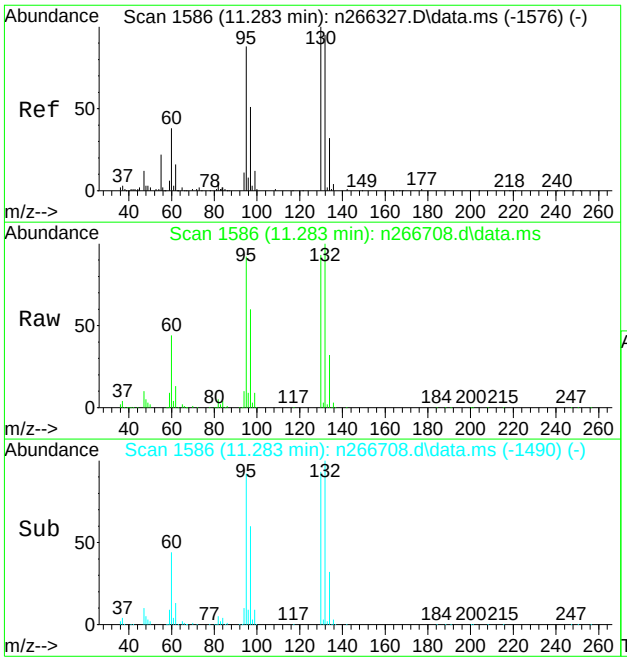
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266708.d
Acq On : 15 Dec 2017 1:56 pm
Operator : CHELSEAS
Sample : jc56966-34 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:10:40 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

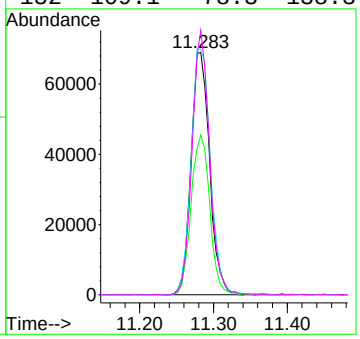




#62
trichloroethene
Concen: 68.43 ug/L
RT: 11.283 min Scan# 1586
Delta R.T. 0.000 min
Lab File: n266708.d
Acq: 15 Dec 2017 1:56 pm

Tgt Ion: 95 Resp: 121653

Ion	Ratio	Lower	Upper
95	100		
97	65.9	31.3	91.3
130	101.4	84.0	144.0
132	109.1	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266716.d
Acq On : 15 Dec 2017 5:51 pm
Operator : CHELSEAS
Sample : jc56966-35 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,4
ALS Vial : 22 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:23:31 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

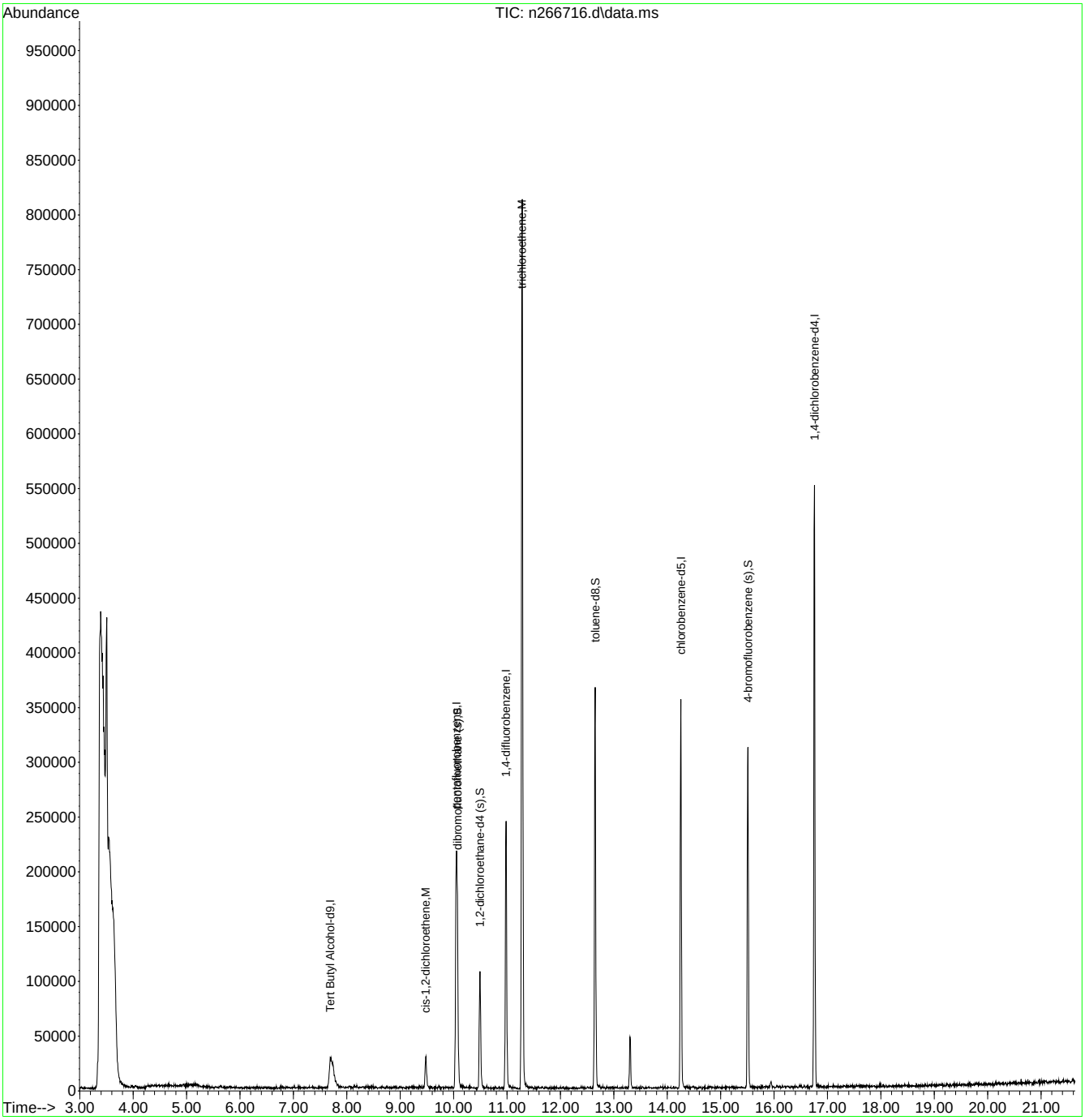
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.691	65	76525	300.00	ug/L	0.00
4) pentafluorobenzene	10.050	168	130870	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	180883	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	175501	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	129034	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.070	113	68314	33.58	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.93%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	74611	33.54	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 111.80%			
75) toluene-d8	12.649	98	215490	28.15	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.83%			
97) 4-bromofluorobenzene (s)	15.510	95	92281	30.88	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.93%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.474	96	13275	6.07	ug/L	89
62) trichloroethene	11.279	95	249417	144.87	ug/L	92

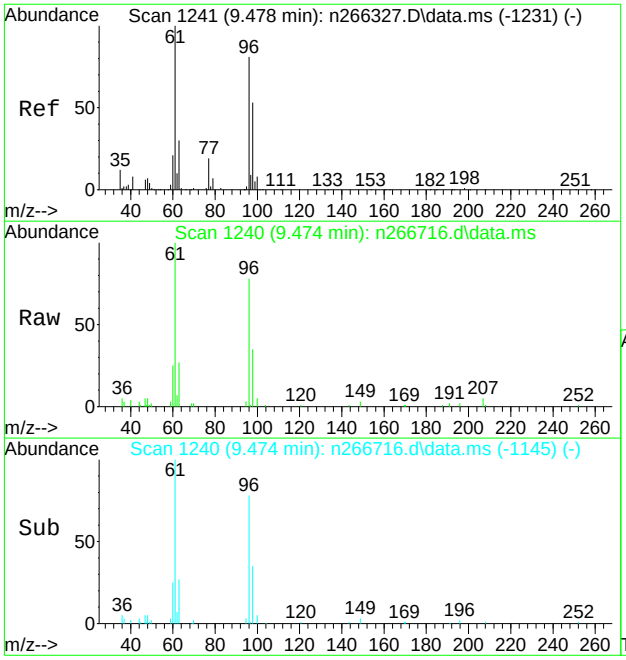
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266716.d
Acq On : 15 Dec 2017 5:51 pm
Operator : CHELSEAS
Sample : jc56966-35 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,4
ALS Vial : 22 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:23:31 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

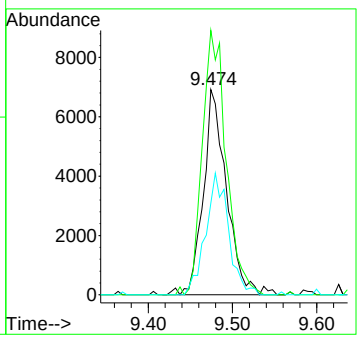


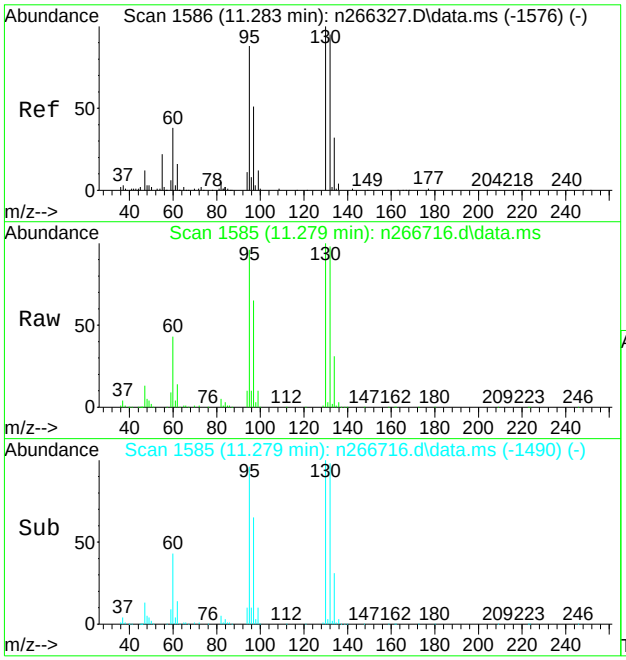


#39
cis-1,2-dichloroethene
Concen: 6.07 ug/L
RT: 9.474 min Scan# 1240
Delta R.T. -0.004 min
Lab File: n266716.d
Acq: 15 Dec 2017 5:51 pm

Tgt Ion: 96 Resp: 13275

Ion	Ratio	Lower	Upper
96	100		
61	126.5	94.2	154.2
98	43.9	35.9	95.9

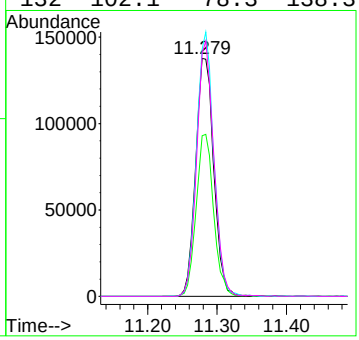




#62
trichloroethene
Concen: 144.87 ug/L
RT: 11.279 min Scan# 1585
Delta R.T. -0.004 min
Lab File: n266716.d
Acq: 15 Dec 2017 5:51 pm

Tgt Ion: 95 Resp: 249417

Ion	Ratio	Lower	Upper
95	100		
97	67.5	31.3	91.3
130	103.9	84.0	144.0
132	102.1	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266715.d
Acq On : 15 Dec 2017 5:22 pm
Operator : CHELSEAS
Sample : jc56966-36 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:22:27 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

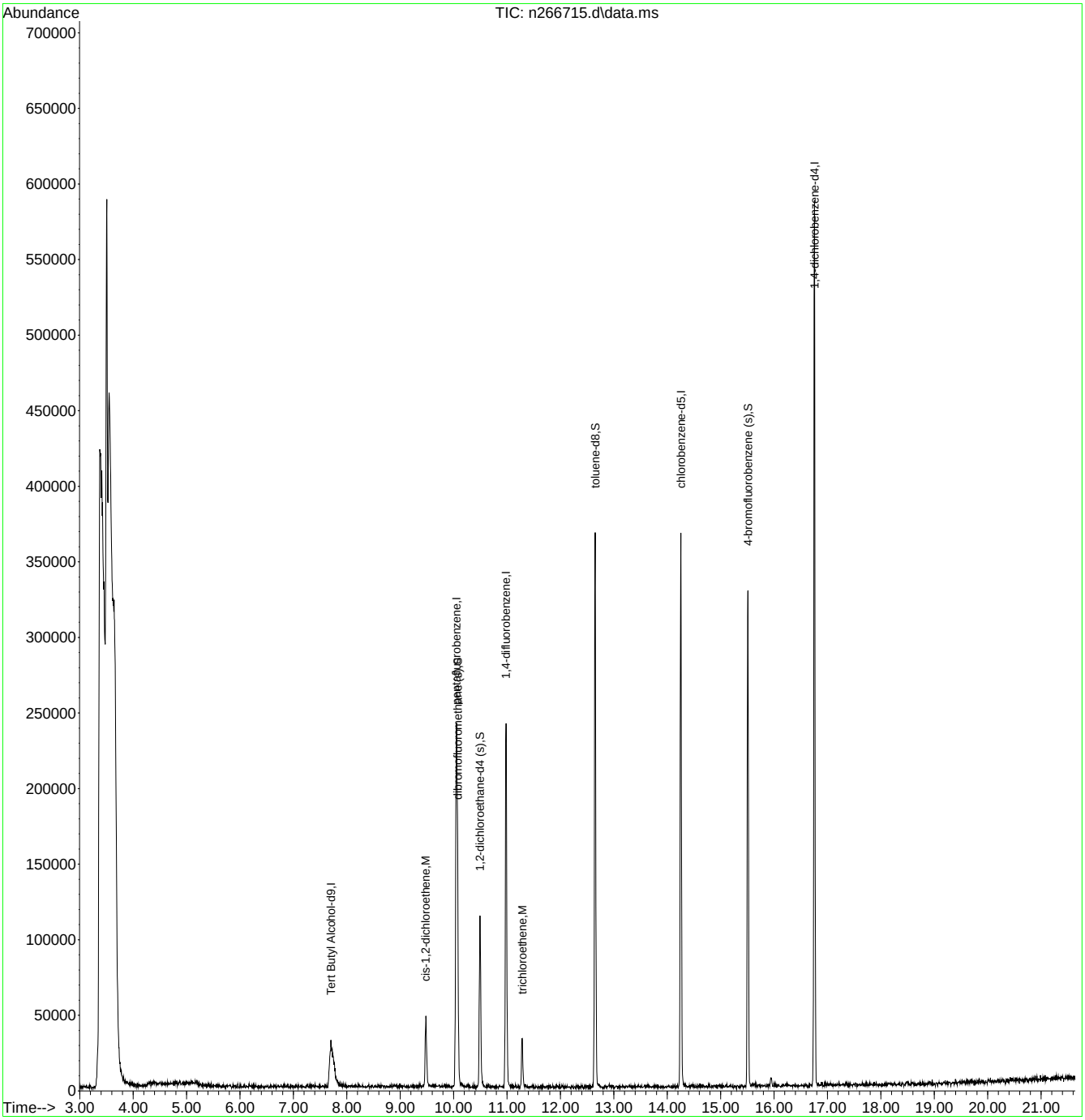
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.702	65	78678	300.00	ug/L	0.00
4) pentafluorobenzene	10.050	168	139969	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	188814	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	186410	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	135075	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.076	113	72346	33.25	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.83%			
54) 1,2-dichloroethane-d4 (s)	10.495	65	79022	34.03	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.43%			
75) toluene-d8	12.649	98	225861	27.78	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.60%			
97) 4-bromofluorobenzene (s)	15.510	95	95793	30.62	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.07%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.475	96	22064	9.43	ug/L	94
62) trichloroethene	11.284	95	10142	5.64	ug/L #	78

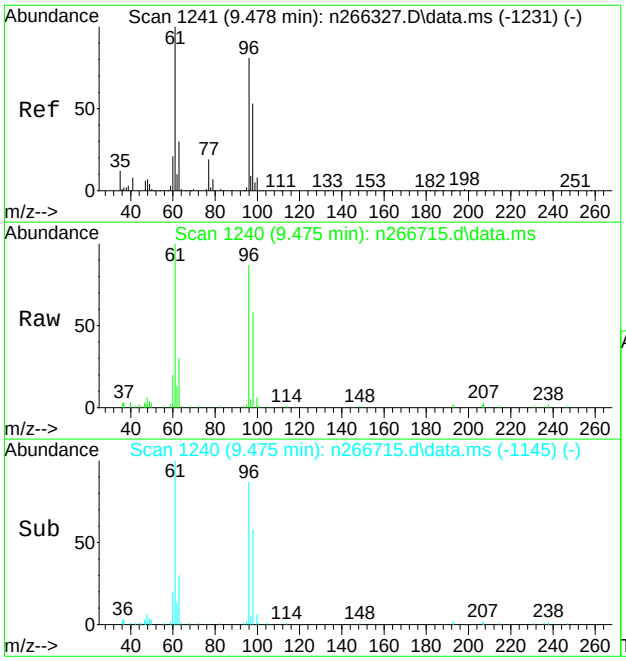
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266715.d
Acq On : 15 Dec 2017 5:22 pm
Operator : CHELSEAS
Sample : jc56966-36 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:22:27 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

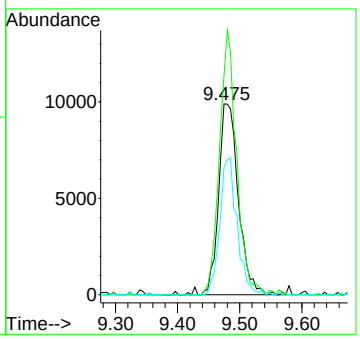


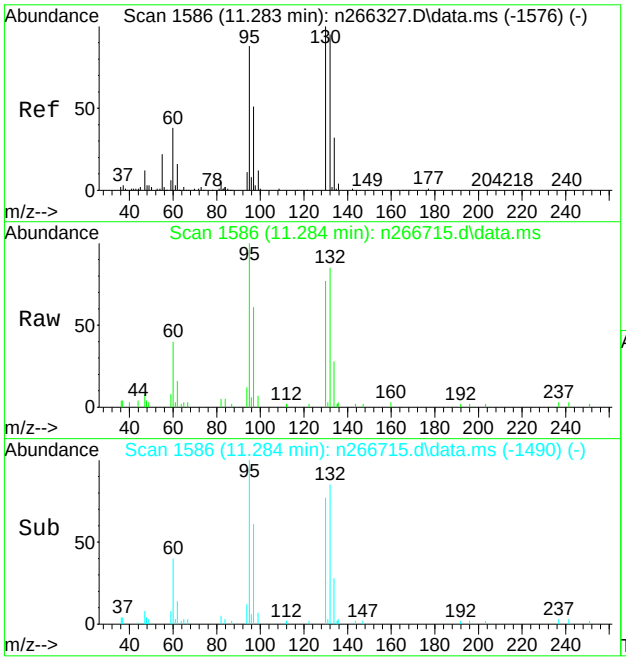


#39
cis-1,2-dichloroethene
Concen: 9.43 ug/L
RT: 9.475 min Scan# 1240
Delta R.T. -0.004 min
Lab File: n266715.d
Acq: 15 Dec 2017 5:22 pm

Tgt Ion: 96 Resp: 22064

Ion	Ratio	Lower	Upper
96	100		
61	114.9	94.2	154.2
98	66.9	35.9	95.9

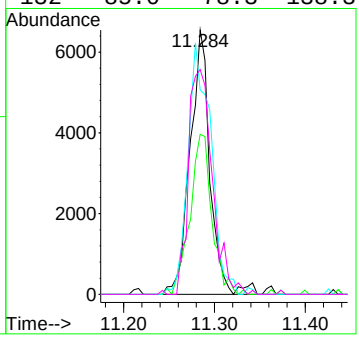




#62
trichloroethene
Concen: 5.64 ug/L
RT: 11.284 min Scan# 1586
Delta R.T. 0.002 min
Lab File: n266715.d
Acq: 15 Dec 2017 5:22 pm

Tgt Ion: 95 Resp: 10142

Ion	Ratio	Lower	Upper
95	100		
97	60.5	31.3	91.3
130	77.3	84.0	144.0#
132	85.0	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266717.d
Acq On : 15 Dec 2017 6:20 pm
Operator : CHELSEAS
Sample : jc56966-37 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:24:50 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

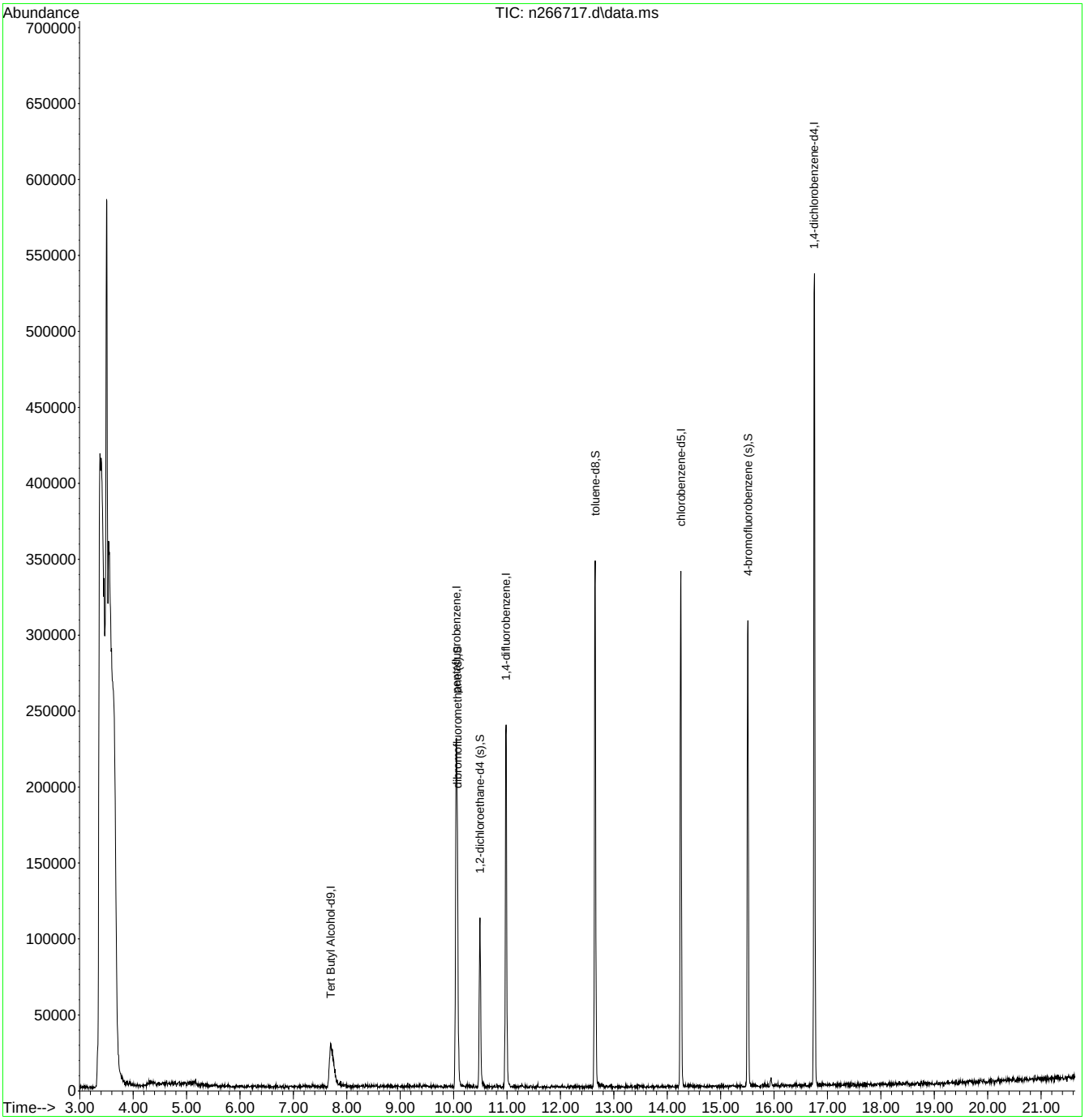
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.696	65	76461	300.00	ug/L	0.00
4) pentafluorobenzene	10.050	168	134477	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.981	114	183015	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	173561	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.750	152	129469	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.071	113	68703	32.86	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.53%			
54) 1,2-dichloroethane-d4 (s)	10.495	65	77811	34.57	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 115.23%			
75) toluene-d8	12.649	98	214273	28.30	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.33%			
97) 4-bromofluorobenzene (s)	15.510	95	89935	29.99	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.97%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266717.d
Acq On : 15 Dec 2017 6:20 pm
Operator : CHELSEAS
Sample : jc56966-37 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:24:50 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266718.d
Acq On : 15 Dec 2017 6:50 pm
Operator : CHELSEAS
Sample : jc56966-38 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:25:47 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

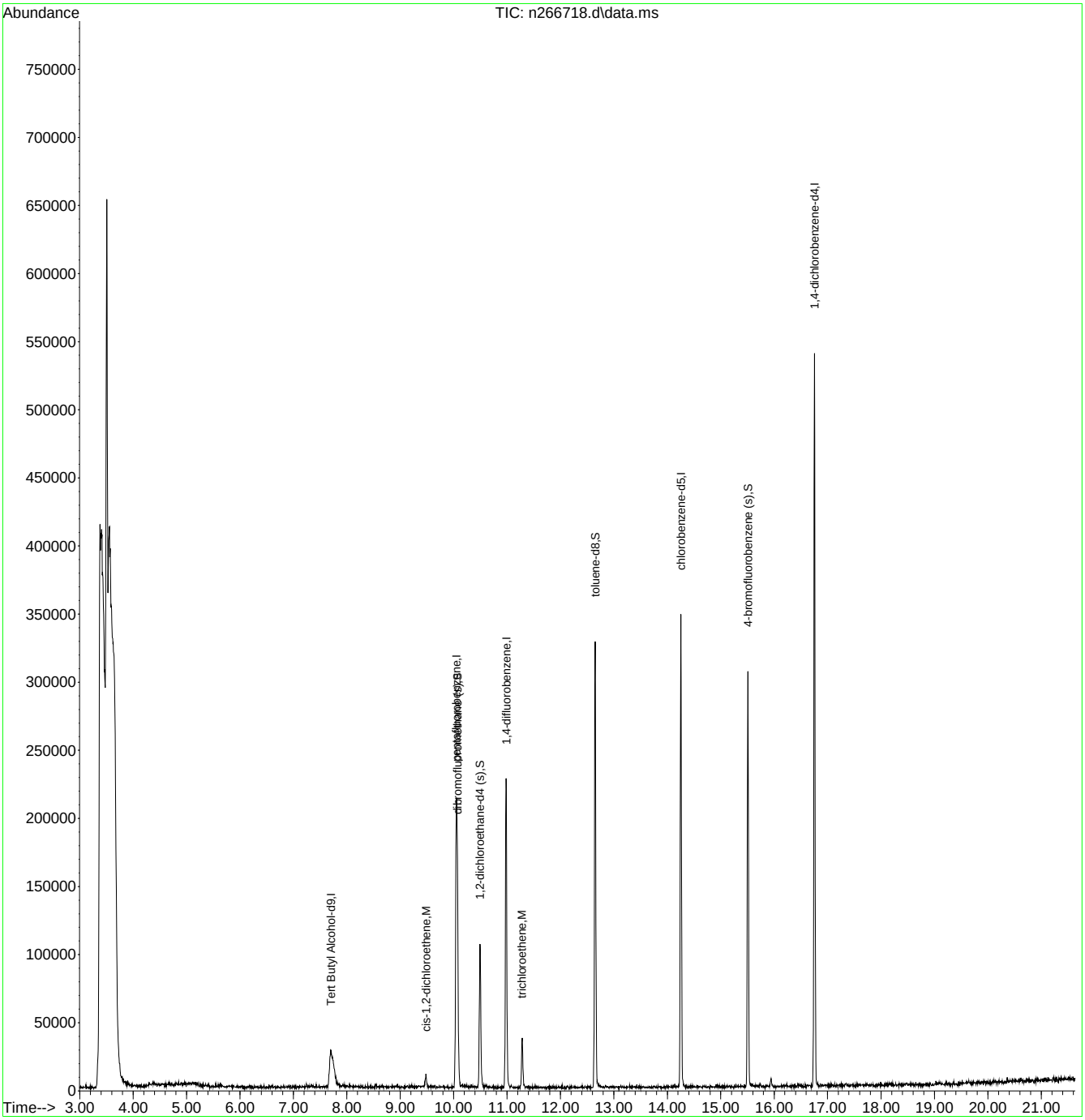
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.700	65	73631	300.00	ug/L	0.00
4) pentafluorobenzene	10.048	168	126390	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.985	114	174768	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	167594	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	127499	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.069	113	66143	33.66	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 112.20%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	73579	34.23	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 114.10%			
75) toluene-d8	12.648	98	204046	27.91	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.03%			
97) 4-bromofluorobenzene (s)	15.509	95	87470	29.62	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.73%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.484	96	3762	1.78	ug/L	75
62) trichloroethene	11.278	95	10786	6.48	ug/L	75

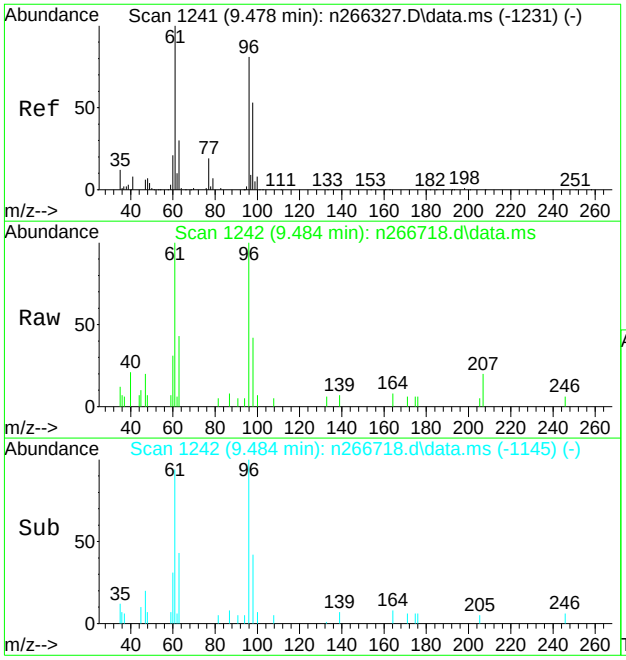
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266718.d
Acq On : 15 Dec 2017 6:50 pm
Operator : CHELSEAS
Sample : jc56966-38 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:25:47 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

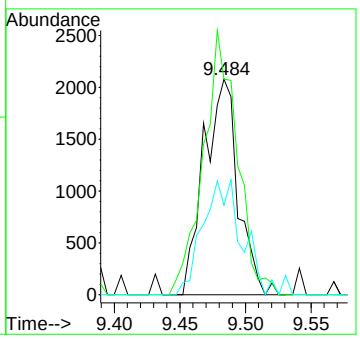


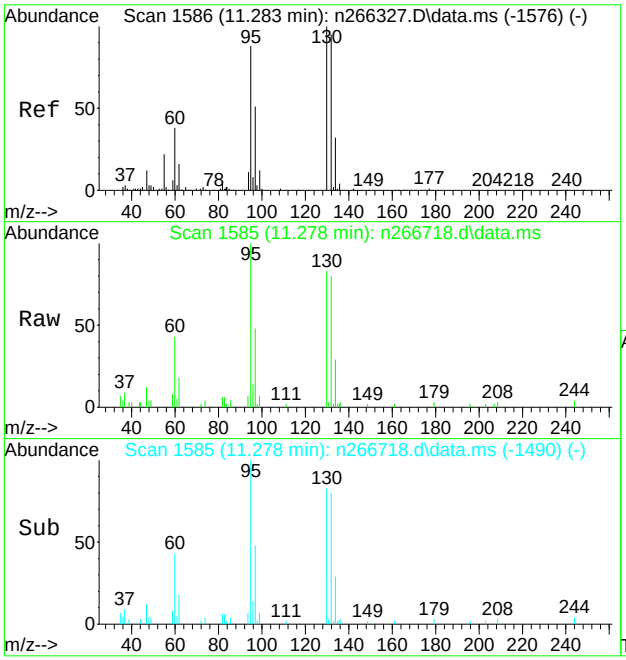


#39
cis-1,2-dichloroethene
Concen: 1.78 ug/L
RT: 9.484 min Scan# 1242
Delta R.T. 0.005 min
Lab File: n266718.d
Acq: 15 Dec 2017 6:50 pm

Tgt Ion: 96 Resp: 3762

Ion	Ratio	Lower	Upper
96	100		
61	100.0	94.2	154.2
98	41.6	35.9	95.9

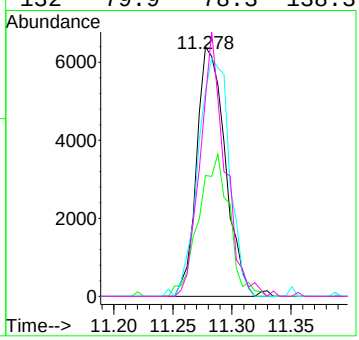




#62
trichloroethene
Concen: 6.48 ug/L
RT: 11.278 min Scan# 1585
Delta R.T. -0.005 min
Lab File: n266718.d
Acq: 15 Dec 2017 6:50 pm

Tgt Ion: 95 Resp: 10786

Ion	Ratio	Lower	Upper
95	100		
97	48.5	31.3	91.3
130	85.3	84.0	144.0
132	79.9	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266719.d
Acq On : 15 Dec 2017 7:19 pm
Operator : CHELSEAS
Sample : jc56966-39 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,4
ALS Vial : 25 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:26:50 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

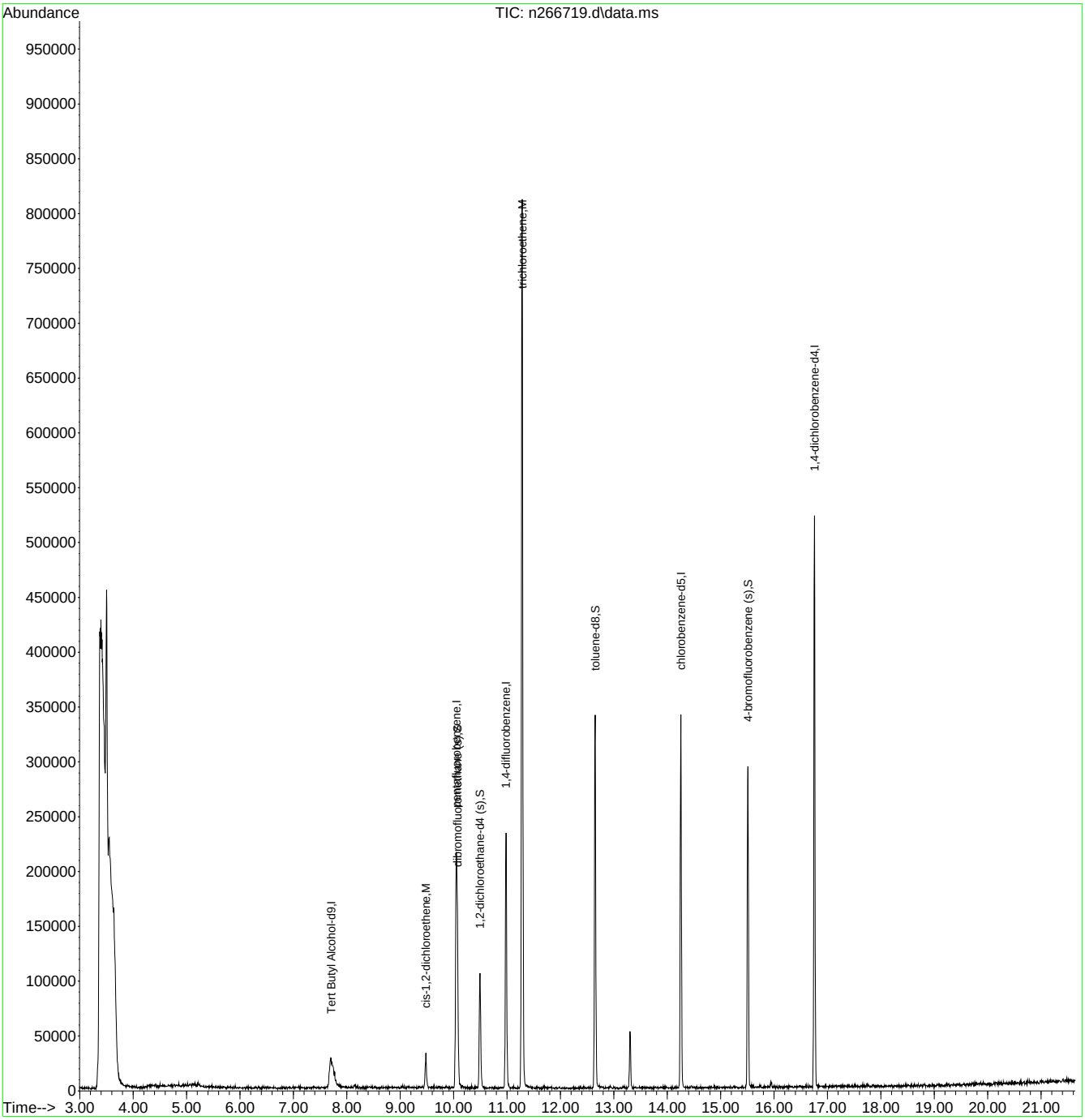
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.706	65	71632	300.00	ug/L	0.01
4) pentafluorobenzene	10.049	168	127781	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	174387	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	168115	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	124767	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.070	113	65269	32.86	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.53%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	74818	34.88	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 116.27%			
75) toluene-d8	12.649	98	205138	27.97	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.23%			
97) 4-bromofluorobenzene (s)	15.510	95	86546	29.95	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.83%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.479	96	12548	5.88	ug/L #	60
62) trichloroethene	11.284	95	246165	148.31	ug/L	93

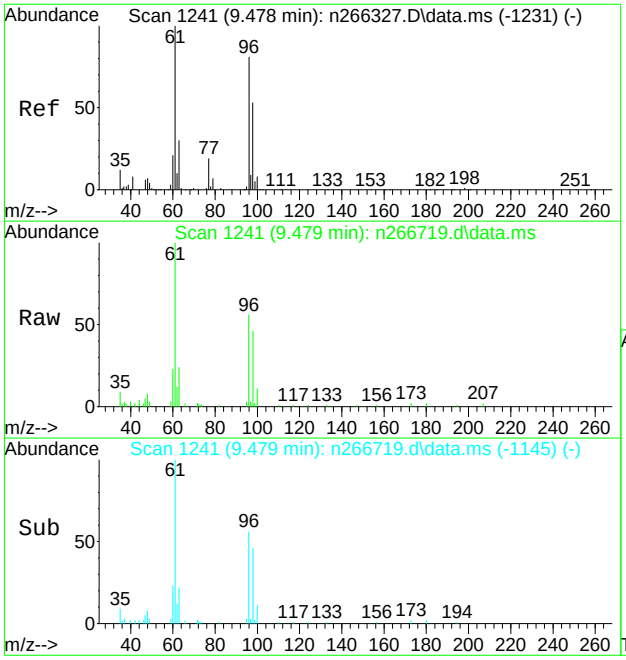
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266719.d
Acq On : 15 Dec 2017 7:19 pm
Operator : CHELSEAS
Sample : jc56966-39 Inst : GCMSN
Misc : MS22980,VN11239,5,,,,4
ALS Vial : 25 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:26:50 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

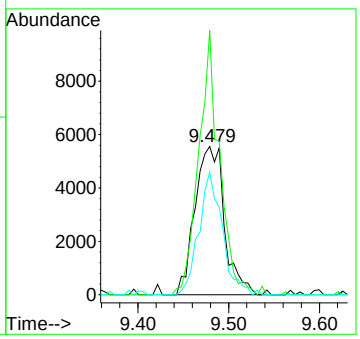


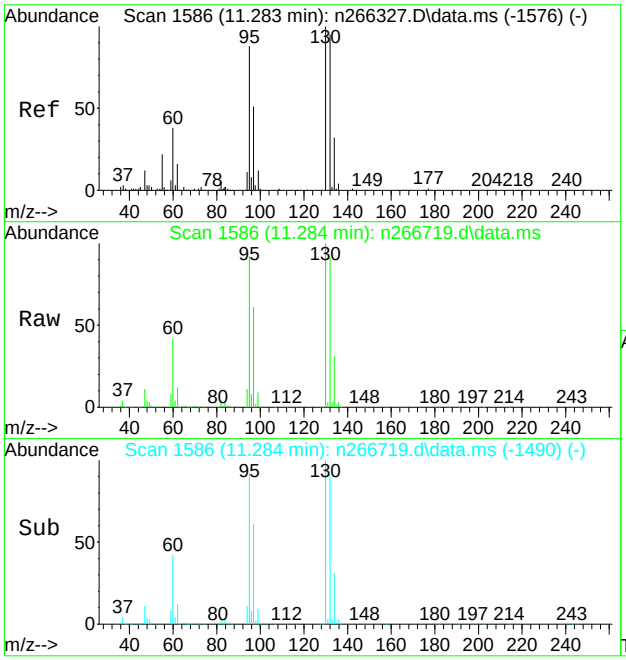


#39
cis-1,2-dichloroethene
Concen: 5.88 ug/L
RT: 9.479 min Scan# 1241
Delta R.T. 0.001 min
Lab File: n266719.d
Acq: 15 Dec 2017 7:19 pm

Tgt Ion: 96 Resp: 12548

Ion	Ratio	Lower	Upper
96	100		
61	178.4	94.2	154.2#
98	86.6	35.9	95.9

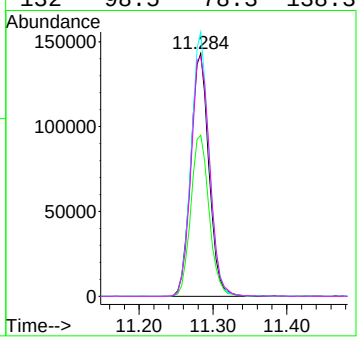




#62
trichloroethene
Concen: 148.31 ug/L
RT: 11.284 min Scan# 1586
Delta R.T. 0.001 min
Lab File: n266719.d
Acq: 15 Dec 2017 7:19 pm

Tgt Ion: 95 Resp: 246165

Ion	Ratio	Lower	Upper
95	100		
97	66.3	31.3	91.3
130	108.7	84.0	144.0
132	98.5	78.3	138.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228720.d
Acq On : 13 Dec 2017 3:51 am
Operator : CHELSEAS
Sample : jc56966-40 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 37 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:27:46 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.417	65	104156	300.00	PPb	-0.01
4) PENTAFLUOROBENZENE	9.457	168	164106	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.320	114	256340	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.526	117	246184	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.068	152	148138	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.504	113	77911	34.44	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 114.80%			
50) 1,2-DICHLOROETHANE-d4	9.901	65	85588	34.86	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 116.20%			
67) TOLUENE-d8	11.941	98	324825	30.94	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.13%			
90) 4-BROMOFLUOROBENZENE	14.781	174	103200	29.13	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.10%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

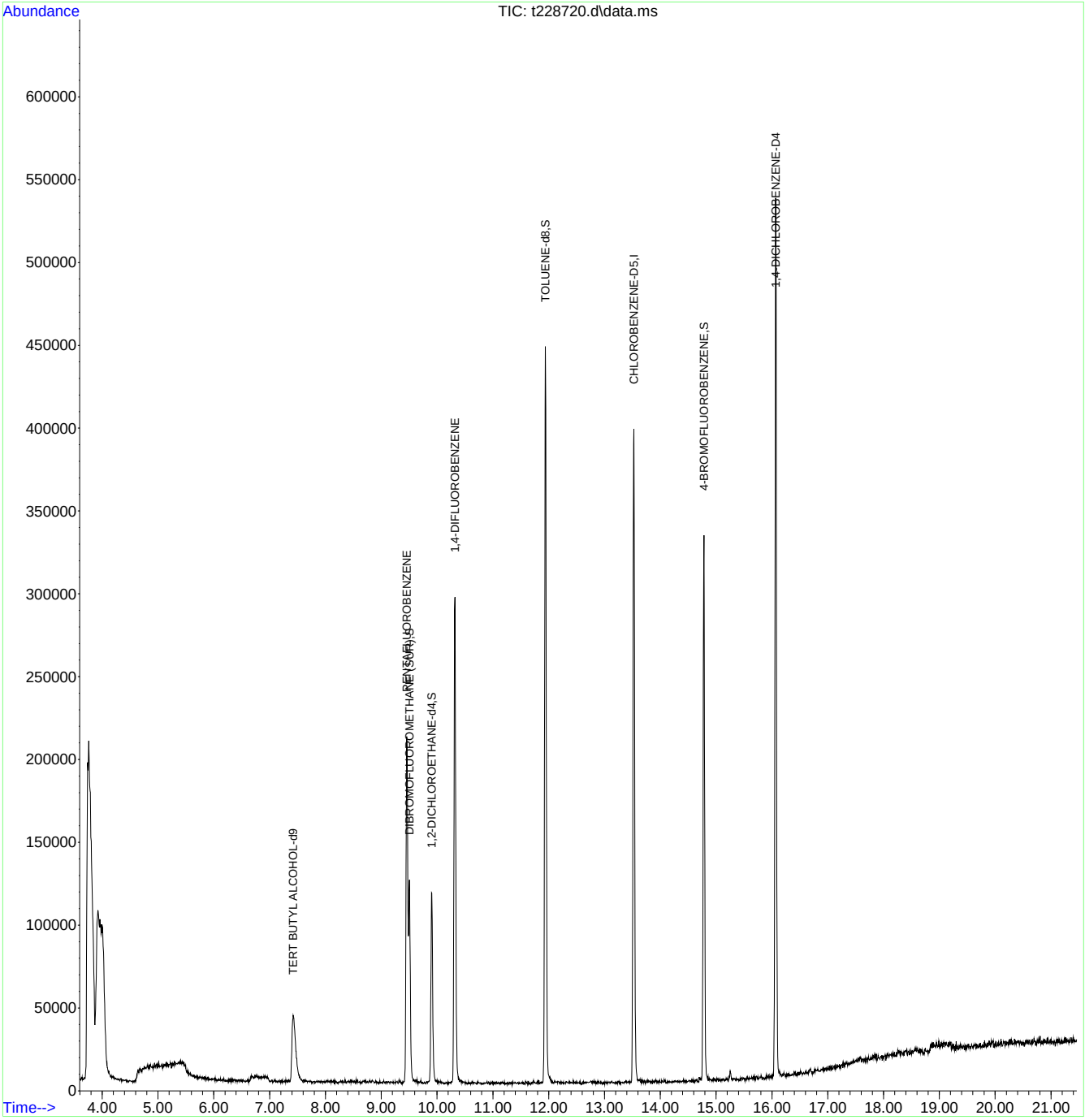
7.1.42

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228720.d
Acq On : 13 Dec 2017 3:51 am
Operator : CHELSEAS
Sample : jc56966-40 Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 37 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:27:46 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266592.d
Acq On : 13 Dec 2017 12:34 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS22984,VN11234,5,,,,1
ALS Vial : 30 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:16:00 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

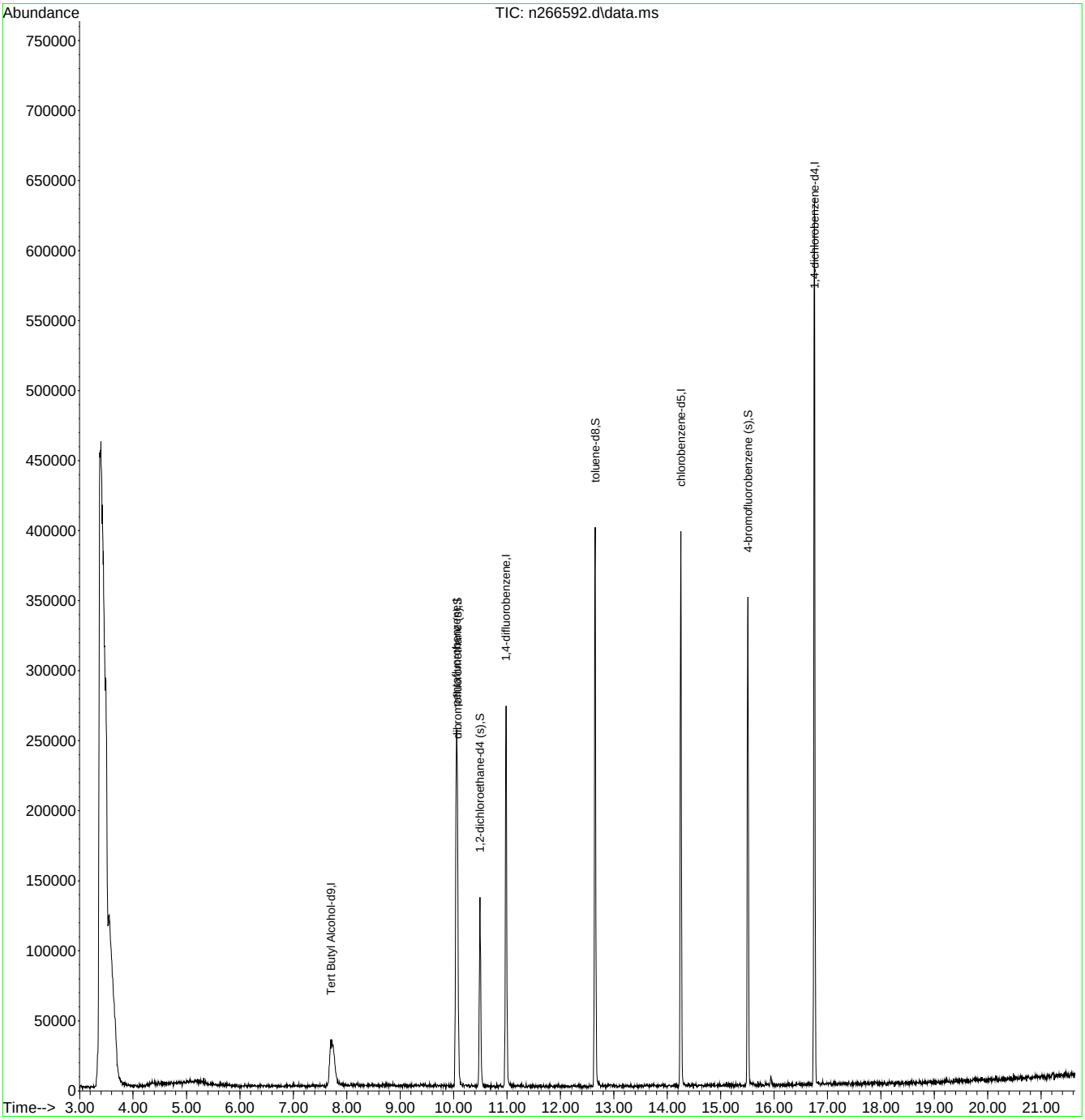
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.702	65	100191	300.00	ug/L	0.00
4) pentafluorobenzene	10.051	168	156026	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.982	114	203515	30.00	ug/L	0.00
74) chlorobenzene-d5	14.256	117	198016	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.756	152	151908	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.072	113	84018	34.64	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 115.47%			
54) 1,2-dichloroethane-d4 (s)	10.495	65	91624	36.61	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 122.03%#			
75) toluene-d8	12.650	98	240089	27.80	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.67%			
97) 4-bromofluorobenzene (s)	15.511	95	99850	28.38	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.60%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266592.d
Acq On : 13 Dec 2017 12:34 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS22984,VN11234,5,,,,1
ALS Vial : 30 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:16:00 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228715.d
Acq On : 13 Dec 2017 1:20 am
Operator : CHELSEAS
Sample : mb Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:18:55 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

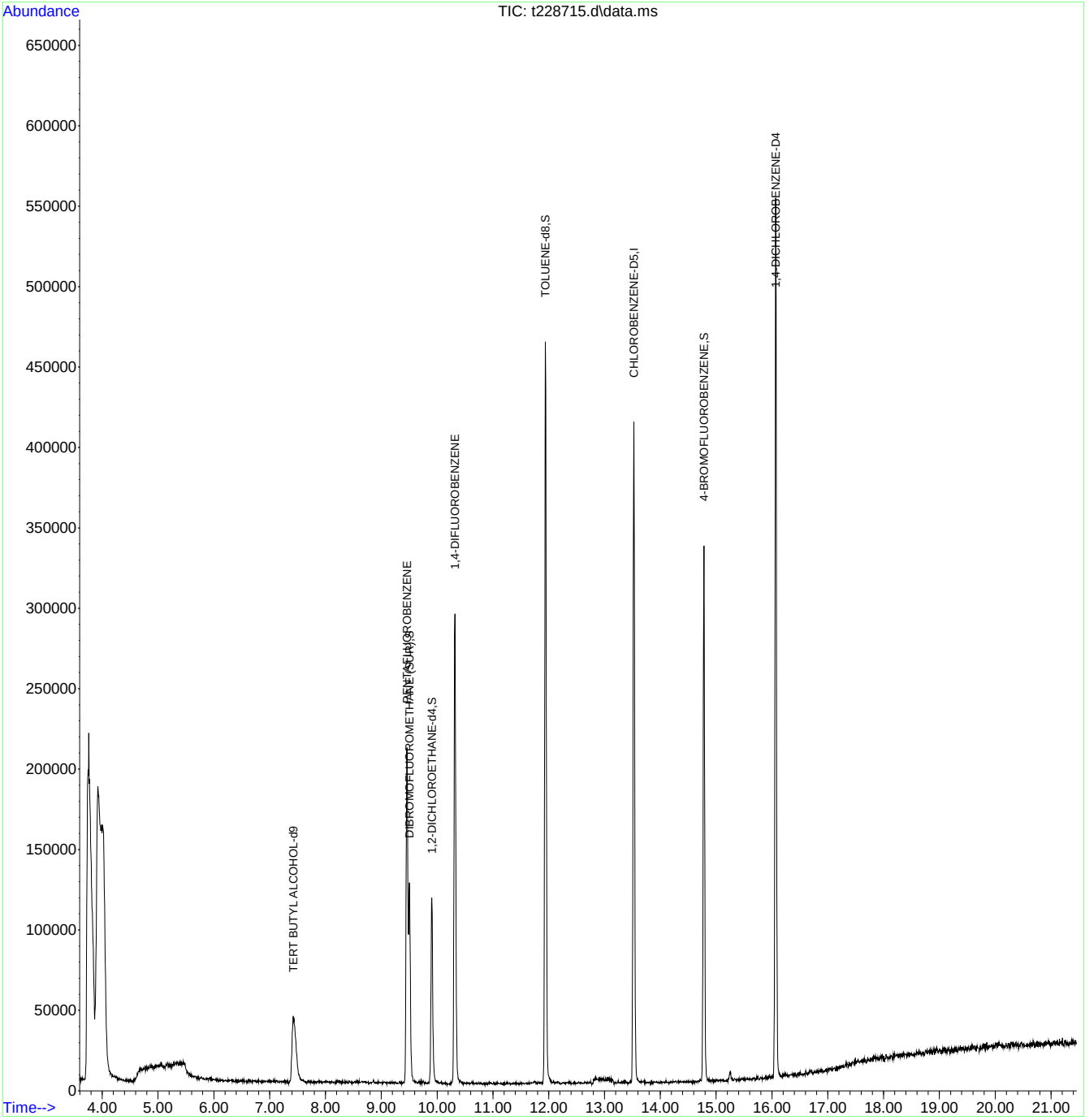
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.422	65	112284	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.462	168	167759	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.320	114	259117	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.526	117	254726	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.067	152	153042	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.504	113	80938	35.00	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 116.67%			
50) 1,2-DICHLOROETHANE-d4	9.906	65	84810	34.18	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.93%			
67) TOLUENE-d8	11.941	98	333585	30.71	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.37%			
90) 4-BROMOFLUOROBENZENE	14.781	174	103908	28.39	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.63%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228715.d
Acq On : 13 Dec 2017 1:20 am
Operator : CHELSEAS
Sample : mb Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:18:55 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



Quantitation Report (LSC Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266654.d
Acq On : 14 Dec 2017 10:00 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS23149,VN11237,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:38:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

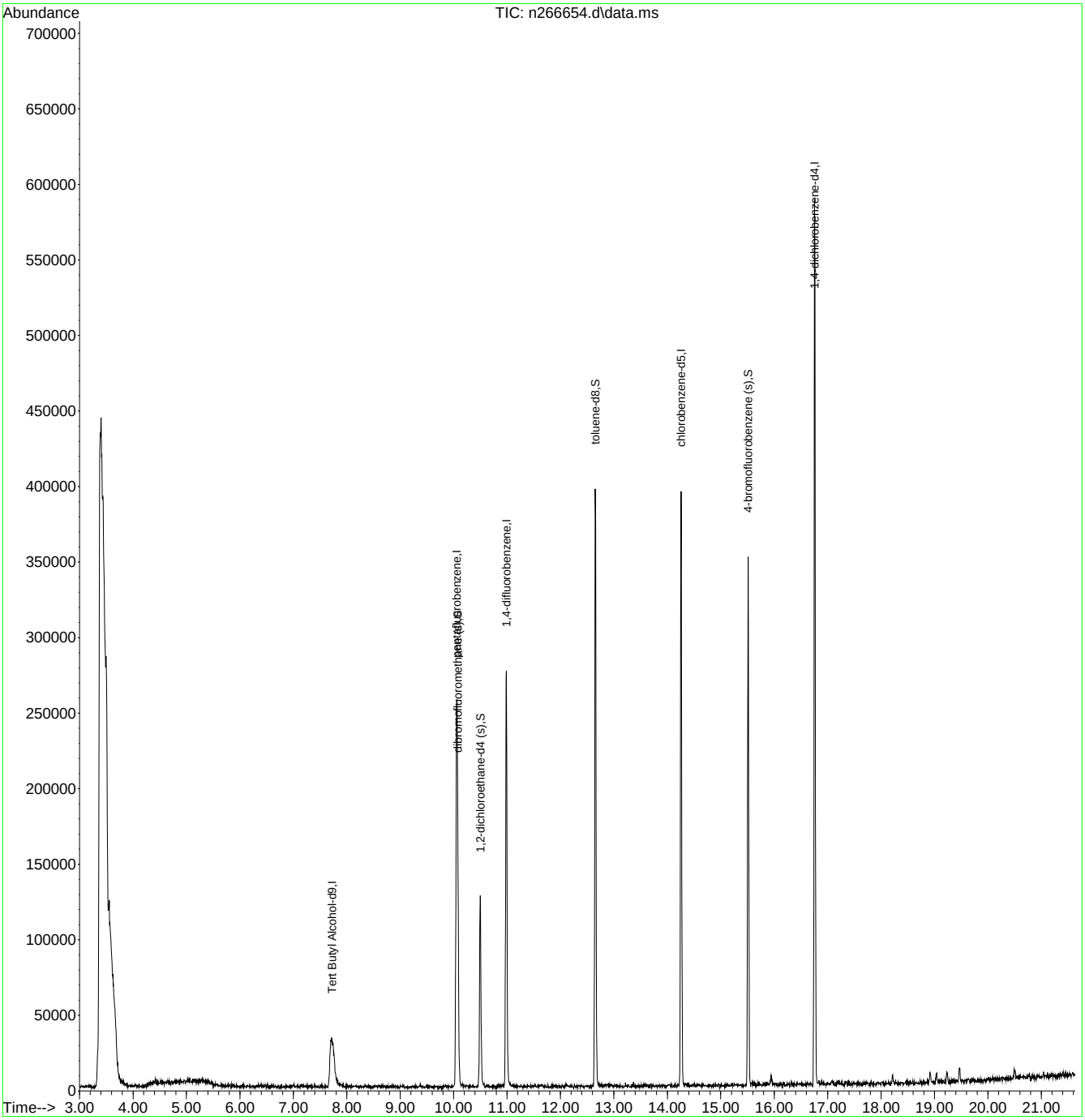
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.724	65	91381	300.00	ug/L	0.03
4) pentafluorobenzene	10.057	168	151192	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.988	114	206226	30.00	ug/L	0.00
74) chlorobenzene-d5	14.257	117	195969	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.757	152	136815	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.078	113	81496	34.67	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 115.57%			
54) 1,2-dichloroethane-d4 (s)	10.501	65	86881	34.26	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 114.20%			
75) toluene-d8	12.651	98	243586	28.50	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.00%			
97) 4-bromofluorobenzene (s)	15.512	95	99199	31.31	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.37%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (LSC Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266654.d
Acq On : 14 Dec 2017 10:00 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS23149,VN11237,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:38:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266698.d
Acq On : 15 Dec 2017 8:59 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS23129,VN11239,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:31:23 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

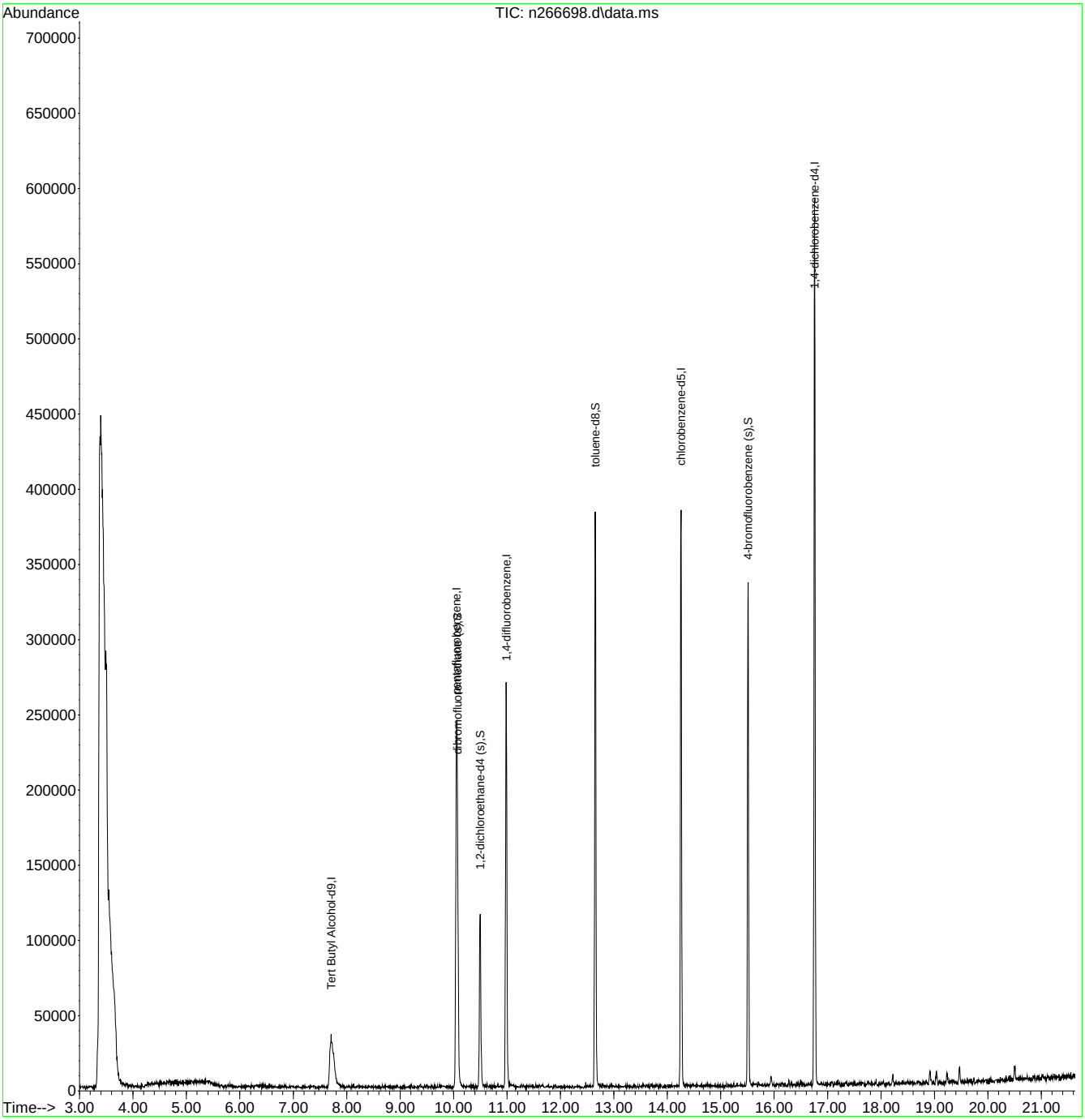
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.709	65	90831	300.00	ug/L	0.01
4) pentafluorobenzene	10.052	168	144468	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.988	114	200375	30.00	ug/L	0.00
74) chlorobenzene-d5	14.257	117	187348	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.757	152	139741	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.073	113	74614	33.22	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.73%			
54) 1,2-dichloroethane-d4 (s)	10.496	65	82881	33.63	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 112.10%			
75) toluene-d8	12.651	98	227899	27.89	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.97%			
97) 4-bromofluorobenzene (s)	15.507	95	99368	30.70	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.33%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266698.d
Acq On : 15 Dec 2017 8:59 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS23129,VN11239,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:31:23 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266725.d
Acq On : 15 Dec 2017 10:15 pm
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:57:59 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

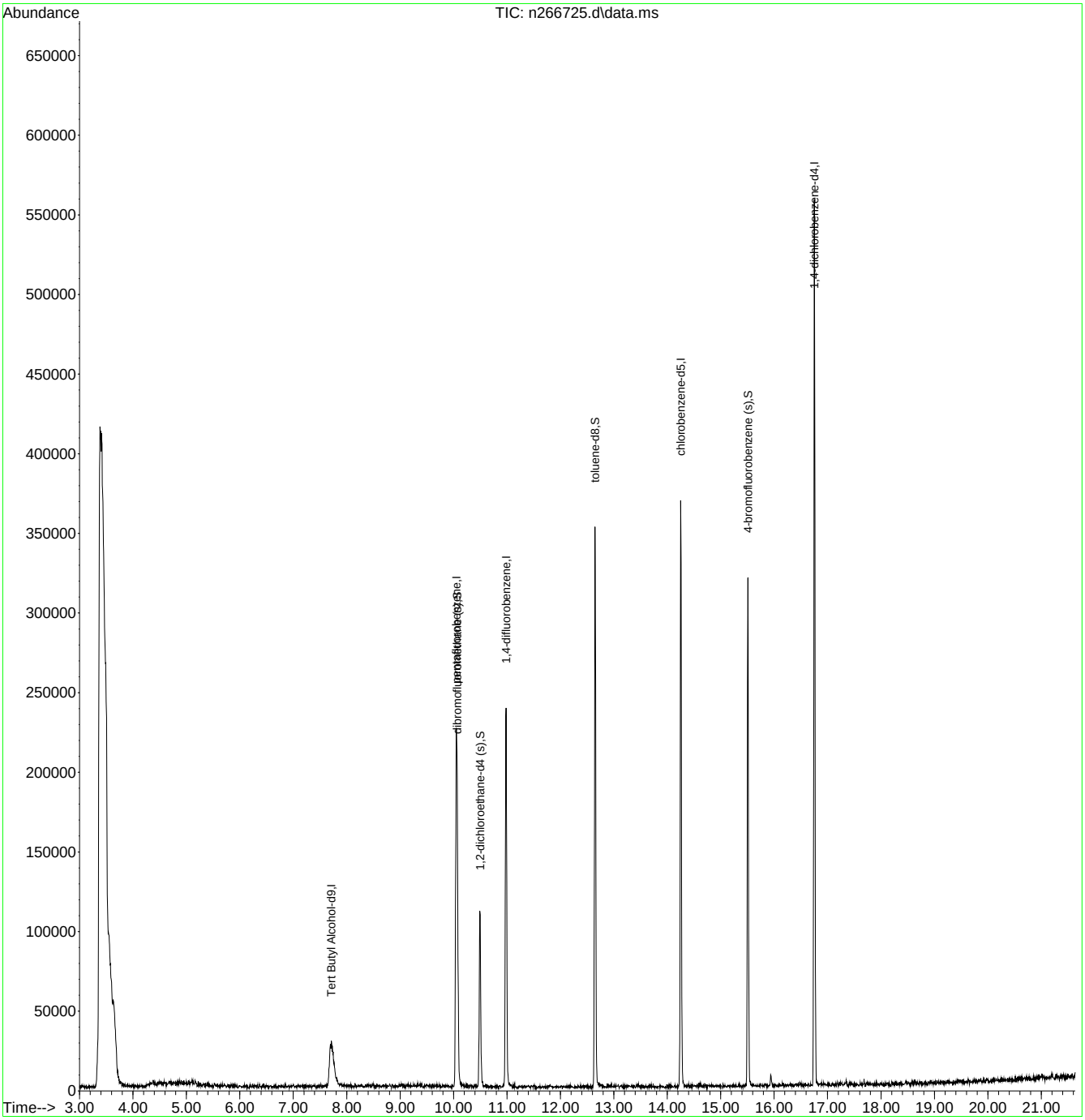
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.715	65	75864	300.00	ug/L	0.02
4) pentafluorobenzene	10.052	168	131918	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.983	114	177618	30.00	ug/L	0.00
74) chlorobenzene-d5	14.252	117	175220	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.752	152	128010	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.068	113	69856	34.06	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 113.53%			
54) 1,2-dichloroethane-d4 (s)	10.497	65	78246	35.82	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 119.40%			
75) toluene-d8	12.647	98	212237	27.77	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.57%			
97) 4-bromofluorobenzene (s)	15.507	95	87810	29.62	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.73%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266725.d
Acq On : 15 Dec 2017 10:15 pm
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:57:59 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (LSC Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266750.d
Acq On : 18 Dec 2017 10:19 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:30:59 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

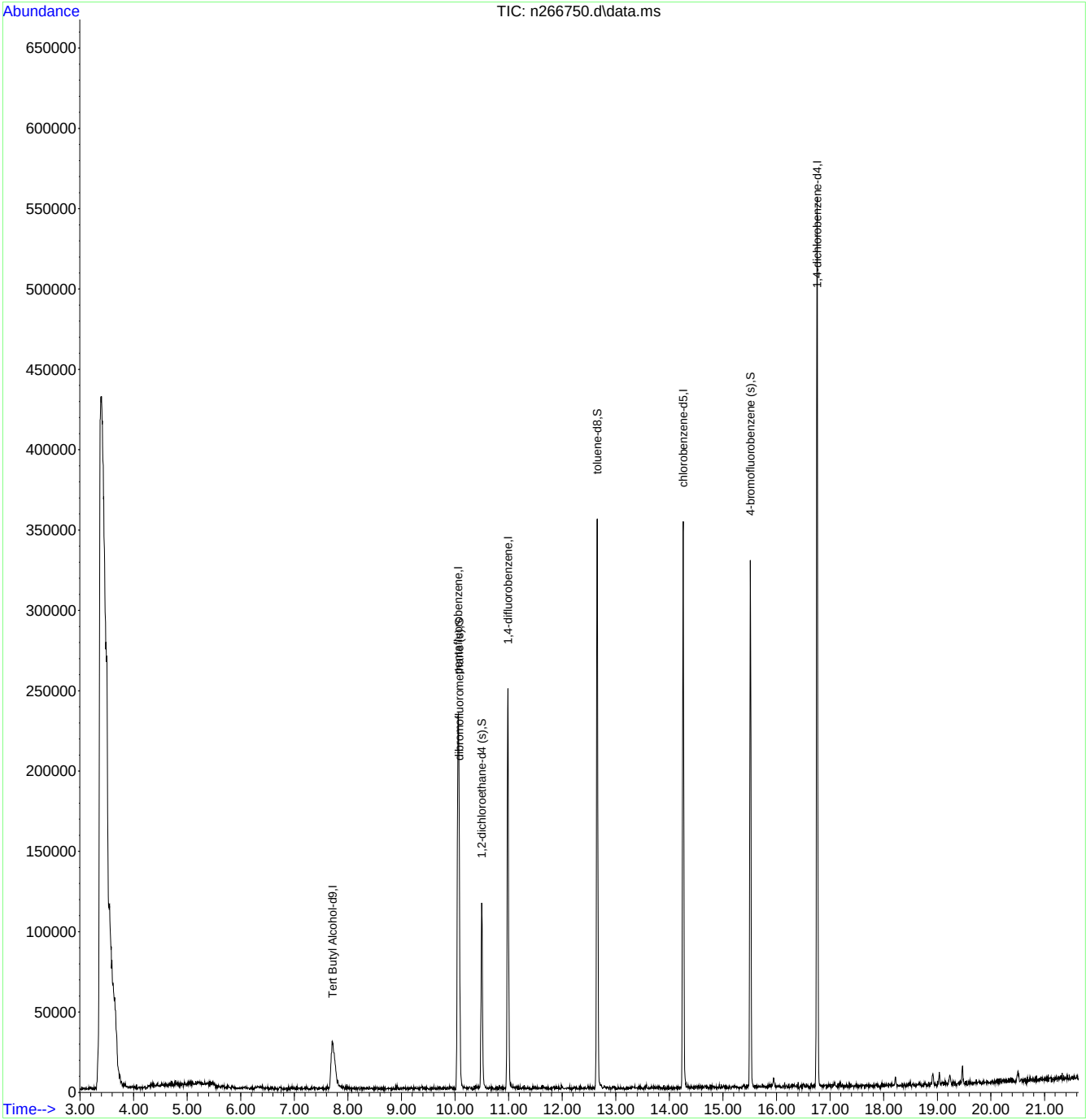
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.716	65	75667	300.00	ug/L	0.02
4) pentafluorobenzene	10.054	168	139529	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.985	114	187604	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	180877	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	128876	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	71832	33.12	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.40%			
54) 1,2-dichloroethane-d4 (s)	10.499	65	78893	34.19	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.97%			
75) toluene-d8	12.654	98	220083	27.89	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 92.97%			
97) 4-bromofluorobenzene (s)	15.509	95	92801	31.09	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.63%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (LSC Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266750.d
Acq On : 18 Dec 2017 10:19 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:30:59 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266799.d
Acq On : 19 Dec 2017 11:46 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:31:31 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

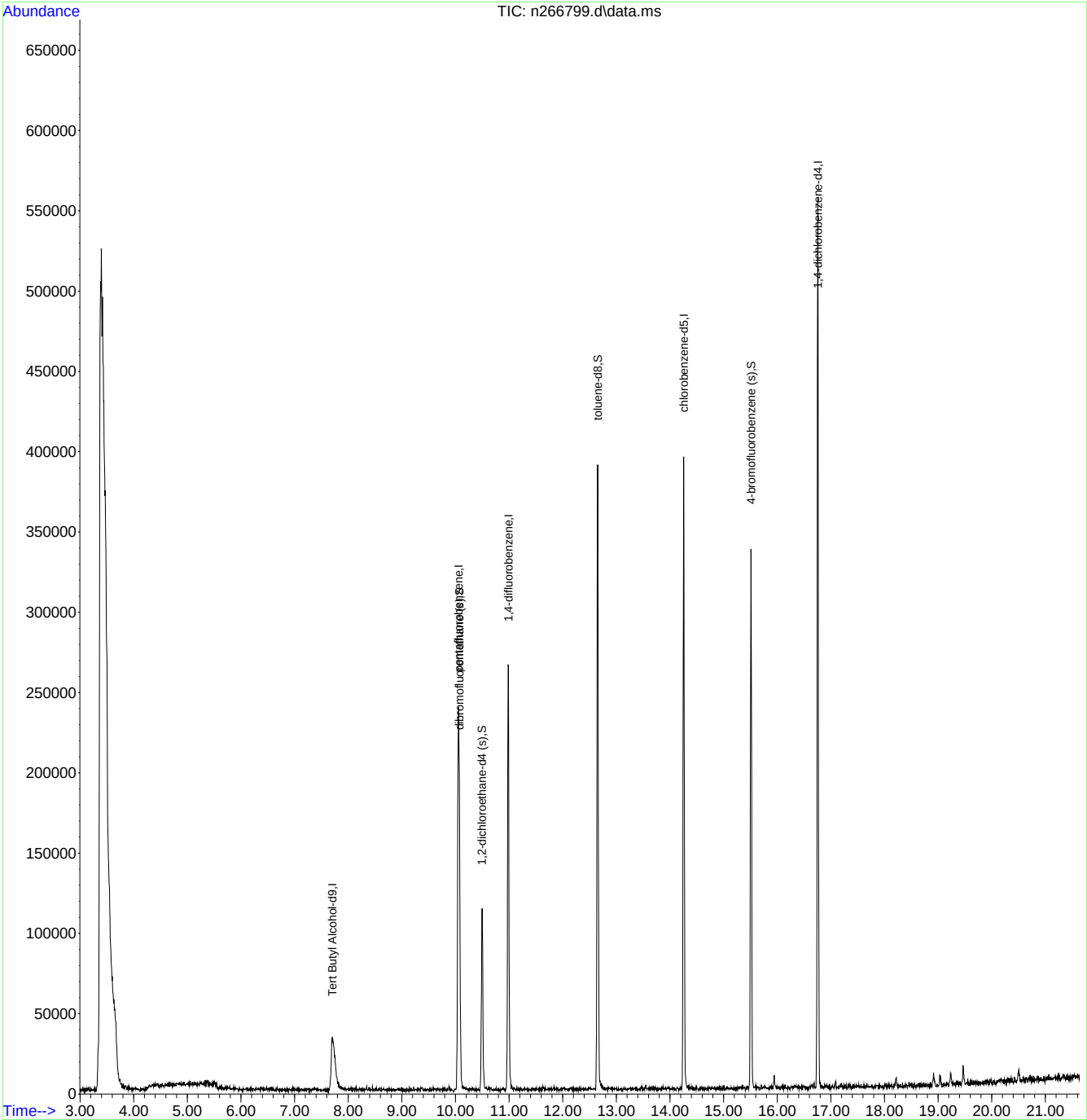
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.702	65	85056	300.00	ug/L	0.00
4) pentafluorobenzene	10.055	168	140117	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.986	114	195324	30.00	ug/L	0.00
74) chlorobenzene-d5	14.255	117	188544	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.755	152	127255	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.071	113	69467	31.89	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 106.30%			
54) 1,2-dichloroethane-d4 (s)	10.494	65	79172	32.96	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 109.87%			
75) toluene-d8	12.649	98	238010	28.94	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.47%			
97) 4-bromofluorobenzene (s)	15.510	95	97231	32.99	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.97%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266799.d
Acq On : 19 Dec 2017 11:46 am
Operator : CHELSEAS
Sample : mb Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:31:31 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266593.d
Acq On : 13 Dec 2017 1:03 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS22984,VN11234,5,,,,1
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:17:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.698	65	98913	300.00	ug/L	0.00
4) pentafluorobenzene	10.052	168	164854	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.978	114	220519	30.00	ug/L	0.00
74) chlorobenzene-d5	14.257	117	209656	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.757	152	162419	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.073	113	80771	31.52	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 105.07%			
54) 1,2-dichloroethane-d4 (s)	10.496	65	88499	32.63	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 108.77%			
75) toluene-d8	12.646	98	272363	29.78	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.27%			
97) 4-bromofluorobenzene (s)	15.507	95	113661	30.22	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.73%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.819	59	31681	94.55	ug/L	93
3) 1,4-dioxane	11.642	88	13910	498.52	ug/L	93
7) chlorodifluoromethane	4.011	51	76996	21.20	ug/L	95
8) dichlorodifluoromethane	4.001	85	97700	16.78	ug/L	93
9) chloromethane	4.325	50	71885	16.86	ug/L	88
10) vinyl chloride	4.618	62	85626	15.53	ug/L	98
11) 1,3-butadiene	4.681	54	3056	0.98	ug/L	92
12) bromomethane	5.313	94	61214	17.64	ug/L	93
13) chloroethane	5.543	64	54083	17.80	ug/L	84
14) trichlorofluoromethane	6.051	101	111431	18.01	ug/L	94
17) ethyl ether	6.516	59	34419	21.90	ug/L	93
18) acrolein	6.767	56	9029	19.42	ug/L	90
19) 1,1-dichloroethene	6.961	96	42596	15.81	ug/L	98
20) acetone	6.987	58	18725	64.12	ug/L	92
21) freon 113	6.977	101	72316	24.89	ug/L	86
23) iodomethane	7.222	142	91369	19.70	ug/L	98
24) carbon disulfide	7.364	76	182173	21.69	ug/L	95
25) methylene chloride	7.735	84	55385	21.50	ug/L	89
26) methyl acetate	7.479	43	31715	22.01	ug/L	82
27) methyl tert butyl ether	8.117	73	345953	44.62	ug/L	93
28) trans-1,2-dichloroethene	8.148	96	52530	20.68	ug/L	92
29) acrylonitrile	8.059	53	21424	24.84	ug/L	84
31) di-isopropyl ether	8.744	45	164715	23.26	ug/L	92
32) 1,1-dichloroethane	8.750	63	91439	22.95	ug/L	94
33) chloroprene	8.844	53	68808	22.18	ug/L	95
35) ethyl tert-butyl ether	9.220	59	162939	22.83	ug/L	99
36) 2-butanone	9.429	72	17534	76.47	ug/L #	42
38) 2,2-dichloropropane	9.508	77	83270	18.59	ug/L	97
39) cis-1,2-dichloroethene	9.482	96	55817	20.26	ug/L	91
40) methyl acrylate	9.524	85	5578	19.84	ug/L #	47
41) propionitrile	9.513	54	70852	246.69	ug/L	97
42) bromochloromethane	9.785	128	29069	22.14	ug/L	84
43) tetrahydrofuran	9.796	71	5610	21.30	ug/L #	80
44) chloroform	9.879	85	60019	21.58	ug/L	95
45) t-butyl formate	9.916	59	19689	28.25	ug/L	97
47) methacrylonitrile	9.712	67	15857	20.61	ug/L	79
48) 1,1,1-trichloroethane	10.125	97	104716	20.73	ug/L	95
49) cyclohexane	10.230	84	81726	17.26	ug/L #	56
50) 1,1-dichloropropene	10.298	75	63107	21.98	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266593.d
Acq On : 13 Dec 2017 1:03 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS22984,VN11234,5,,,,1
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:17:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) carbon tetrachloride	10.313	117	98341	21.96	ug/L		98
56) 2,2,4-trimethylpentane	10.648	57	158100	18.09	ug/L		96
57) benzene	10.543	78	185694	22.58	ug/L		85
58) tert-amyl methyl ether	10.638	73	164729	22.82	ug/L		90
59) 1,2-dichloroethane	10.585	62	64194	22.03	ug/L		95
62) trichloroethene	11.286	95	45329	21.60	ug/L		88
63) methyl methacrylate	11.563	69	46350	21.56	ug/L		84
64) 1,2-dichloropropane	11.584	63	50258	24.44	ug/L		91
65) methylcyclohexane	11.579	83	97747	19.05	ug/L		94
66) dibromomethane	11.694	93	28431	21.67	ug/L		91
67) bromodichloromethane	11.861	83	63949	22.21	ug/L		90
68) 2-nitropropane	12.076	41	16535	36.88	ug/L		89
69) 2-chloroethyl vinyl ether	12.118	63	106869	121.27	ug/L		99
70) epichlorohydrin	12.201	57	18758	101.25	ug/L		96
71) cis-1,3-dichloropropene	12.337	75	65611	20.78	ug/L		94
72) 4-methyl-2-pentanone	12.452	58	68850	95.40	ug/L		88
73) 3-methyl-1-butanol	12.463	55	49803	445.46	ug/L		97
76) toluene	12.724	92	110561	20.37	ug/L		89
77) ethyl methacrylate	12.939	69	45140	18.95	ug/L		88
78) trans-1,3-dichloropropene	12.939	75	63301	21.39	ug/L		92
79) 1,1,2-trichloroethane	13.169	83	33230	23.34	ug/L		95
80) tetrachloroethene	13.300	164	40435	18.52	ug/L		89
81) 2-hexanone	13.352	58	54418	79.83	ug/L		93
82) 1,3-dichloropropane	13.363	76	68342	22.48	ug/L		90
84) 3,3-dimethyl-1-butanol	13.551	57	52267	177.23	ug/L		92
85) dibromochloromethane	13.619	129	51809	22.17	ug/L		96
86) 1,2-dibromoethane	13.776	107	41967	22.48	ug/L		91
87) chlorobenzene	14.288	112	132984	21.81	ug/L		95
88) 1,1,1,2-tetrachloroethane	14.361	131	64154	20.41	ug/L		89
89) ethylbenzene	14.356	91	224530	22.30	ug/L		98
90) m,p-xylene	14.487	106	172850	39.61	ug/L	#	59
91) o-xylene	14.916	106	93376	20.71	ug/L		97
92) styrene	14.932	104	145406	22.66	ug/L		91
94) bromoform	15.177	173	40543	23.75	ug/L		98
95) isopropylbenzene	15.292	105	246880	20.95	ug/L		99
98) bromobenzene	15.700	156	67677	20.10	ug/L		97
99) 1,1,2,2-tetrachloroethane	15.601	83	66023	22.71	ug/L		93
100) trans-1,4-dichloro-2-b...	15.643	53	15920	21.68	ug/L	#	74
101) 1,2,3-trichloropropane	15.695	110	18592	19.36	ug/L		85
102) n-propylbenzene	15.737	120	68741	19.64	ug/L		88
103) 2-chlorotoluene	15.873	126	63383	19.66	ug/L		93
104) 4-chlorotoluene	15.999	126	61323	20.66	ug/L		95
105) 1,3,5-trimethylbenzene	15.910	105	245093	22.09	ug/L		97
106) tert-butylbenzene	16.270	134	49145	18.33	ug/L		94
107) 1,2,4-trimethylbenzene	16.323	105	260721	22.61	ug/L		98
108) sec-butylbenzene	16.501	105	319260	22.26	ug/L		99
109) 1,3-dichlorobenzene	16.678	146	155614	21.58	ug/L		99
110) p-isopropyltoluene	16.642	119	289606	22.44	ug/L		99
111) 1,4-dichlorobenzene	16.783	146	157798	21.30	ug/L		97
112) 1,2-dichlorobenzene	17.186	146	168170	21.32	ug/L		98
113) benzyl chloride	16.888	91	90475	12.79	ug/L		94
115) n-butylbenzene	17.086	92	144906	20.64	ug/L		96
116) hexachloroethane	17.494	201	57243	18.51	ug/L		95
117) 1,2-dibromo-3-chloropr...	18.017	157	20699	16.06	ug/L		94
118) Nitrobenzene	18.232	77	4974	12.69	ug/L	#	77
119) 1,3,5-trichlorobenzene	18.216	180	193631	21.32	ug/L		98
120) 1,2,4-trichlorobenzene	18.917	180	165513	18.35	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266593.d
Acq On : 13 Dec 2017 1:03 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS22984,VN11234,5,,,,1
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:17:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

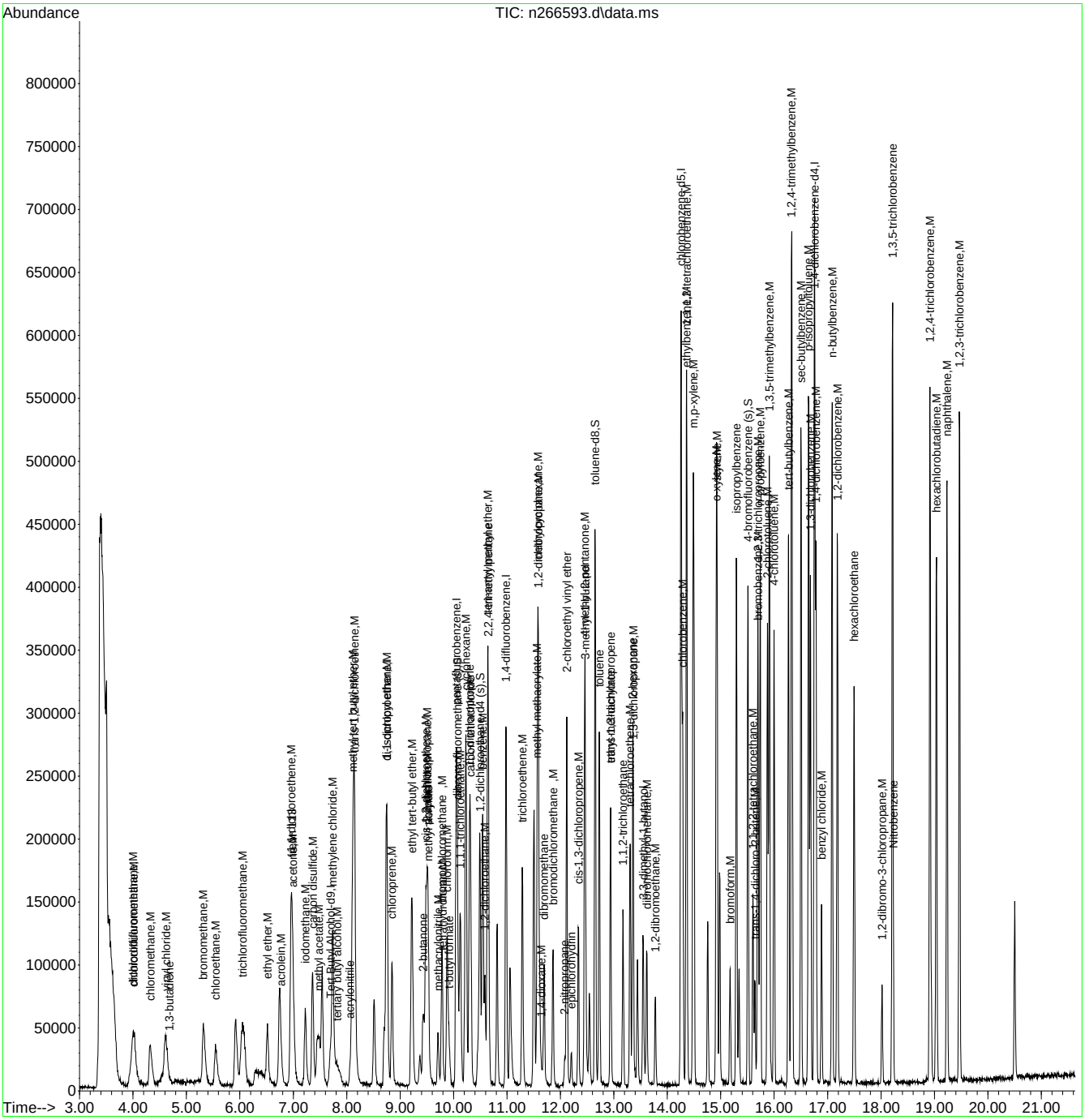
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) hexachlorobutadiene	19.037	225	87435	17.86	ug/L	98
122) naphthalene	19.236	128	340786	20.04	ug/L	99
123) 1,2,3-trichlorobenzene	19.466	180	163475	19.07	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266593.d
Acq On : 13 Dec 2017 1:03 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS22984,VN11234,5,,,,1
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:17:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228716.d
Acq On : 13 Dec 2017 1:50 am
Operator : CHELSEAS
Sample : bs Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:19:54 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) TERT BUTYL ALCOHOL-d9	7.437	65	113464	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.461	168	171540	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.319	114	268146	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.525	117	254469	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.067	152	152692	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.503	113	78578	33.23	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.77%				
50) 1,2-DICHLOROETHANE-d4	9.906	65	84837	33.04	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 110.13%				
67) TOLUENE-d8	11.945	98	343345	31.64	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 105.47%				
90) 4-BROMOFLUOROBENZENE	14.780	174	106853	29.26	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.53%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.526	59	39973	91.26	PPb		95
3) 1,4-DIOXANE	11.004	88	15020	424.00	PPb		82
5) CHLORODIFLUOROMETHANE	4.377	51	94761	14.91	PPB		95
6) DICHLORODIFLUOROMETHANE	4.372	85	93306	14.96	PPb		94
9) CHLOROMETHANE	4.696	50	104279	16.86	PPb		95
10) VINYL CHLORIDE	4.942	62	106360	17.04	PPb		98
11) BROMOMETHANE	5.565	96	61823	18.46	PPb		98
12) CHLOROETHANE	5.721	64	57094	20.03	PPb		97
13) VINYL BROMIDE	6.046	106	63701	24.56	PPB		98
14) TRICHLOROFLUOROMETHANE	6.145	101	81619	18.44	PPb		97
17) ETHYL ETHER	6.511	74	29129	21.93	PPB	#	80
18) 1,1-DICHLOROETHYLENE	6.898	61	81449	19.71	PPb		95
19) FREON 113	6.872	151	52374	18.86	PPb		95
20) ACROLEIN	6.726	56	10273	24.60	PPB		98
21) ACETONE	6.914	58	17436	86.47	PPb		82
22) CARBON DISULFIDE	7.275	76	199152	20.24	PPb		96
23) IODOMETHANE	7.149	142	90608	19.03	PPb		96
24) ACETONITRILE	7.280	41	75035	203.43	PPB		93
25) METHYL ACETATE	7.311	43	39498	20.56	PPB		97
26) METHYLENE CHLORIDE	7.505	84	62082	21.31	PPb		87
27) ACRYLONITRILE	7.777	53	21854	24.82	PPb		90
28) METHYL TERT BUTYL ETHER	7.819	73	387127	44.78	PPb		97
29) trans-1,2-DICHLOROETHY...	7.850	61	84614	22.16	PPb		92
30) HEXANE	8.143	57	51258	13.10	PPb		97
31) 1,1-DICHLOROETHANE	8.352	63	105430	22.20	PPb		97
32) VINYL ACETATE	8.321	86	8092	24.11	PPb	#	40
33) DI-ISOPROPYL ETHER	8.342	45	259908	24.09	PPb		96
34) ETHYL TERT BUTYL ETHER	8.760	59	218969	22.89	PPb		98
35) 2-BUTANONE	8.959	72	19842	87.44	PPb		97
36) cis-1,2-DICHLOROETHYLENE	9.006	96	60989	20.87	PPb		89
37) 2,2-DICHLOROPROPANE	9.037	77	77088	16.61	PPB		92
38) ETHYL ACETATE	8.975	45	8289	24.93	PPb	#	41
39) BROMOCHLOROMETHANE	9.283	128	26611	21.77	PPB		93
40) TETRAHYDROFURAN	9.330	42	20215	26.48	PPb		90
41) CHLOROFORM	9.325	83	91195	22.39	PPb		98
42) t-BUTYL FORMATE	9.388	59	41317	131.98	PPB		92
43) 1,1,1-TRICHLOROETHANE	9.602	97	92766	21.13	PPb		94
44) CYCLOHEXANE	9.691	84	90910	17.71	PPB		94
46) 1,1-DICHLOROPROPENE	9.754	75	70169	20.47	PPB		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228716.d
Acq On : 13 Dec 2017 1:50 am
Operator : CHELSEAS
Sample : bs Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:19:54 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
47)	CARBON TETRACHLORIDE	9.796	117	77260	19.93	PPB		96
48)	ISOPROPYL ACETATE	9.890	87	9771	20.89	PPB	#	83
51)	BENZENE	10.005	78	229071	19.09	PPb		98
52)	1,2-DICHLOROETHANE	9.989	62	65364	21.57	PPb		98
53)	2,2,4-TRIMETHYLPENTANE	10.021	57	200572	14.06	PPB		94
54)	TERT-AMYL METHYL ETHER	10.026	73	200568	19.80	PPb		99
55)	HEPTANE	10.167	57	38430	14.92	PPb		93
56)	TRICHLOROETHYLENE	10.653	95	51833	18.56	PPb		95
57)	1,2-DICHLOROPROPANE	10.905	63	67419	19.97	PPb		97
58)	DIBROMOMETHANE	11.046	93	30894	20.16	PPB		98
59)	METHYL METHACRYLATE	10.889	100	11154	19.50	PPB		93
60)	METHYLCYCLOHEXANE	10.905	83	104810	14.72	PPB		91
61)	BROMODICHLOROMETHANE	11.161	83	65254	18.91	PPb		94
62)	2-CHLOROETHYL VINYL ETHER	11.396	63	167492	146.35	PPb		97
63)	EPICHLOROHYDRIN	11.516	57	23977	104.92	PPb		94
64)	cis-1,3-DICHLOROPROPENE	11.626	75	82237	17.49	PPb		93
65)	4-METHYL-2-PENTANONE	11.726	58	94204	86.54	PPb		98
68)	TOLUENE	12.019	92	136325	18.89	PPB		98
69)	ETHYL METHACRYLATE	12.186	69	66064	19.91	PPB		94
70)	trans-1,3-DICHLOROPROPENE	12.186	75	69702	18.13	PPB		92
71)	1,1,2-TRICHLOROETHANE	12.406	83	38671	19.40	PPB		95
72)	TETRACHLOROETHYLENE	12.625	164	43353	17.60	PPb		93
73)	2-HEXANONE	12.594	58	81845	81.13	PPb		95
74)	1,3-DICHLOROPROPANE	12.604	76	78981	20.34	PPB		88
75)	BUTYL ACETATE	12.672	56	41077	23.27	PPb		87
76)	3,3-DIMETHYL-1-BUTANOL	12.751	57	71232	201.64	PPB		95
77)	DIBROMOCHLOROMETHANE	12.882	129	46273	18.28	PPb		97
78)	ETHYLENE DIBROMIDE	13.059	107	43984	20.36	PPb		92
79)	CHLOROBENZENE	13.556	112	150577	18.71	PPb		95
80)	1,1,1,2-TETRACHLOROETHANE	13.614	131	61794	18.89	PPB		94
81)	ETHYLBENZENE	13.619	91	267208	19.51	PPb		98
82)	m,p-XYLENE	13.739	106	199651	37.89	PPb		96
83)	o-XYLENE	14.194	91	233843	19.69	PPb		96
84)	STYRENE	14.194	104	168631	19.63	PPb		99
86)	BROMOFORM	14.466	173	29755	16.83	PPb		94
87)	CUMENE	14.571	105	293966	19.37	PPb		98
88)	cis-1,4-DICHLORO-2-BUTENE	14.618	88	10161	11.64	PPB		90
91)	1,1,2,2-TETRACHLOROETHANE	14.864	83	70328	19.17	PPB		96
92)	trans-1,4-DICHLORO-2-B...	15.021	53	2031	2.63	PPB		92
93)	1,2,3-TRICHLOROPROPANE	14.958	110	15392	20.25	PPB		91
94)	N-PROPYLBENZENE	15.021	91	344844	19.56	PPB		97
95)	BROMOBENZENE	15.005	156	65661	17.94	PPB		96
96)	2-CHLOROTOLUENE	15.178	126	68735	18.66	PPB		92
97)	4-CHLOROTOLUENE	15.287	91	199535	19.13	PPB		94
98)	1,3,5-TRIMETHYLBENZENE	15.183	105	258437	20.02	PPB		97
99)	TERT-BUTYLBENZENE	15.575	119	212873	17.90	PPB		93
100)	1,2,4-TRIMETHYLBENZENE	15.617	105	269187	20.14	PPB		96
101)	SEC-BUTYLBENZENE	15.810	105	352597	18.41	PPB		98
102)	P-ISOPROPYLTOLUENE	15.941	119	284877	18.79	PPB		97
103)	1,3-DICHLOROBENZENE	16.004	146	139027	18.32	PPb		95
104)	1,4-DICHLOROBENZENE	16.093	146	141846	18.13	PPb		99
105)	N-BUTYLBENZENE	16.396	134	69711	17.71	PPB		81
106)	1,2-DICHLOROBENZENE	16.527	146	143802	18.00	PPb		95
107)	HEXACHLOROETHANE	16.830	203	29095	16.23	PPB		88
108)	1,2-DIBROMO-3-CHLOROPR...	17.353	157	13923	16.69	PPB		81
109)	HEXACHLOROBUTADIENE	18.405	225	57914	14.24	PPB		96
110)	1,3,5-TRICHLOROBENZENE	17.573	180	143133	17.85	PPB		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228716.d
Acq On : 13 Dec 2017 1:50 am
Operator : CHELSEAS
Sample : bs Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:19:54 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

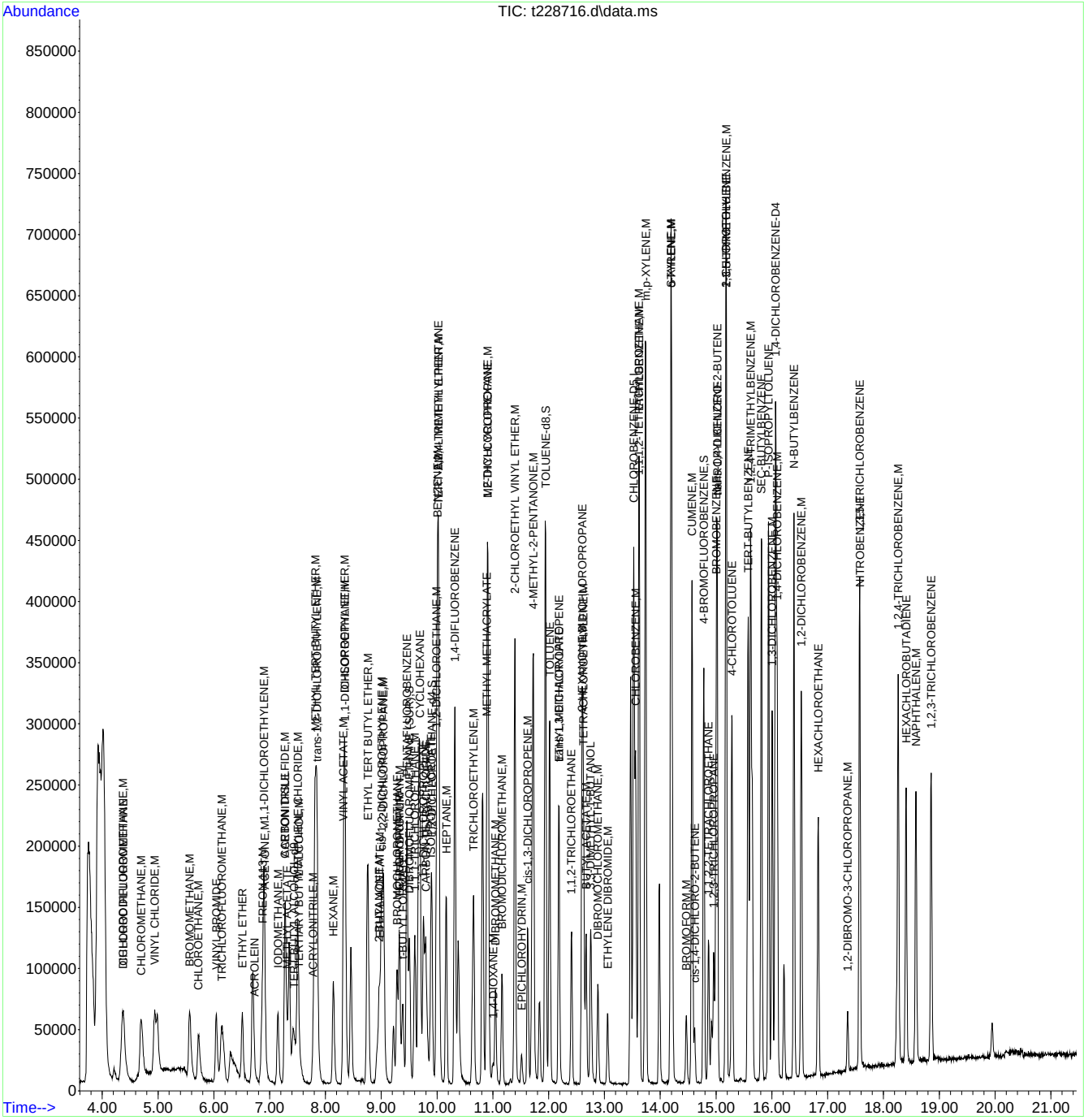
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
111) NITROBENZENE	17.578	77	4115	14.62	PPB	#	51
112) 1,2,4-TRICHLOROBENZENE	18.263	180	118177	16.41	PPB		95
113) 1,2,3-TRICHLOROBENZENE	18.854	180	92427	14.77	PPB		98
114) NAPHTHALENE	18.582	128	197706	15.65	PPb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228716.d
Acq On : 13 Dec 2017 1:50 am
Operator : CHELSEAS
Sample : bs Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:19:54 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266655.d
Acq On : 14 Dec 2017 10:29 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:39:07 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.744	65	103314	300.00	ug/L		0.05
4) pentafluorobenzene	10.051	168	165916	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.987	114	226983	30.00	ug/L		0.00
74) chlorobenzene-d5	14.256	117	213183	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.756	152	158370	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.077	113	82703	32.06	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 106.87%				
54) 1,2-dichloroethane-d4 (s)	10.495	65	89370	32.01	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 106.70%				
75) toluene-d8	12.650	98	272649	29.32	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.73%				
97) 4-bromofluorobenzene (s)	15.511	95	115257	31.42	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.73%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.870	59	29753	85.01	ug/L		92
3) 1,4-dioxane	11.641	88	14566	499.79	ug/L		77
7) chlorodifluoromethane	4.036	51	71683	19.61	ug/L		95
8) dichlorodifluoromethane	4.015	85	95437	16.29	ug/L		97
9) chloromethane	4.329	50	74940	17.46	ug/L		87
10) vinyl chloride	4.627	62	93926	16.93	ug/L		98
11) 1,3-butadiene	4.690	54	5362	1.71	ug/L	#	82
12) bromomethane	5.328	94	63952	18.32	ug/L		93
13) chloroethane	5.553	64	55498	18.15	ug/L		90
14) trichlorofluoromethane	6.050	101	110353	17.72	ug/L		92
17) ethyl ether	6.520	59	33678	21.29	ug/L		88
18) acrolein	6.771	56	10102	21.59	ug/L		81
19) 1,1-dichloroethene	6.960	96	42223	15.57	ug/L		95
20) acetone	6.986	58	15905	54.11	ug/L		87
21) freon 113	6.970	101	67990	23.25	ug/L	#	72
23) iodomethane	7.232	142	91958	19.70	ug/L		95
24) carbon disulfide	7.362	76	186554	22.07	ug/L		97
25) methylene chloride	7.749	84	55012	21.22	ug/L		99
26) methyl acetate	7.488	43	30449	20.99	ug/L		78
27) methyl tert butyl ether	8.126	73	349760	44.83	ug/L		95
28) trans-1,2-dichloroethene	8.147	96	49059	19.19	ug/L		94
29) acrylonitrile	8.063	53	21415	24.67	ug/L		86
31) di-isopropyl ether	8.748	45	161378	22.64	ug/L		99
32) 1,1-dichloroethane	8.754	63	88268	22.01	ug/L		99
33) chloroprene	8.842	53	64330	20.61	ug/L		99
35) ethyl tert-butyl ether	9.219	59	162272	22.59	ug/L		98
36) 2-butanone	9.423	72	18680	80.94	ug/L	#	85
38) 2,2-dichloropropane	9.507	77	107685	23.89	ug/L		93
39) cis-1,2-dichloroethene	9.481	96	55319	19.95	ug/L		88
40) methyl acrylate	9.528	85	5677	20.06	ug/L	#	63
41) propionitrile	9.517	54	66801	231.10	ug/L		98
42) bromochloromethane	9.789	128	28042	21.22	ug/L		85
43) tetrahydrofuran	9.789	71	4885	18.42	ug/L		87
44) chloroform	9.878	85	59975	21.43	ug/L		89
45) t-butyl formate	9.909	59	18434	26.28	ug/L		83
47) methacrylonitrile	9.711	67	15024	19.40	ug/L	#	71
48) 1,1,1-trichloroethane	10.129	97	106256	20.91	ug/L		96
49) cyclohexane	10.228	84	87402	18.34	ug/L	#	73
50) 1,1-dichloropropene	10.296	75	61438	21.26	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266655.d
Acq On : 14 Dec 2017 10:29 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:39:07 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) carbon tetrachloride	10.317	117	94865	21.05	ug/L		93
56) 2,2,4-trimethylpentane	10.647	57	165589	18.41	ug/L		95
57) benzene	10.547	78	185979	21.97	ug/L		94
58) tert-amyl methyl ether	10.642	73	155408	20.92	ug/L		96
59) 1,2-dichloroethane	10.589	62	65276	21.77	ug/L		90
62) trichloroethene	11.285	95	47597	22.03	ug/L		83
63) methyl methacrylate	11.567	69	44694	20.20	ug/L	#	64
64) 1,2-dichloropropane	11.588	63	48728	23.02	ug/L		91
65) methylcyclohexane	11.578	83	92467	17.51	ug/L		98
66) dibromomethane	11.693	93	29182	21.61	ug/L		89
67) bromodichloromethane	11.860	83	64211	21.67	ug/L		91
68) 2-nitropropane	12.085	41	14812	32.09	ug/L		98
69) 2-chloroethyl vinyl ether	12.117	63	104297	114.98	ug/L		98
70) epichlorohydrin	12.205	57	22033	115.54	ug/L		94
71) cis-1,3-dichloropropene	12.336	75	67239	20.69	ug/L		95
72) 4-methyl-2-pentanone	12.457	58	63397	85.34	ug/L		95
73) 3-methyl-1-butanol	12.467	55	46796	406.64	ug/L		93
76) toluene	12.728	92	107165	19.42	ug/L		98
77) ethyl methacrylate	12.938	69	44941	18.55	ug/L		98
78) trans-1,3-dichloropropene	12.938	75	62234	20.68	ug/L		96
79) 1,1,2-trichloroethane	13.168	83	31948	22.07	ug/L		90
80) tetrachloroethene	13.304	164	42951	19.35	ug/L		92
81) 2-hexanone	13.351	58	52764	76.12	ug/L		95
82) 1,3-dichloropropane	13.361	76	63934	20.68	ug/L		97
84) 3,3-dimethyl-1-butanol	13.550	57	51863	172.95	ug/L		94
85) dibromochloromethane	13.618	129	48509	20.41	ug/L		97
86) 1,2-dibromoethane	13.775	107	38412	20.23	ug/L		98
87) chlorobenzene	14.287	112	128973	20.80	ug/L		98
88) 1,1,1,2-tetrachloroethane	14.360	131	62256	19.48	ug/L		90
89) ethylbenzene	14.355	91	216349	21.13	ug/L		98
90) m,p-xylene	14.486	106	165944	37.40	ug/L	#	54
91) o-xylene	14.915	106	90388	19.72	ug/L		100
92) styrene	14.936	104	139024	21.31	ug/L		97
94) bromoform	15.176	173	36801	21.20	ug/L		88
95) isopropylbenzene	15.296	105	248655	20.75	ug/L		98
98) bromobenzene	15.699	156	64716	19.71	ug/L		94
99) 1,1,2,2-tetrachloroethane	15.605	83	58105	20.50	ug/L		91
100) trans-1,4-dichloro-2-b...	15.636	53	15395	21.50	ug/L		84
101) 1,2,3-trichloropropane	15.689	110	18444	19.70	ug/L		98
102) n-propylbenzene	15.736	120	69150	20.27	ug/L		99
103) 2-chlorotoluene	15.877	126	63683	20.25	ug/L		100
104) 4-chlorotoluene	15.997	126	63111	21.81	ug/L		91
105) 1,3,5-trimethylbenzene	15.908	105	238042	22.00	ug/L		98
106) tert-butylbenzene	16.269	134	48781	18.66	ug/L		90
107) 1,2,4-trimethylbenzene	16.322	105	249203	22.16	ug/L		99
108) sec-butylbenzene	16.499	105	308648	22.07	ug/L		99
109) 1,3-dichlorobenzene	16.677	146	147262	20.95	ug/L		96
110) p-isopropyltoluene	16.646	119	275400	21.88	ug/L		98
111) 1,4-dichlorobenzene	16.782	146	151611	20.99	ug/L		96
112) 1,2-dichlorobenzene	17.185	146	159944	20.80	ug/L		99
113) benzyl chloride	16.886	91	122789	17.81	ug/L		98
115) n-butylbenzene	17.085	92	144420	21.10	ug/L		95
116) hexachloroethane	17.493	201	58060	19.26	ug/L		87
117) 1,2-dibromo-3-chloropr...	18.021	157	19814	15.76	ug/L		95
118) Nitrobenzene	18.231	77	4658	12.19	ug/L	#	76
119) 1,3,5-trichlorobenzene	18.215	180	187402	21.17	ug/L		93
120) 1,2,4-trichlorobenzene	18.916	180	162233	18.45	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266655.d
Acq On : 14 Dec 2017 10:29 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:39:07 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

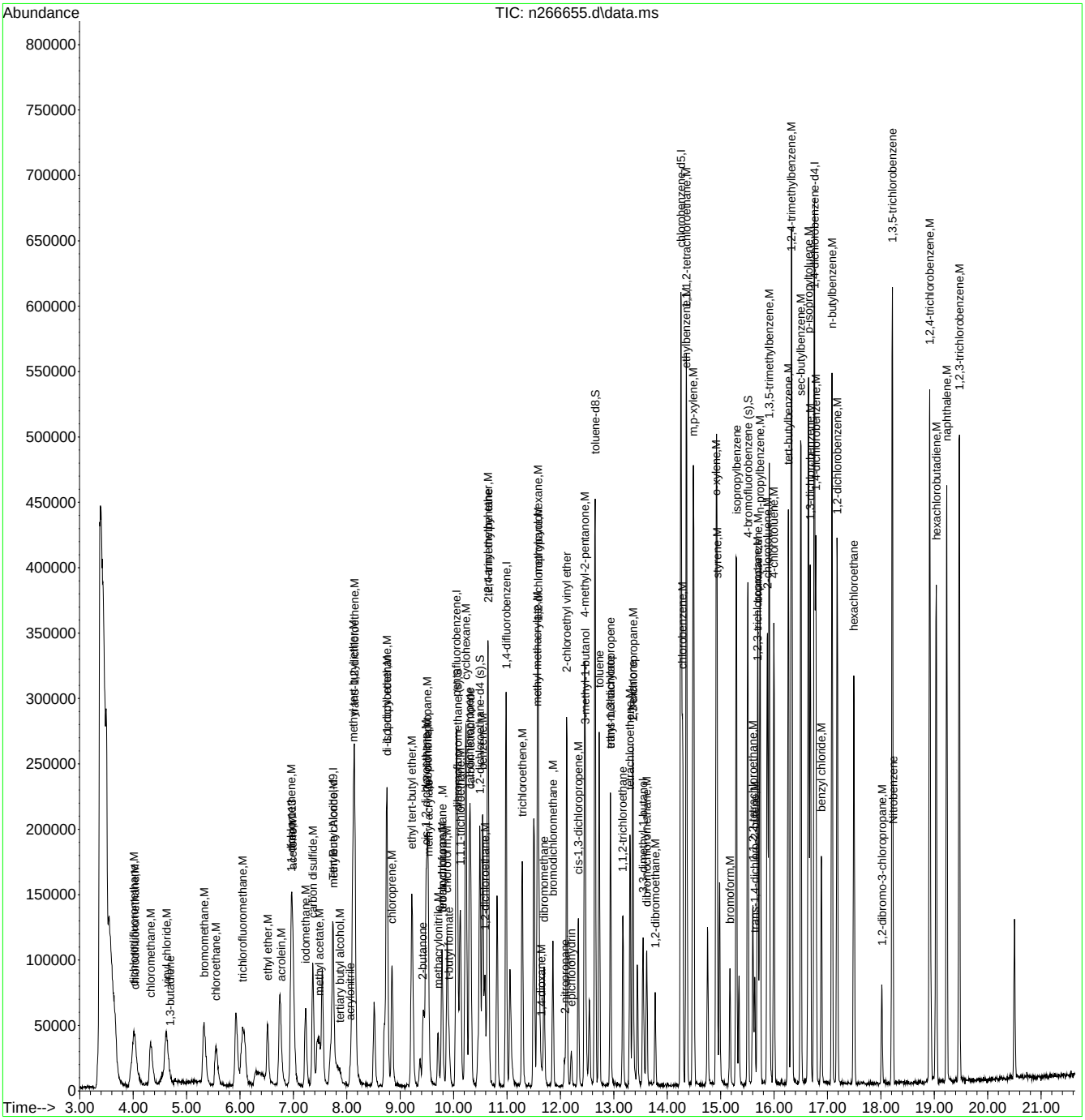
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) hexachlorobutadiene	19.036	225	83418	17.48	ug/L	98
122) naphthalene	19.235	128	320950	19.35	ug/L	99
123) 1,2,3-trichlorobenzene	19.470	180	152692	18.27	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266655.d
Acq On : 14 Dec 2017 10:29 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:39:07 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266700.d
Acq On : 15 Dec 2017 9:58 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:41:00 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.698	65	83884	300.00	ug/L		0.00
4) pentafluorobenzene	10.047	168	148847	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.983	114	212472	30.00	ug/L		0.00
74) chlorobenzene-d5	14.252	117	203622	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.752	152	151814	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.068	113	74586	32.23	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 107.43%				
54) 1,2-dichloroethane-d4 (s)	10.491	65	85815	32.84	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 109.47%				
75) toluene-d8	12.646	98	258151	29.06	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.87%				
97) 4-bromofluorobenzene (s)	15.507	95	111797	31.80	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 106.00%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.824	59	31242	109.94	ug/L		93
3) 1,4-dioxane	11.626	88	12278	518.87	ug/L		81
7) chlorodifluoromethane	4.022	51	76942	23.46	ug/L		89
8) dichlorodifluoromethane	3.980	85	110169	20.96	ug/L		88
9) chloromethane	4.335	50	81937	21.28	ug/L		89
10) vinyl chloride	4.618	62	96547	19.40	ug/L		97
11) 1,3-butadiene	4.681	54	6982	2.48	ug/L	#	75
12) bromomethane	5.324	94	63456	20.26	ug/L		89
13) chloroethane	5.549	64	52609	19.18	ug/L		93
14) trichlorofluoromethane	6.067	101	117919	21.11	ug/L		98
17) ethyl ether	6.516	59	31598	22.27	ug/L		85
18) acrolein	6.767	56	8529	20.32	ug/L		94
19) 1,1-dichloroethene	6.956	96	43904	18.05	ug/L		88
20) acetone	6.992	58	25572	96.98	ug/L	#	80
21) freon 113	6.971	101	77503	29.54	ug/L		83
23) iodomethane	7.222	142	90457	21.60	ug/L		92
24) carbon disulfide	7.358	76	180051	23.74	ug/L		96
25) methylene chloride	7.740	84	56972	24.49	ug/L		95
26) methyl acetate	7.489	43	28604	21.98	ug/L		93
27) methyl tert butyl ether	8.117	73	335849	47.98	ug/L		91
28) trans-1,2-dichloroethene	8.138	96	46538	20.29	ug/L		88
29) acrylonitrile	8.070	53	19421	24.94	ug/L		87
31) di-isopropyl ether	8.744	45	153757	24.05	ug/L		97
32) 1,1-dichloroethane	8.750	63	86426	24.03	ug/L		98
33) chloroprene	8.844	53	66290	23.67	ug/L		88
35) ethyl tert-butyl ether	9.215	59	157832	24.49	ug/L		98
36) 2-butanone	9.419	72	19275	93.10	ug/L		89
38) 2,2-dichloropropane	9.508	77	104212	25.77	ug/L		98
39) cis-1,2-dichloroethene	9.477	96	52335	21.04	ug/L		94
40) methyl acrylate	9.529	85	5545	21.84	ug/L	#	59
41) propionitrile	9.513	54	59643	229.99	ug/L		95
42) bromochloromethane	9.780	128	25911	21.86	ug/L	#	86
43) tetrahydrofuran	9.790	71	4180	17.57	ug/L	#	54
44) chloroform	9.874	85	56805	22.63	ug/L		98
45) t-butyl formate	9.911	59	20316	32.29	ug/L		87
47) methacrylonitrile	9.707	67	15100	21.74	ug/L	#	70
48) 1,1,1-trichloroethane	10.125	97	105096	23.05	ug/L		98
49) cyclohexane	10.225	84	90950	21.27	ug/L		80
50) 1,1-dichloropropene	10.293	75	60770	23.44	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266700.d
Acq On : 15 Dec 2017 9:58 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:41:00 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) carbon tetrachloride	10.313	117	96103	23.77	ug/L		96
56) 2,2,4-trimethylpentane	10.643	57	194148	23.05	ug/L		92
57) benzene	10.544	78	183756	23.20	ug/L		92
58) tert-amyl methyl ether	10.638	73	154481	22.21	ug/L		91
59) 1,2-dichloroethane	10.585	62	63467	22.61	ug/L		86
62) trichloroethene	11.281	95	46044	22.77	ug/L		91
63) methyl methacrylate	11.569	69	45630	22.03	ug/L	#	64
64) 1,2-dichloropropane	11.584	63	45861	23.14	ug/L		91
65) methylcyclohexane	11.579	83	102536	20.74	ug/L		94
66) dibromomethane	11.689	93	27489	21.75	ug/L		82
67) bromodichloromethane	11.856	83	62507	22.53	ug/L		87
68) 2-nitropropane	12.081	41	14215	32.90	ug/L		68
69) 2-chloroethyl vinyl ether	12.118	63	107568	126.69	ug/L		98
70) epichlorohydrin	12.201	57	18244	102.21	ug/L		94
71) cis-1,3-dichloropropene	12.332	75	67148	22.08	ug/L		98
72) 4-methyl-2-pentanone	12.453	58	59355	85.35	ug/L		91
73) 3-methyl-1-butanol	12.468	55	39533	366.99	ug/L		98
76) toluene	12.725	92	110410	20.95	ug/L		93
77) ethyl methacrylate	12.939	69	43555	18.83	ug/L		94
78) trans-1,3-dichloropropene	12.934	75	61702	21.47	ug/L		91
79) 1,1,2-trichloroethane	13.174	83	31278	22.62	ug/L		96
80) tetrachloroethene	13.305	164	44069	20.78	ug/L		91
81) 2-hexanone	13.352	58	58824	88.85	ug/L		98
82) 1,3-dichloropropane	13.357	76	63464	21.49	ug/L		96
84) 3,3-dimethyl-1-butanol	13.546	57	47148	164.61	ug/L		95
85) dibromochloromethane	13.614	129	47787	21.06	ug/L		87
86) 1,2-dibromoethane	13.776	107	37955	20.93	ug/L		95
87) chlorobenzene	14.288	112	131053	22.13	ug/L		98
88) 1,1,1,2-tetrachloroethane	14.362	131	62346	20.43	ug/L		92
89) ethylbenzene	14.356	91	216821	22.17	ug/L		99
90) m,p-xylene	14.487	106	168250	39.70	ug/L	#	53
91) o-xylene	14.916	106	88039	20.11	ug/L		93
92) styrene	14.932	104	140854	22.61	ug/L		94
94) bromoform	15.172	173	37387	22.55	ug/L		96
95) isopropylbenzene	15.293	105	243536	21.28	ug/L		98
98) bromobenzene	15.695	156	65363	20.77	ug/L		91
99) 1,1,2,2-tetrachloroethane	15.601	83	56415	20.76	ug/L		99
100) trans-1,4-dichloro-2-b...	15.638	53	14960	21.79	ug/L	#	75
101) 1,2,3-trichloropropane	15.690	110	17052	19.00	ug/L		96
102) n-propylbenzene	15.737	120	70889	21.67	ug/L		92
103) 2-chlorotoluene	15.873	126	63368	21.02	ug/L		87
104) 4-chlorotoluene	15.999	126	64052	23.09	ug/L		93
105) 1,3,5-trimethylbenzene	15.910	105	241097	23.24	ug/L		95
106) tert-butylbenzene	16.265	134	49694	19.83	ug/L	#	80
107) 1,2,4-trimethylbenzene	16.323	105	254453	23.60	ug/L		98
108) sec-butylbenzene	16.501	105	318025	23.72	ug/L		99
109) 1,3-dichlorobenzene	16.678	146	150996	22.41	ug/L		97
110) p-isopropyltoluene	16.642	119	292244	24.22	ug/L		98
111) 1,4-dichlorobenzene	16.778	146	153380	22.15	ug/L		97
112) 1,2-dichlorobenzene	17.181	146	159311	21.61	ug/L		96
113) benzyl chloride	16.882	91	122750	18.57	ug/L		100
115) n-butylbenzene	17.081	92	154146	23.49	ug/L		97
116) hexachloroethane	17.494	201	56565	19.57	ug/L		90
117) 1,2-dibromo-3-chloropr...	18.017	157	18681	15.50	ug/L		86
118) Nitrobenzene	18.232	77	4877	13.32	ug/L		91
119) 1,3,5-trichlorobenzene	18.211	180	194150	22.87	ug/L		99
120) 1,2,4-trichlorobenzene	18.917	180	163743	19.42	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266700.d
Acq On : 15 Dec 2017 9:58 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:41:00 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

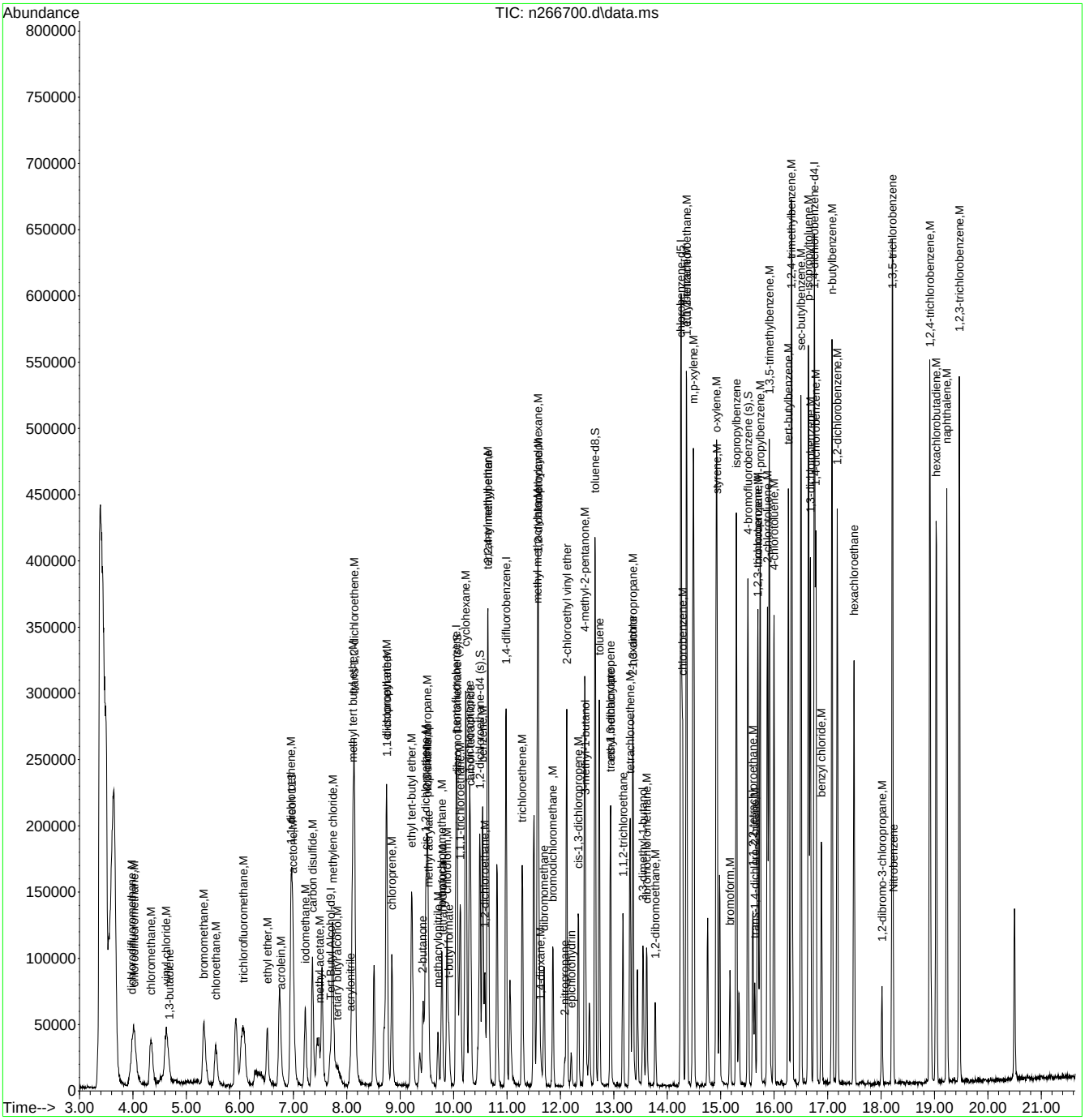
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) hexachlorobutadiene	19.032	225	93146	20.36	ug/L	99
122) naphthalene	19.231	128	318175	20.02	ug/L	98
123) 1,2,3-trichlorobenzene	19.466	180	155865	19.45	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266700.d
Acq On : 15 Dec 2017 9:58 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:41:00 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266726.d
Acq On : 15 Dec 2017 10:45 pm
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:59:12 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.701	65	79972	300.00	ug/L		0.00
4) pentafluorobenzene	10.050	168	142529	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.981	114	193197	30.00	ug/L		0.00
74) chlorobenzene-d5	14.255	117	189501	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.755	152	142384	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.071	113	68938	31.11	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.70%				
54) 1,2-dichloroethane-d4 (s)	10.494	65	77313	32.54	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 108.47%				
75) toluene-d8	12.649	98	232778	28.16	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 93.87%				
97) 4-bromofluorobenzene (s)	15.505	95	99300	30.11	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.37%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.843	59	26537	97.95	ug/L		80
3) 1,4-dioxane	11.635	88	12088	535.83	ug/L		92
7) chlorodifluoromethane	4.025	51	71160	22.66	ug/L		96
8) dichlorodifluoromethane	4.004	85	96463	19.17	ug/L		98
9) chloromethane	4.333	50	71205	19.31	ug/L		92
10) vinyl chloride	4.616	62	91388	19.17	ug/L		90
11) 1,3-butadiene	4.673	54	22167	8.21	ug/L	#	75
12) bromomethane	5.327	94	57050	19.02	ug/L		93
13) chloroethane	5.541	64	51096	19.45	ug/L		97
14) trichlorofluoromethane	6.054	101	106541	19.92	ug/L		95
17) ethyl ether	6.519	59	28159	20.72	ug/L		91
18) acrolein	6.765	56	6921	17.22	ug/L		99
19) 1,1-dichloroethene	6.959	96	40178	17.25	ug/L		95
20) acetone	6.990	58	14201	56.24	ug/L		96
21) freon 113	6.974	101	72682	28.93	ug/L		85
23) iodomethane	7.220	142	81878	20.42	ug/L		98
24) carbon disulfide	7.362	76	165886	22.84	ug/L		98
25) methylene chloride	7.738	84	49081	22.04	ug/L		92
26) methyl acetate	7.482	43	26031	20.89	ug/L		92
27) methyl tert butyl ether	8.115	73	295618	44.10	ug/L		95
28) trans-1,2-dichloroethene	8.141	96	43506	19.81	ug/L		88
29) acrylonitrile	8.062	53	17200	23.06	ug/L		93
31) di-isopropyl ether	8.747	45	133929	21.87	ug/L		97
32) 1,1-dichloroethane	8.753	63	77486	22.50	ug/L		94
33) chloroprene	8.842	53	57580	21.47	ug/L		87
35) ethyl tert-butyl ether	9.218	59	139401	22.59	ug/L		96
36) 2-butanone	9.427	72	16153	81.48	ug/L	#	72
38) 2,2-dichloropropane	9.501	77	80854	20.88	ug/L		97
39) cis-1,2-dichloroethene	9.480	96	47050	19.75	ug/L		91
40) methyl acrylate	9.527	85	4530	18.64	ug/L	#	55
41) propionitrile	9.511	54	53191	214.21	ug/L		94
42) bromochloromethane	9.783	128	23236	20.47	ug/L		79
43) tetrahydrofuran	9.793	71	4061	17.83	ug/L	#	18
44) chloroform	9.877	85	50564	21.03	ug/L		90
45) t-butyl formate	9.909	59	8378	13.91	ug/L		92
47) methacrylonitrile	9.710	67	13876	20.86	ug/L		90
48) 1,1,1-trichloroethane	10.128	97	99550	22.80	ug/L		98
49) cyclohexane	10.228	84	83008	20.27	ug/L	#	56
50) 1,1-dichloropropene	10.296	75	56061	22.58	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266726.d
Acq On : 15 Dec 2017 10:45 pm
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:59:12 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	carbon tetrachloride	10.311	117	86623	22.37	ug/L		97
56)	2,2,4-trimethylpentane	10.646	57	159099	20.78	ug/L		93
57)	benzene	10.541	78	163948	22.76	ug/L		98
58)	tert-amyl methyl ether	10.641	73	135132	21.37	ug/L		92
59)	1,2-dichloroethane	10.583	62	57574	22.56	ug/L		96
62)	trichloroethene	11.284	95	47443	25.80	ug/L		94
63)	methyl methacrylate	11.567	69	39974	21.22	ug/L	#	75
64)	1,2-dichloropropane	11.582	63	43466	24.12	ug/L		85
65)	methylcyclohexane	11.577	83	92670	20.61	ug/L		97
66)	dibromomethane	11.692	93	26824	23.34	ug/L		92
67)	bromodichloromethane	11.859	83	57137	22.65	ug/L		84
68)	2-nitropropane	12.084	41	13111	33.37	ug/L		64
69)	2-chloroethyl vinyl ether	12.116	63	90238	116.88	ug/L		98
70)	epichlorohydrin	12.199	57	16727	103.06	ug/L		97
71)	cis-1,3-dichloropropene	12.335	75	58040	20.99	ug/L		96
72)	4-methyl-2-pentanone	12.456	58	55634	87.99	ug/L		95
73)	3-methyl-1-butanol	12.466	55	40937	417.94	ug/L		94
76)	toluene	12.728	92	99937	20.37	ug/L		95
77)	ethyl methacrylate	12.937	69	38497	17.88	ug/L		96
78)	trans-1,3-dichloropropene	12.942	75	52654	19.68	ug/L		94
79)	1,1,2-trichloroethane	13.167	83	27700	21.53	ug/L		91
80)	tetrachloroethene	13.303	164	70901	35.93	ug/L		82
81)	2-hexanone	13.350	58	42475	68.94	ug/L		88
82)	1,3-dichloropropane	13.355	76	57227	20.83	ug/L		88
84)	3,3-dimethyl-1-butanol	13.544	57	43114	161.74	ug/L		90
85)	dibromochloromethane	13.611	129	44475	21.06	ug/L		98
86)	1,2-dibromoethane	13.768	107	35766	21.19	ug/L		96
87)	chlorobenzene	14.286	112	121590	22.06	ug/L		94
88)	1,1,1,2-tetrachloroethane	14.359	131	56625	19.93	ug/L		97
89)	ethylbenzene	14.359	91	202908	22.29	ug/L		99
90)	m,p-xylene	14.490	106	156490	39.68	ug/L	#	52
91)	o-xylene	14.919	106	82625	20.28	ug/L		90
92)	styrene	14.930	104	130650	22.53	ug/L		95
94)	bromoform	15.175	173	31214	20.23	ug/L		96
95)	isopropylbenzene	15.290	105	229122	21.51	ug/L		98
98)	bromobenzene	15.698	156	59946	20.31	ug/L		98
99)	1,1,2,2-tetrachloroethane	15.599	83	46045	18.07	ug/L		97
101)	1,2,3-trichloropropane	15.693	110	14967	17.78	ug/L		97
102)	n-propylbenzene	15.740	120	65578	21.38	ug/L	#	87
103)	2-chlorotoluene	15.876	126	57736	20.42	ug/L		95
104)	4-chlorotoluene	15.996	126	56597	21.75	ug/L		92
105)	1,3,5-trimethylbenzene	15.908	105	220547	22.67	ug/L		97
106)	tert-butylbenzene	16.268	134	44678	19.01	ug/L	#	80
107)	1,2,4-trimethylbenzene	16.321	105	228999	22.65	ug/L		99
108)	sec-butylbenzene	16.499	105	292459	23.26	ug/L		96
109)	1,3-dichlorobenzene	16.676	146	140376	22.21	ug/L		97
110)	p-isopropyltoluene	16.645	119	258221	22.82	ug/L		99
111)	1,4-dichlorobenzene	16.781	146	139167	21.43	ug/L		91
112)	1,2-dichlorobenzene	17.184	146	144318	20.88	ug/L		96
113)	benzyl chloride	16.886	91	74742	12.06	ug/L		98
115)	n-butylbenzene	17.084	92	128714	20.91	ug/L		94
116)	hexachloroethane	17.492	201	49808	18.37	ug/L		95
117)	1,2-dibromo-3-chloropr...	18.015	157	16550	14.65	ug/L		84
118)	Nitrobenzene	18.235	77	3912	11.39	ug/L	#	70
119)	1,3,5-trichlorobenzene	18.214	180	170205	21.38	ug/L		92
120)	1,2,4-trichlorobenzene	18.915	180	146178	18.49	ug/L		95
121)	hexachlorobutadiene	19.035	225	84446	19.68	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266726.d
Acq On : 15 Dec 2017 10:45 pm
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:59:12 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

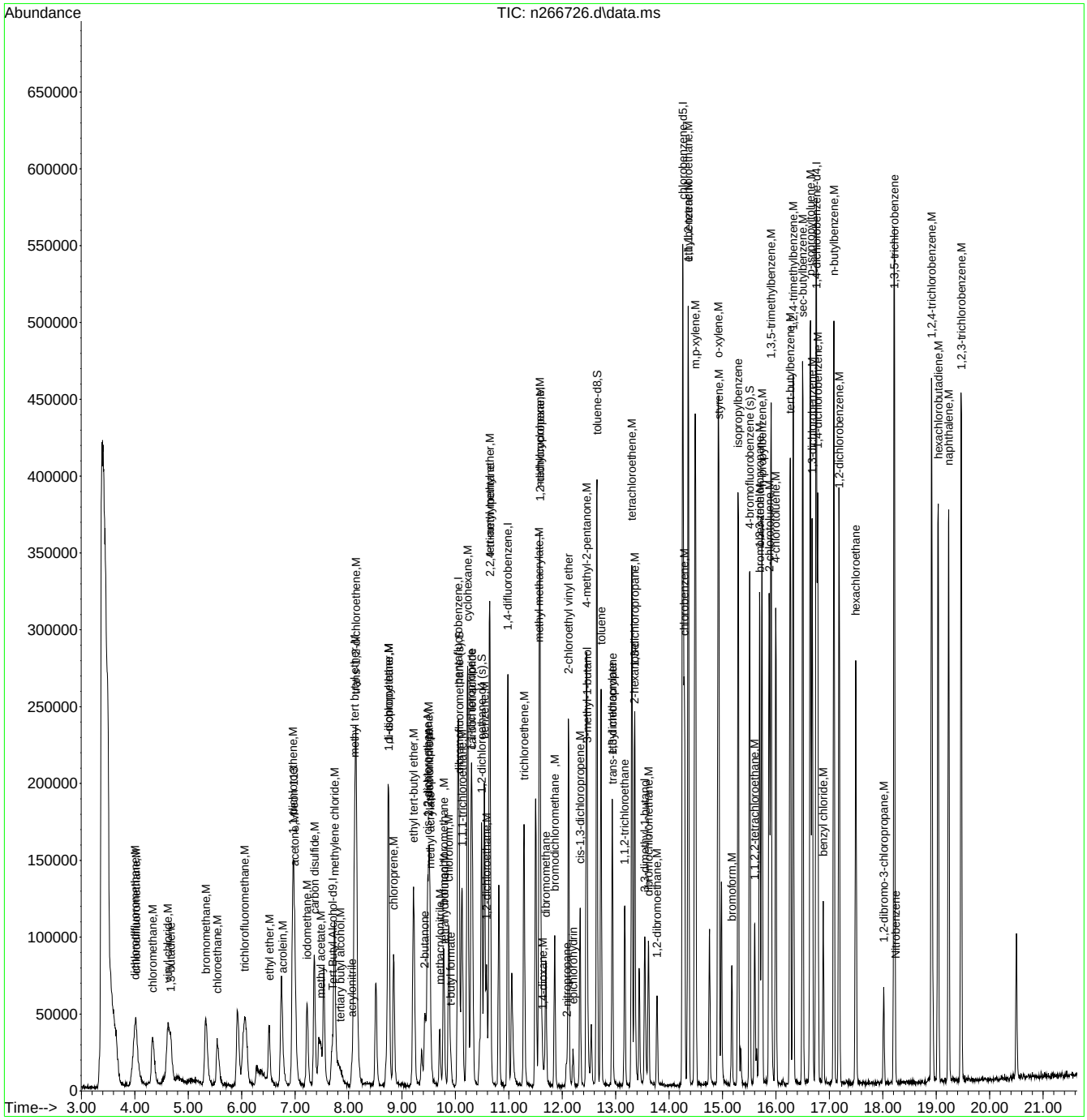
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
122) naphthalene	19.234	128	273794	18.36	ug/L	99
123) 1,2,3-trichlorobenzene	19.469	180	135943	18.09	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266726.d
Acq On : 15 Dec 2017 10:45 pm
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS22980,VN11240,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 03:59:12 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266751.d
Acq On : 18 Dec 2017 10:48 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:38:16 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.705	65	76785	300.00	ug/L		0.01
4) pentafluorobenzene	10.048	168	151368	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.979	114	199485	30.00	ug/L		0.00
74) chlorobenzene-d5	14.253	117	198367	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.753	152	145962	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.069	113	72267	30.71	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.37%				
54) 1,2-dichloroethane-d4 (s)	10.493	65	78349	31.93	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 106.43%				
75) toluene-d8	12.648	98	246121	28.44	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.80%				
97) 4-bromofluorobenzene (s)	15.509	95	102330	30.27	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.90%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.852	59	23808	91.53	ug/L		88
3) 1,4-dioxane	11.633	88	9897	456.92	ug/L		87
5) freon 143a	3.689	69	69894	15.29	ug/L		99
6) freon 142b	4.269	65	99084	23.59	ug/L		91
7) chlorodifluoromethane	4.018	51	66467	19.93	ug/L		91
8) dichlorodifluoromethane	4.002	85	76757	14.36	ug/L		91
9) chloromethane	4.342	50	63680	16.26	ug/L		95
10) vinyl chloride	4.630	62	75670	14.95	ug/L		97
11) 1,3-butadiene	4.677	54	14474	5.05	ug/L	#	68
12) bromomethane	5.326	94	51533	16.18	ug/L		88
13) chloroethane	5.550	64	42772	15.33	ug/L		95
14) trichlorofluoromethane	6.058	101	88306	15.54	ug/L		100
16) freon 141b	6.549	81	77810	18.92	ug/L		93
17) ethyl ether	6.513	59	27300	18.92	ug/L		94
18) acrolein	6.769	56	8127	19.04	ug/L	#	61
19) 1,1-dichloroethene	6.963	96	40027	16.18	ug/L		86
20) acetone	6.989	58	14104	52.60	ug/L	#	66
21) freon 113	6.984	101	63639	23.86	ug/L		82
23) iodomethane	7.219	142	79346	18.63	ug/L		92
24) carbon disulfide	7.360	76	159970	20.74	ug/L		98
25) methylene chloride	7.737	84	47211	19.96	ug/L		97
26) methyl acetate	7.480	43	25378	19.18	ug/L		94
27) methyl tert butyl ether	8.118	73	291630	40.97	ug/L		95
28) trans-1,2-dichloroethene	8.139	96	41332	17.72	ug/L		92
29) acrylonitrile	8.061	53	16395	20.70	ug/L		88
31) di-isopropyl ether	8.741	45	128112	19.70	ug/L		96
32) 1,1-dichloroethane	8.746	63	71842	19.64	ug/L		95
33) chloroprene	8.840	53	56279	19.76	ug/L		91
35) ethyl tert-butyl ether	9.212	59	137535	20.99	ug/L		92
36) 2-butanone	9.431	72	14528	69.00	ug/L	#	52
38) 2,2-dichloropropane	9.510	77	93371	22.70	ug/L		97
39) cis-1,2-dichloroethene	9.478	96	45592	18.02	ug/L		93
40) methyl acrylate	9.531	85	4586	17.77	ug/L	#	73
41) propionitrile	9.510	54	48237	182.91	ug/L		94
42) bromochloromethane	9.776	128	22211	18.43	ug/L		83
43) tetrahydrofuran	9.787	71	3931	16.25	ug/L	#	77
44) chloroform	9.876	85	47671	18.67	ug/L		97
45) t-butyl formate	9.918	59	17959	28.07	ug/L		76
47) methacrylonitrile	9.714	67	11542	16.34	ug/L	#	81

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266751.d
Acq On : 18 Dec 2017 10:48 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:38:16 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48) 1,1,1-trichloroethane	10.122	97	92315	19.91	ug/L		94
49) cyclohexane	10.226	84	75439	17.35	ug/L	#	72
50) 1,1-dichloropropene	10.294	75	53491	20.29	ug/L		91
51) carbon tetrachloride	10.315	117	83605	20.33	ug/L		98
56) 2,2,4-trimethylpentane	10.639	57	148564	18.79	ug/L		95
57) benzene	10.545	78	155767	20.94	ug/L		96
58) tert-amyl methyl ether	10.639	73	134499	20.60	ug/L		89
59) 1,2-dichloroethane	10.582	62	55748	21.15	ug/L		92
62) trichloroethene	11.283	95	37752	19.88	ug/L		95
64) 1,2-dichloropropane	11.581	63	42190	22.68	ug/L		93
65) methylcyclohexane	11.576	83	80519	17.35	ug/L		95
66) dibromomethane	11.691	93	24335	20.51	ug/L		86
67) bromodichloromethane	11.858	83	53259	20.45	ug/L		90
68) 2-nitropropane	12.083	41	13212	32.57	ug/L		83
69) 2-chloroethyl vinyl ether	12.120	63	86331	108.30	ug/L		96
70) epichlorohydrin	12.198	57	15131	90.29	ug/L		96
71) cis-1,3-dichloropropene	12.334	75	56608	19.82	ug/L		98
72) 4-methyl-2-pentanone	12.449	58	51452	78.81	ug/L		88
73) 3-methyl-1-butanol	12.465	55	34342	339.56	ug/L		90
76) toluene	12.726	92	94028	18.31	ug/L		95
77) ethyl methacrylate	12.935	69	37208	16.51	ug/L		87
78) trans-1,3-dichloropropene	12.941	75	54015	19.29	ug/L		89
79) 1,1,2-trichloroethane	13.171	83	26482	19.66	ug/L		93
80) tetrachloroethene	13.302	164	38396	18.59	ug/L		90
81) 2-hexanone	13.349	58	43207	66.99	ug/L		98
82) 1,3-dichloropropane	13.359	76	54862	19.07	ug/L		92
84) 3,3-dimethyl-1-butanol	13.547	57	37828	135.57	ug/L		90
85) dibromochloromethane	13.610	129	41734	18.88	ug/L		96
86) 1,2-dibromoethane	13.772	107	33315	18.86	ug/L		93
87) chlorobenzene	14.290	112	115405	20.01	ug/L		98
88) 1,1,1,2-tetrachloroethane	14.358	131	53818	18.10	ug/L		97
89) ethylbenzene	14.358	91	188436	19.78	ug/L		95
90) m,p-xylene	14.489	106	148366	35.94	ug/L	#	52
91) o-xylene	14.918	106	78456	18.39	ug/L		84
92) styrene	14.928	104	121318	19.99	ug/L		96
94) bromoform	15.174	173	30692	19.00	ug/L		97
95) isopropylbenzene	15.294	105	218797	19.62	ug/L		97
98) bromobenzene	15.697	156	59397	19.63	ug/L		98
99) 1,1,2,2-tetrachloroethane	15.603	83	50142	19.19	ug/L		96
100) trans-1,4-dichloro-2-b...	15.639	53	6834	10.36	ug/L	#	80
101) 1,2,3-trichloropropane	15.692	110	16027	18.57	ug/L		92
102) n-propylbenzene	15.739	120	63359	20.15	ug/L		99
103) 2-chlorotoluene	15.875	126	56731	19.58	ug/L		97
104) 4-chlorotoluene	15.995	126	53845	20.19	ug/L	#	82
105) 1,3,5-trimethylbenzene	15.906	105	213886	21.45	ug/L		99
106) tert-butylbenzene	16.267	134	41299	17.14	ug/L	#	75
107) 1,2,4-trimethylbenzene	16.319	105	226097	21.81	ug/L		98
108) sec-butylbenzene	16.502	105	279763	21.70	ug/L		98
109) 1,3-dichlorobenzene	16.680	146	132671	20.48	ug/L		98
110) p-isopropyltoluene	16.644	119	253435	21.85	ug/L		99
111) 1,4-dichlorobenzene	16.780	146	131360	19.73	ug/L		92
112) 1,2-dichlorobenzene	17.182	146	139647	19.70	ug/L		98
113) benzyl chloride	16.884	91	104878	16.50	ug/L		98
115) n-butylbenzene	17.083	92	136755	21.68	ug/L		95
116) hexachloroethane	17.491	201	46865	16.87	ug/L		95
117) 1,2-dibromo-3-chloropr...	18.019	157	16101	13.90	ug/L		86
118) Nitrobenzene	18.228	77	4969	14.11	ug/L		88

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266751.d
Acq On : 18 Dec 2017 10:48 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:38:16 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

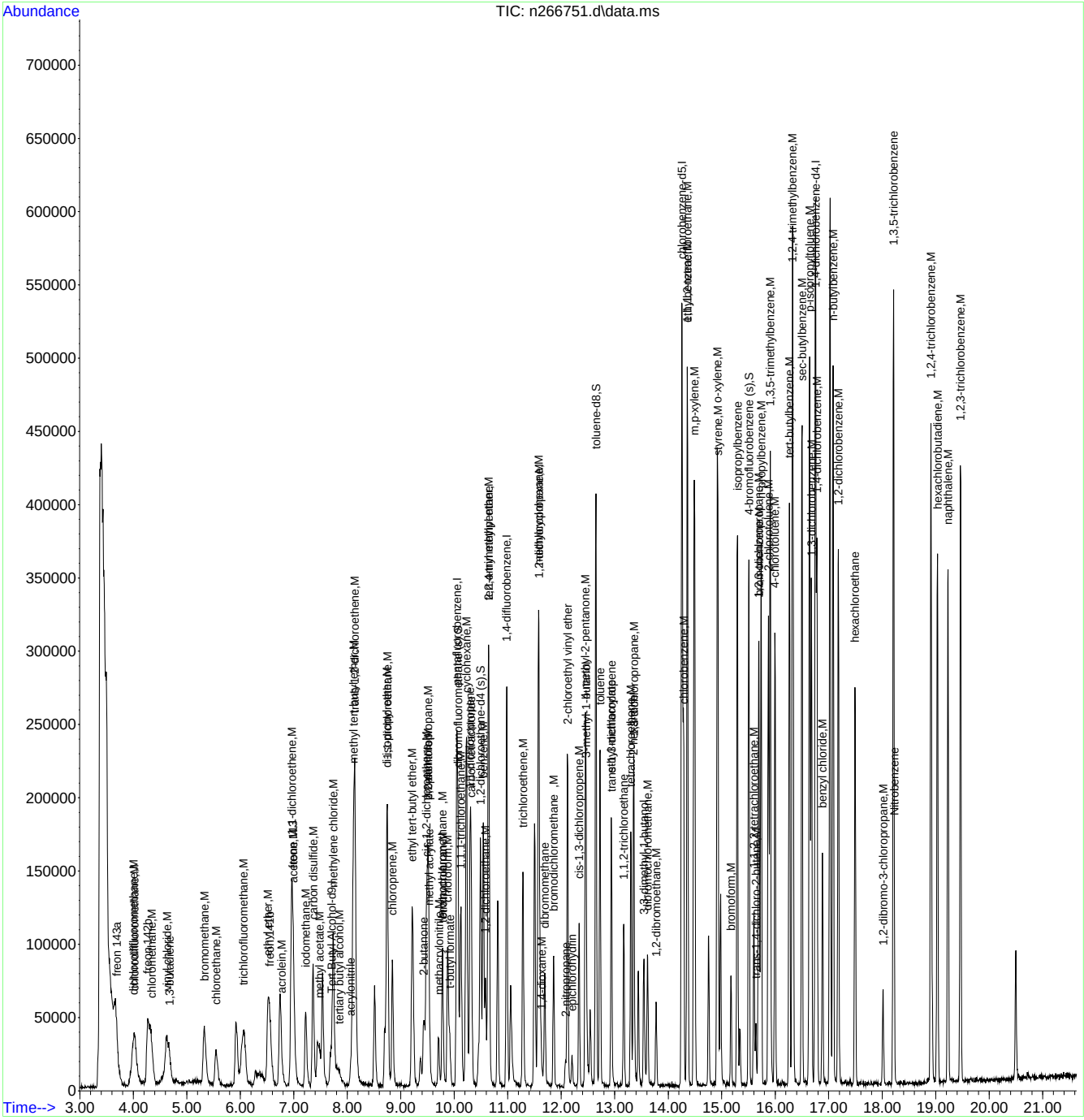
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
119) 1,3,5-trichlorobenzene	18.213	180	165397	20.27	ug/L	95
120) 1,2,4-trichlorobenzene	18.913	180	135292	16.69	ug/L	97
121) hexachlorobutadiene	19.034	225	78176	17.77	ug/L	90
122) naphthalene	19.233	128	255686	16.73	ug/L	99
123) 1,2,3-trichlorobenzene	19.463	180	126876	16.47	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266751.d
Acq On : 18 Dec 2017 10:48 am
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:38:16 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266800.d
Acq On : 19 Dec 2017 12:16 pm
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:35:38 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.716	65	88398	300.00	ug/L		0.02
4) pentafluorobenzene	10.049	168	150021	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.980	114	212985	30.00	ug/L		0.00
74) chlorobenzene-d5	14.254	117	204130	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.754	152	139375	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.075	113	76934	32.99	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.97%				
54) 1,2-dichloroethane-d4 (s)	10.493	65	85563	32.66	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 108.87%				
75) toluene-d8	12.648	98	264345	29.69	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.97%				
97) 4-bromofluorobenzene (s)	15.509	95	108144	33.50	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.67%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.842	59	27943	93.31	ug/L		93
3) 1,4-dioxane	11.644	88	11036	442.57	ug/L		97
7) chlorodifluoromethane	4.024	51	63404	19.18	ug/L		94
8) dichlorodifluoromethane	4.008	85	74537	14.07	ug/L		87
9) chloromethane	4.327	50	66344	17.10	ug/L		95
10) vinyl chloride	4.625	62	85161	16.97	ug/L		97
12) bromomethane	5.326	94	47893	15.17	ug/L		94
13) chloroethane	5.540	64	43478	15.73	ug/L		91
14) trichlorofluoromethane	6.079	101	88917	15.79	ug/L		95
17) ethyl ether	6.513	59	29714	20.77	ug/L		91
18) acrolein	6.775	56	9212	21.78	ug/L		98
19) 1,1-dichloroethene	6.968	96	37677	15.37	ug/L		95
20) acetone	6.994	58	13404	50.44	ug/L		99
21) freon 113	6.979	101	58601	22.16	ug/L		92
23) iodomethane	7.225	142	80492	19.07	ug/L		95
24) carbon disulfide	7.361	76	161867	21.17	ug/L		97
25) methylene chloride	7.737	84	48494	20.69	ug/L		94
26) methyl acetate	7.486	43	27674	21.10	ug/L		94
27) methyl tert butyl ether	8.119	73	298819	42.36	ug/L		94
28) trans-1,2-dichloroethene	8.145	96	41408	17.92	ug/L		96
29) acrylonitrile	8.061	53	17884	22.78	ug/L		96
31) di-isopropyl ether	8.746	45	150095	23.29	ug/L		99
32) 1,1-dichloroethane	8.746	63	74932	20.67	ug/L		96
33) chloroprene	8.846	53	59565	21.10	ug/L		98
35) ethyl tert-butyl ether	9.217	59	145472	22.40	ug/L		95
36) 2-butanone	9.432	72	14173	67.92	ug/L	#	56
38) 2,2-dichloropropane	9.510	77	84468	20.72	ug/L		96
39) cis-1,2-dichloroethene	9.473	96	46629	18.60	ug/L		94
40) methyl acrylate	9.531	85	5897	23.05	ug/L	#	82
41) propionitrile	9.510	54	54670	209.17	ug/L		86
42) bromochloromethane	9.782	128	21748	18.20	ug/L	#	78
43) tetrahydrofuran	9.793	71	3822	15.94	ug/L	#	61
44) chloroform	9.881	85	49962	19.74	ug/L		93
45) t-butyl formate	9.918	59	18073	28.50	ug/L		87
47) methacrylonitrile	9.709	67	14368	20.52	ug/L		89
48) 1,1,1-trichloroethane	10.127	97	85904	18.69	ug/L		93
49) cyclohexane	10.227	84	73185	16.98	ug/L	#	44
50) 1,1-dichloropropene	10.295	75	54557	20.88	ug/L		97
51) carbon tetrachloride	10.316	117	76332	18.73	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266800.d
Acq On : 19 Dec 2017 12:16 pm
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:35:38 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56) 2,2,4-trimethylpentane	10.640	57	163796	19.40	ug/L		95
57) benzene	10.546	78	163483	20.59	ug/L		98
58) tert-amyl methyl ether	10.640	73	140112	20.10	ug/L		94
59) 1,2-dichloroethane	10.582	62	55384	19.68	ug/L		90
62) trichloroethene	11.283	95	39554	19.51	ug/L		90
63) methyl methacrylate	11.566	69	38387	18.49	ug/L	#	74
64) 1,2-dichloropropane	11.586	63	41133	20.71	ug/L		93
65) methylcyclohexane	11.576	83	81645	16.47	ug/L		95
66) dibromomethane	11.696	93	23056	18.20	ug/L		95
67) bromodichloromethane	11.858	83	53232	19.14	ug/L		92
68) 2-nitropropane	12.083	41	13234	30.56	ug/L		98
69) 2-chloroethyl vinyl ether	12.120	63	94191	110.67	ug/L		96
70) epichlorohydrin	12.204	57	18351	102.56	ug/L		92
71) cis-1,3-dichloropropene	12.334	75	59523	19.52	ug/L		93
72) 4-methyl-2-pentanone	12.455	58	59769	85.74	ug/L		94
73) 3-methyl-1-butanol	12.465	55	38375	355.38	ug/L		97
76) toluene	12.727	92	94688	17.92	ug/L		99
77) ethyl methacrylate	12.941	69	41891	18.06	ug/L		97
78) trans-1,3-dichloropropene	12.941	75	54521	18.92	ug/L		91
79) 1,1,2-trichloroethane	13.171	83	28161	20.32	ug/L		95
80) tetrachloroethene	13.302	164	37856	17.81	ug/L		96
81) 2-hexanone	13.354	58	48979	73.80	ug/L		91
82) 1,3-dichloropropane	13.359	76	57830	19.54	ug/L		99
84) 3,3-dimethyl-1-butanol	13.548	57	45737	159.29	ug/L		88
85) dibromochloromethane	13.611	129	42439	18.65	ug/L		88
86) 1,2-dibromoethane	13.778	107	33620	18.49	ug/L		86
87) chlorobenzene	14.285	112	113169	19.06	ug/L		96
88) 1,1,1,2-tetrachloroethane	14.364	131	49607	16.21	ug/L		79
89) ethylbenzene	14.358	91	191950	19.58	ug/L		100
90) m,p-xylene	14.494	106	145752	34.31	ug/L	#	50
91) o-xylene	14.918	106	78647	17.92	ug/L		99
92) styrene	14.929	104	123466	19.77	ug/L		91
94) bromoform	15.174	173	28783	17.32	ug/L		96
95) isopropylbenzene	15.295	105	216677	18.88	ug/L		98
98) bromobenzene	15.697	156	53971	18.68	ug/L		89
99) 1,1,2,2-tetrachloroethane	15.603	83	48986	19.64	ug/L		92
100) trans-1,4-dichloro-2-b...	15.640	53	10843	17.21	ug/L		87
101) 1,2,3-trichloropropane	15.692	110	14228	17.26	ug/L		90
102) n-propylbenzene	15.739	120	56906	18.95	ug/L	#	66
103) 2-chlorotoluene	15.875	126	56931	20.57	ug/L		89
104) 4-chlorotoluene	16.001	126	52993	20.81	ug/L		93
105) 1,3,5-trimethylbenzene	15.907	105	206970	21.73	ug/L		96
106) tert-butylbenzene	16.267	134	40664	17.68	ug/L		87
107) 1,2,4-trimethylbenzene	16.325	105	215258	21.75	ug/L		98
108) sec-butylbenzene	16.503	105	270272	21.96	ug/L		98
109) 1,3-dichlorobenzene	16.681	146	121319	19.61	ug/L		98
110) p-isopropyltoluene	16.644	119	234782	21.20	ug/L		99
111) 1,4-dichlorobenzene	16.780	146	121349	19.09	ug/L		96
112) 1,2-dichlorobenzene	17.183	146	123774	18.29	ug/L		95
113) benzyl chloride	16.885	91	100778	16.61	ug/L		100
115) n-butylbenzene	17.083	92	130358	21.64	ug/L		92
116) hexachloroethane	17.497	201	44175	16.65	ug/L		91
117) 1,2-dibromo-3-chloropr...	18.025	157	15768	14.25	ug/L		89
118) Nitrobenzene	18.229	77	3905	11.61	ug/L	#	60
119) 1,3,5-trichlorobenzene	18.213	180	145860	18.72	ug/L		96
120) 1,2,4-trichlorobenzene	18.914	180	121949	15.76	ug/L		99
121) hexachlorobutadiene	19.034	225	65367	15.56	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266800.d
Acq On : 19 Dec 2017 12:16 pm
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:35:38 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

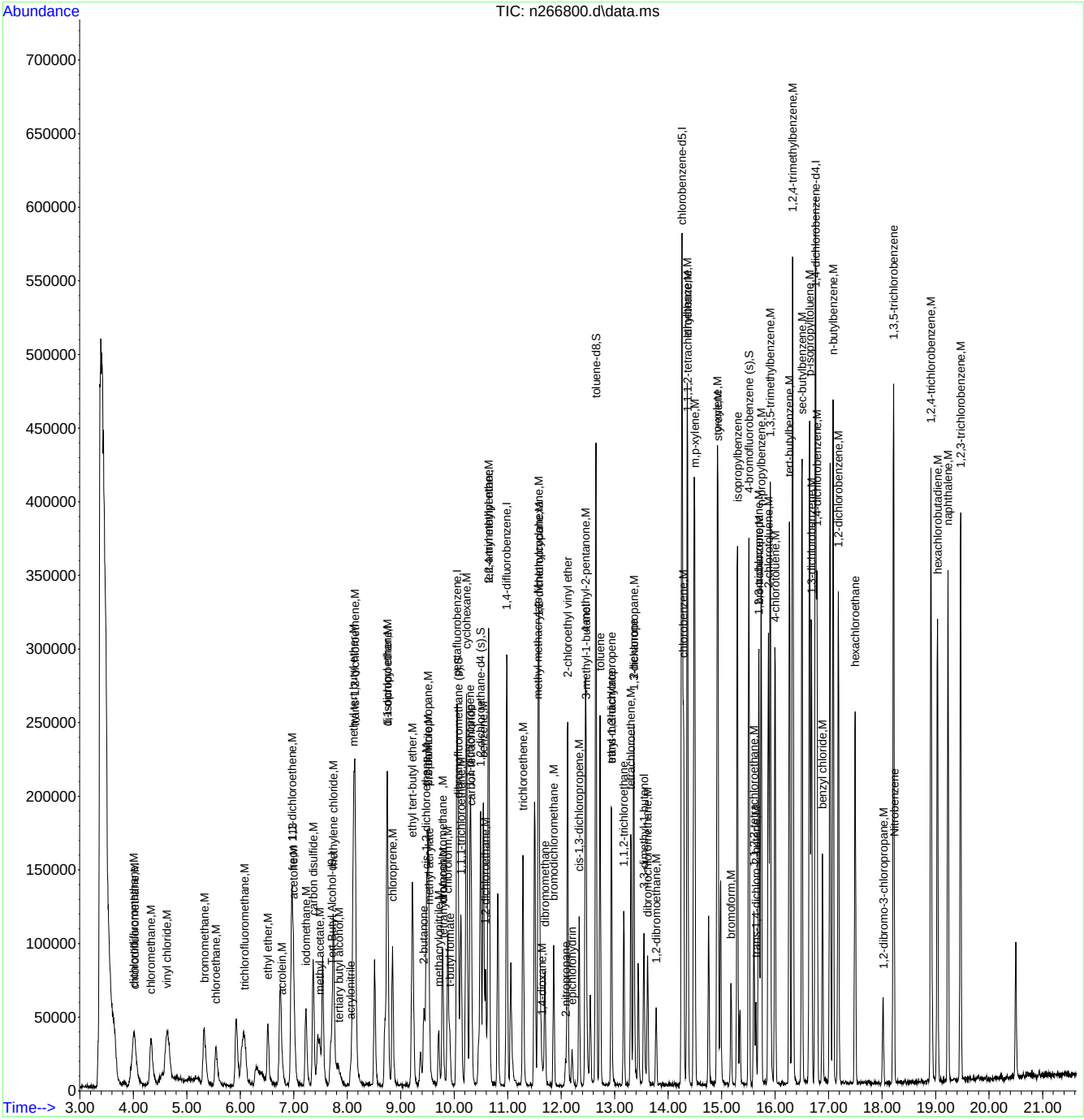
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
122) naphthalene	19.233	128	242172	16.59	ug/L	98
123) 1,2,3-trichlorobenzene	19.468	180	112554	15.30	ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266800.d
Acq On : 19 Dec 2017 12:16 pm
Operator : CHELSEAS
Sample : bs Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:35:38 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266594.d
Acq On : 13 Dec 2017 1:33 am
Operator : CHELSEAS
Sample : jc56966-9ms Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:20:56 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.711	65	114408	300.00	ug/L		0.02
4) pentafluorobenzene	10.049	168	175238	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.980	114	232877	30.00	ug/L		0.00
74) chlorobenzene-d5	14.254	117	226887	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.754	152	172571	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.070	113	86259	31.66	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 105.53%				
54) 1,2-dichloroethane-d4 (s)	10.494	65	94267	32.91	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 109.70%				
75) toluene-d8	12.649	98	286965	29.00	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.67%				
97) 4-bromofluorobenzene (s)	15.509	95	117585	29.42	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.07%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.826	59	36529	94.25	ug/L		94
3) 1,4-dioxane	11.639	88	16705	517.61	ug/L		82
7) chlorodifluoromethane	4.024	51	91308	23.65	ug/L		90
8) dichlorodifluoromethane	3.982	85	117754	19.03	ug/L		97
9) chloromethane	4.333	50	90274	19.91	ug/L		93
10) vinyl chloride	4.620	62	112836	19.25	ug/L		93
11) 1,3-butadiene	4.683	54	3379	1.02	ug/L	#	1
12) bromomethane	5.321	94	68692	18.63	ug/L		95
13) chloroethane	5.551	64	62229	19.27	ug/L		96
14) trichlorofluoromethane	6.059	101	135293	20.57	ug/L		93
17) ethyl ether	6.514	59	38615	23.11	ug/L		94
18) acrolein	6.765	56	8797	17.80	ug/L		63
19) 1,1-dichloroethene	6.958	96	52675	18.39	ug/L		93
20) acetone	6.990	58	18353	59.12	ug/L		91
21) freon 113	6.969	101	89010	28.82	ug/L	#	77
23) iodomethane	7.225	142	103041	20.90	ug/L		94
24) carbon disulfide	7.361	76	216600	24.26	ug/L		95
25) methylene chloride	7.737	84	63036	23.02	ug/L		99
26) methyl acetate	7.492	43	29555	19.29	ug/L		80
27) methyl tert butyl ether	8.124	73	380145	46.13	ug/L		94
28) trans-1,2-dichloroethene	8.145	96	56015	20.75	ug/L		93
29) acrylonitrile	8.062	53	22744	24.81	ug/L		91
31) di-isopropyl ether	8.747	45	175799	23.35	ug/L		96
32) 1,1-dichloroethane	8.747	63	98883	23.35	ug/L		97
33) chloroprene	8.846	53	76602	23.23	ug/L		91
35) ethyl tert-butyl ether	9.218	59	173423	22.86	ug/L		95
36) 2-butanone	9.422	72	18508	75.93	ug/L	#	77
38) 2,2-dichloropropane	9.510	77	102166	21.46	ug/L		93
39) cis-1,2-dichloroethene	9.479	96	61994	21.17	ug/L		88
40) methyl acrylate	9.526	85	5970	19.98	ug/L	#	31
41) propionitrile	9.510	54	74642	244.49	ug/L		90
42) bromochloromethane	9.782	128	29120	20.87	ug/L	#	82
43) tetrahydrofuran	9.793	71	4994	17.83	ug/L	#	67
44) chloroform	9.882	85	66179	22.39	ug/L		93
45) t-butyl formate	10.049	59	134	0.18	ug/L	#	1
47) methacrylonitrile	9.709	67	15013	18.36	ug/L	#	63
48) 1,1,1-trichloroethane	10.122	97	125770	23.43	ug/L		91
49) cyclohexane	10.232	84	93494	18.57	ug/L	#	68
50) 1,1-dichloropropene	10.300	75	73684	24.14	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266594.d
Acq On : 13 Dec 2017 1:33 am
Operator : CHELSEAS
Sample : jc56966-9ms Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:20:56 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) carbon tetrachloride	10.321	117	114932	24.14	ug/L		94
56) 2,2,4-trimethylpentane	10.645	57	200031	21.67	ug/L		92
57) benzene	10.546	78	208294	23.99	ug/L		89
58) tert-amyl methyl ether	10.645	73	172433	22.62	ug/L		92
59) 1,2-dichloroethane	10.583	62	66883	21.74	ug/L		95
62) trichloroethene	11.289	95	52277	23.58	ug/L		94
64) 1,2-dichloropropane	11.587	63	53671	24.71	ug/L		91
65) methylcyclohexane	11.576	83	116365	21.47	ug/L		94
66) dibromomethane	11.691	93	30633	22.11	ug/L		84
67) bromodichloromethane	11.859	83	69641	22.90	ug/L		95
68) 2-nitropropane	12.084	41	11338	23.94	ug/L		85
70) epichlorohydrin	12.204	57	4669	23.87	ug/L		98
71) cis-1,3-dichloropropene	12.335	75	68630	20.59	ug/L		94
72) 4-methyl-2-pentanone	12.455	58	68135	89.40	ug/L		90
73) 3-methyl-1-butanol	12.471	55	50348	426.44	ug/L		95
76) toluene	12.727	92	121741	20.73	ug/L		90
77) ethyl methacrylate	12.936	69	47811	18.55	ug/L		90
78) trans-1,3-dichloropropene	12.936	75	66027	20.62	ug/L		89
79) 1,1,2-trichloroethane	13.172	83	32952	21.39	ug/L		83
80) tetrachloroethene	13.302	164	48984	20.73	ug/L		91
81) 2-hexanone	13.355	58	56547	76.65	ug/L		91
82) 1,3-dichloropropane	13.360	76	69516	21.13	ug/L		97
84) 3,3-dimethyl-1-butanol	13.543	57	55780	174.78	ug/L		95
85) dibromochloromethane	13.616	129	53925	21.32	ug/L		93
86) 1,2-dibromoethane	13.773	107	42389	20.98	ug/L		99
87) chlorobenzene	14.291	112	146807	22.25	ug/L		96
88) 1,1,1,2-tetrachloroethane	14.364	131	67709	19.91	ug/L		87
89) ethylbenzene	14.359	91	244696	22.45	ug/L		96
90) m,p-xylene	14.490	106	192703	40.81	ug/L	#	48
91) o-xylene	14.918	106	99464	20.39	ug/L		94
92) styrene	14.934	104	154642	22.27	ug/L		94
94) bromoform	15.175	173	39635	21.45	ug/L		97
95) isopropylbenzene	15.295	105	286289	22.45	ug/L		99
98) bromobenzene	15.698	156	73690	20.60	ug/L		96
99) 1,1,2,2-tetrachloroethane	15.604	83	67384	21.82	ug/L		98
100) trans-1,4-dichloro-2-b...	15.635	53	16495	21.14	ug/L	#	76
101) 1,2,3-trichloropropane	15.692	110	19907	19.51	ug/L		91
102) n-propylbenzene	15.740	120	82477	22.18	ug/L		98
103) 2-chlorotoluene	15.876	126	69867	20.39	ug/L		93
104) 4-chlorotoluene	16.001	126	70542	22.37	ug/L		98
105) 1,3,5-trimethylbenzene	15.907	105	273454	23.19	ug/L		96
106) tert-butylbenzene	16.268	134	55022	19.32	ug/L	#	75
107) 1,2,4-trimethylbenzene	16.325	105	292828	23.90	ug/L		99
108) sec-butylbenzene	16.503	105	363838	23.87	ug/L		97
109) 1,3-dichlorobenzene	16.681	146	165649	21.62	ug/L		96
110) p-isopropyltoluene	16.644	119	325367	23.73	ug/L		100
111) 1,4-dichlorobenzene	16.780	146	168139	21.36	ug/L		99
112) 1,2-dichlorobenzene	17.183	146	175882	20.99	ug/L		98
113) benzyl chloride	16.885	91	104646	13.93	ug/L		99
115) n-butylbenzene	17.084	92	170508	22.86	ug/L		95
116) hexachloroethane	17.497	201	62881	19.14	ug/L		94
117) 1,2-dibromo-3-chloropr...	18.020	157	21839	15.95	ug/L		94
118) Nitrobenzene	18.234	77	5232	12.57	ug/L		84
119) 1,3,5-trichlorobenzene	18.213	180	216039	22.39	ug/L		98
120) 1,2,4-trichlorobenzene	18.919	180	183974	19.20	ug/L		97
121) hexachlorobutadiene	19.035	225	105450	20.27	ug/L		98
122) naphthalene	19.233	128	358722	19.85	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266594.d
Acq On : 13 Dec 2017 1:33 am
Operator : CHELSEAS
Sample : jc56966-9ms Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:20:56 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
123) 1,2,3-trichlorobenzene	19.469	180	173430	19.04	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

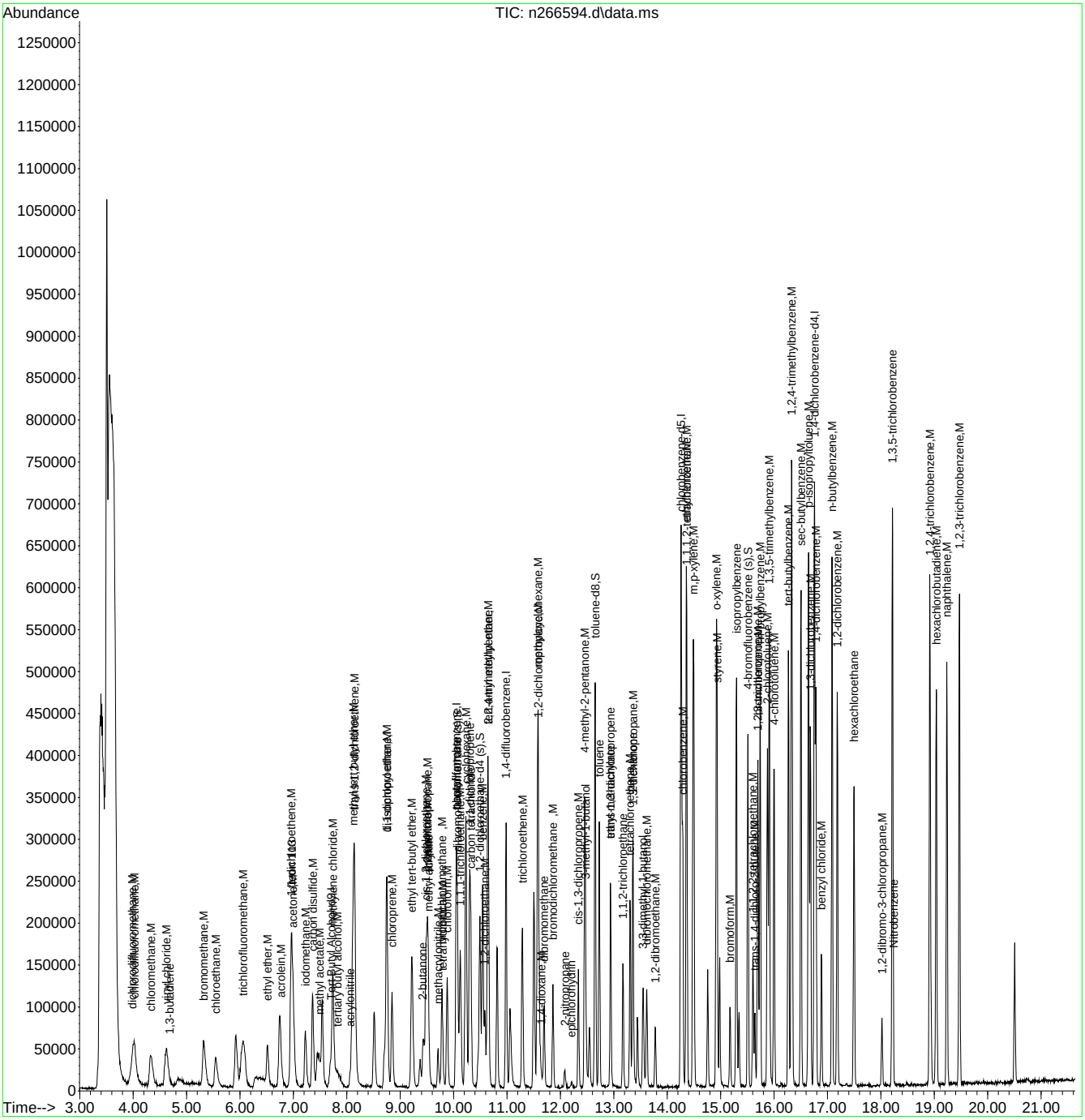
7.4.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266594.d
Acq On : 13 Dec 2017 1:33 am
Operator : CHELSEAS
Sample : jc56966-9ms Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:20:56 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266595.d
Acq On : 13 Dec 2017 2:02 am
Operator : CHELSEAS
Sample : jc56966-9msd Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:21:15 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.706	65	114203	300.00	ug/L		0.01
4) pentafluorobenzene	10.055	168	182148	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.980	114	251484	30.00	ug/L		0.00
74) chlorobenzene-d5	14.254	117	236281	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.754	152	170941	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.076	113	91087	32.17	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 107.23%				
54) 1,2-dichloroethane-d4 (s)	10.494	65	98478	31.84	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 106.13%				
75) toluene-d8	12.649	98	302792	29.38	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.93%				
97) 4-bromofluorobenzene (s)	15.510	95	125213	31.63	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 105.43%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.842	59	38684	99.99	ug/L		80
3) 1,4-dioxane	11.634	88	17514	543.65	ug/L		96
7) chlorodifluoromethane	4.014	51	92794	23.12	ug/L		95
8) dichlorodifluoromethane	4.009	85	128853	20.03	ug/L		90
9) chloromethane	4.338	50	95696	20.31	ug/L		91
10) vinyl chloride	4.636	62	117103	19.22	ug/L		93
12) bromomethane	5.327	94	70462	18.38	ug/L		76
13) chloroethane	5.546	64	67155	20.01	ug/L		89
14) trichlorofluoromethane	6.069	101	139742	20.44	ug/L		97
17) ethyl ether	6.519	59	38593	22.22	ug/L		92
18) acrolein	6.775	56	9240	17.99	ug/L	#	48
19) 1,1-dichloroethene	6.964	96	52534	17.65	ug/L		87
20) acetone	6.990	58	20258	62.78	ug/L		85
21) freon 113	6.979	101	91850	28.61	ug/L		88
23) iodomethane	7.230	142	109380	21.34	ug/L		95
24) carbon disulfide	7.361	76	222926	24.02	ug/L		97
25) methylene chloride	7.743	84	65800	23.12	ug/L		96
26) methyl acetate	7.492	43	28962	18.19	ug/L		81
27) methyl tert butyl ether	8.125	73	391313	45.68	ug/L		92
28) trans-1,2-dichloroethene	8.146	96	60576	21.59	ug/L		92
29) acrylonitrile	8.067	53	22968	24.10	ug/L		91
31) di-isopropyl ether	8.752	45	187448	23.96	ug/L		99
32) 1,1-dichloroethane	8.747	63	107091	24.33	ug/L		98
33) chloroprene	8.846	53	85798	25.04	ug/L		91
35) ethyl tert-butyl ether	9.223	59	183146	23.22	ug/L		95
36) 2-butanone	9.422	72	19278	76.09	ug/L		90
38) 2,2-dichloropropane	9.505	77	106459	21.51	ug/L		90
39) cis-1,2-dichloroethene	9.484	96	65932	21.66	ug/L		96
40) methyl acrylate	9.521	85	6493	20.90	ug/L	#	70
41) propionitrile	9.516	54	77204	243.28	ug/L		88
42) bromochloromethane	9.783	128	32070	22.11	ug/L		82
43) tetrahydrofuran	9.798	71	5670	19.48	ug/L	#	69
44) chloroform	9.882	85	69010	22.46	ug/L		98
47) methacrylonitrile	9.704	67	16170	19.02	ug/L	#	62
48) 1,1,1-trichloroethane	10.128	97	128706	23.07	ug/L		98
49) cyclohexane	10.227	84	106867	20.42	ug/L	#	70
50) 1,1-dichloropropene	10.300	75	77732	24.50	ug/L		94
51) carbon tetrachloride	10.316	117	119244	24.10	ug/L		98
56) 2,2,4-trimethylpentane	10.646	57	217554	21.83	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266595.d
Acq On : 13 Dec 2017 2:02 am
Operator : CHELSEAS
Sample : jc56966-9msd Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:21:15 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
57) benzene	10.546	78	220744	23.54	ug/L		93
58) tert-amyl methyl ether	10.640	73	177924	21.61	ug/L		89
59) 1,2-dichloroethane	10.583	62	74686	22.48	ug/L		90
62) trichloroethene	11.284	95	52133	21.78	ug/L		93
64) 1,2-dichloropropane	11.587	63	55998	23.87	ug/L		91
65) methylcyclohexane	11.577	83	124501	21.27	ug/L		96
66) dibromomethane	11.692	93	31334	20.94	ug/L		87
67) bromodichloromethane	11.859	83	71405	21.75	ug/L		91
68) 2-nitropropane	12.079	41	10952	21.42	ug/L		98
70) epichlorohydrin	12.209	57	4047	19.16	ug/L		92
71) cis-1,3-dichloropropene	12.335	75	72422	20.12	ug/L		96
72) 4-methyl-2-pentanone	12.460	58	68627	83.38	ug/L		90
73) 3-methyl-1-butanol	12.466	55	52483	411.63	ug/L		97
76) toluene	12.727	92	126823	20.74	ug/L		95
77) ethyl methacrylate	12.936	69	48280	17.98	ug/L		86
78) trans-1,3-dichloropropene	12.936	75	67838	20.34	ug/L		85
79) 1,1,2-trichloroethane	13.172	83	33338	20.78	ug/L		85
80) tetrachloroethene	13.308	164	47902	19.47	ug/L		91
81) 2-hexanone	13.355	58	57960	75.45	ug/L		91
82) 1,3-dichloropropane	13.360	76	74071	21.62	ug/L		92
84) 3,3-dimethyl-1-butanol	13.548	57	59011	177.55	ug/L		89
85) dibromochloromethane	13.616	129	53719	20.40	ug/L		96
86) 1,2-dibromoethane	13.778	107	45693	21.72	ug/L		88
87) chlorobenzene	14.291	112	149781	21.80	ug/L		95
88) 1,1,1,2-tetrachloroethane	14.364	131	72693	20.52	ug/L		95
89) ethylbenzene	14.359	91	250005	22.03	ug/L		99
90) m,p-xylene	14.490	106	195392	39.73	ug/L	#	49
91) o-xylene	14.919	106	103331	20.34	ug/L		97
92) styrene	14.934	104	153946	21.29	ug/L		99
94) bromoform	15.175	173	41234	21.43	ug/L		100
95) isopropylbenzene	15.295	105	295908	22.28	ug/L		99
98) bromobenzene	15.698	156	72392	20.43	ug/L		92
99) 1,1,2,2-tetrachloroethane	15.604	83	66350	21.69	ug/L		97
100) trans-1,4-dichloro-2-b...	15.640	53	16689	21.59	ug/L		91
101) 1,2,3-trichloropropane	15.693	110	19947	19.73	ug/L		94
102) n-propylbenzene	15.740	120	80654	21.90	ug/L		92
103) 2-chlorotoluene	15.876	126	74133	21.84	ug/L		100
104) 4-chlorotoluene	16.001	126	70468	22.56	ug/L		93
105) 1,3,5-trimethylbenzene	15.907	105	280300	24.00	ug/L		97
106) tert-butylbenzene	16.268	134	54298	19.25	ug/L	#	88
107) 1,2,4-trimethylbenzene	16.326	105	292585	24.10	ug/L		100
108) sec-butylbenzene	16.503	105	376737	24.96	ug/L		98
109) 1,3-dichlorobenzene	16.681	146	164391	21.66	ug/L		99
110) p-isopropyltoluene	16.645	119	328220	24.16	ug/L		97
111) 1,4-dichlorobenzene	16.786	146	168114	21.56	ug/L		97
112) 1,2-dichlorobenzene	17.183	146	182884	22.03	ug/L		100
113) benzyl chloride	16.885	91	103010	13.84	ug/L		97
115) n-butylbenzene	17.084	92	172182	23.30	ug/L		95
116) hexachloroethane	17.497	201	65835	20.23	ug/L		95
117) 1,2-dibromo-3-chloropr...	18.020	157	21612	15.93	ug/L		98
118) Nitrobenzene	18.229	77	5456	13.23	ug/L		76
119) 1,3,5-trichlorobenzene	18.214	180	214447	22.44	ug/L		97
120) 1,2,4-trichlorobenzene	18.920	180	183055	19.29	ug/L		96
121) hexachlorobutadiene	19.040	225	104515	20.28	ug/L		92
122) naphthalene	19.233	128	363107	20.29	ug/L		99
123) 1,2,3-trichlorobenzene	19.469	180	176841	19.60	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266595.d
Acq On : 13 Dec 2017 2:02 am
Operator : CHELSEAS
Sample : jc56966-9msd Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:21:15 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

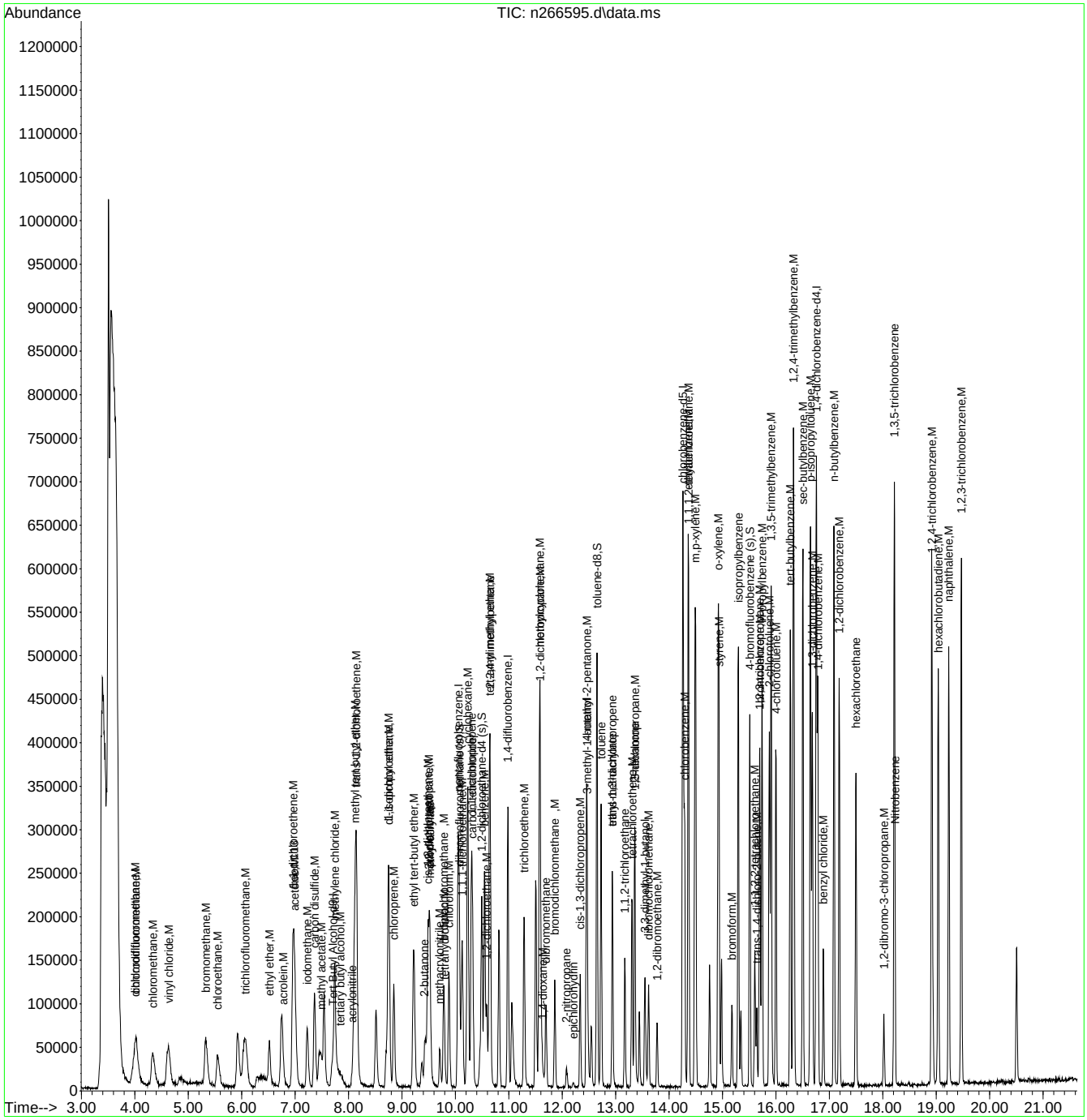
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11234\
Data File : n266595.d
Acq On : 13 Dec 2017 2:02 am
Operator : CHELSEAS
Sample : jc56966-9msd Inst : GCMSN
Misc : MS22980,VN11234,5,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 14 04:21:15 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228717.d
Acq On : 13 Dec 2017 2:20 am
Operator : CHELSEAS
Sample : jc56966-31ms Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 34 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:26:17 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) TERT BUTYL ALCOHOL-d9	7.429	65	114888	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.464	168	171757	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.322	114	264383	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.522	117	262315	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.069	152	151554	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.506	113	80517	34.01	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 113.37%				
50) 1,2-DICHLOROETHANE-d4	9.908	65	85934	33.94	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 113.13%				
67) TOLUENE-d8	11.943	98	343548	30.72	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.40%				
90) 4-BROMOFLUOROBENZENE	14.783	174	106860	29.49	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.30%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.523	59	43856	98.88	PPb		99
3) 1,4-DIOXANE	11.001	88	15819	441.02	PPb		91
5) CHLORODIFLUOROMETHANE	4.375	51	104508	16.42	PPB		94
6) DICHLORODIFLUOROMETHANE	4.375	85	106367	17.03	PPb		97
9) CHLOROMETHANE	4.694	50	103381	16.70	PPb		97
10) VINYL CHLORIDE	4.940	62	109523	17.53	PPb		97
11) BROMOMETHANE	5.562	96	62786	18.72	PPb		96
12) CHLOROETHANE	5.724	64	58071	20.35	PPb		94
13) VINYL BROMIDE	6.043	106	65534	25.23	PPB		96
14) TRICHLOROFLUOROMETHANE	6.143	101	91207	20.58	PPb		97
17) ETHYL ETHER	6.509	74	29608	22.27	PPB	#	87
18) 1,1-DICHLOROETHYLENE	6.896	61	87806	21.22	PPb		99
19) FREON 113	6.885	151	61261	22.03	PPb		89
20) ACROLEIN	6.713	56	8647	20.68	PPB	#	82
21) ACETONE	6.912	58	17468	86.52	PPb		98
22) CARBON DISULFIDE	7.272	76	213282	21.65	PPb		96
23) IODOMETHANE	7.147	142	92811	19.47	PPb		95
24) ACETONITRILE	7.283	41	72872	197.32	PPB	#	95
25) METHYL ACETATE	7.314	43	30732	15.98	PPB		90
26) METHYLENE CHLORIDE	7.508	84	61293	21.01	PPb		95
27) ACRYLONITRILE	7.785	53	22071	25.03	PPb		97
28) METHYL TERT BUTYL ETHER	7.816	73	382168	44.15	PPb		98
29) trans-1,2-DICHLOROETHY...	7.848	61	88665	23.19	PPb		88
30) HEXANE	8.141	57	66230	16.90	PPb		96
31) 1,1-DICHLOROETHANE	8.355	63	109598	23.05	PPb		98
32) VINYL ACETATE	8.313	86	7078	21.07	PPb		95
33) DI-ISOPROPYL ETHER	8.345	45	260963	24.16	PPb		96
34) ETHYL TERT BUTYL ETHER	8.758	59	221707	23.15	PPb		98
35) 2-BUTANONE	8.957	72	20312	89.40	PPb		99
36) cis-1,2-DICHLOROETHYLENE	9.004	96	61154	20.90	PPb		83
37) 2,2-DICHLOROPROPANE	9.035	77	92829	19.97	PPB		90
38) ETHYL ACETATE	8.977	45	6956	20.90	PPb	#	1
39) BROMOCHLOROMETHANE	9.281	128	25935	21.19	PPB		89
40) TETRAHYDROFURAN	9.323	42	17838	23.34	PPb		92
41) CHLOROFORM	9.323	83	93180	22.85	PPb		99
42) t-BUTYL FORMATE	9.328	59	113	0.36	PPB	#	1
43) 1,1,1-TRICHLOROETHANE	9.605	97	99105	22.55	PPb		97
44) CYCLOHEXANE	9.689	84	106112	20.64	PPB		88
46) 1,1-DICHLOROPROPENE	9.757	75	77973	22.72	PPB		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228717.d
Acq On : 13 Dec 2017 2:20 am
Operator : CHELSEAS
Sample : jc56966-31ms Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 34 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:26:17 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
47)	CARBON TETRACHLORIDE	9.793	117	85498	22.02	PPB		99
48)	ISOPROPYL ACETATE	9.893	87	9150	19.54	PPB	#	80
51)	BENZENE	10.003	78	242852	20.53	PPb		99
52)	1,2-DICHLOROETHANE	9.992	62	66400	22.23	PPb		94
53)	2,2,4-TRIMETHYLPENTANE	10.023	57	253639	18.03	PPB		96
54)	TERT-AMYL METHYL ETHER	10.023	73	199842	20.01	PPb		97
55)	HEPTANE	10.165	57	52302	20.60	PPb		97
56)	TRICHLOROETHYLENE	10.656	95	57688	20.95	PPb		97
57)	1,2-DICHLOROPROPANE	10.913	63	69882	21.00	PPb		96
58)	DIBROMOMETHANE	11.049	93	30869	20.43	PPB		98
59)	METHYL METHACRYLATE	10.892	100	11825	20.96	PPB		87
60)	METHYLCYCLOHEXANE	10.902	83	127563	18.17	PPB		92
61)	BROMODICHLOROMETHANE	11.164	83	68722	20.20	PPb		98
63)	EPICHLOROHYDRIN	11.514	57	3829	16.99	PPb		80
64)	cis-1,3-DICHLOROPROPENE	11.624	75	86157	18.59	PPb		87
65)	4-METHYL-2-PENTANONE	11.723	58	94474	88.02	PPb		92
68)	TOLUENE	12.016	92	144455	19.42	PPB		97
69)	ETHYL METHACRYLATE	12.184	69	66068	19.32	PPB		86
70)	trans-1,3-DICHLOROPROPENE	12.184	75	71942	18.15	PPB		98
71)	1,1,2-TRICHLOROETHANE	12.408	83	40058	19.50	PPB		96
72)	TETRACHLOROETHYLENE	12.628	164	47226	18.60	PPb		97
73)	2-HEXANONE	12.597	58	81487	78.36	PPb		92
74)	1,3-DICHLOROPROPANE	12.607	76	81906	20.46	PPB		91
75)	BUTYL ACETATE	12.675	56	33320	18.31	PPb		87
76)	3,3-DIMETHYL-1-BUTANOL	12.759	57	72675	199.57	PPB		94
77)	DIBROMOCHLOROMETHANE	12.879	129	47815	18.32	PPb		92
78)	ETHYLENE DIBROMIDE	13.057	107	45943	20.63	PPb		89
79)	CHLOROBENZENE	13.559	112	157747	19.02	PPb		97
80)	1,1,1,2-TETRACHLOROETHANE	13.617	131	63373	18.80	PPB		97
81)	ETHYLBENZENE	13.622	91	282577	20.02	PPb		100
82)	m,p-XYLENE	13.737	106	216796	39.91	PPb		98
83)	o-XYLENE	14.192	91	242632	19.82	PPb		98
84)	STYRENE	14.197	104	168528	19.03	PPb		98
86)	BROMOFORM	14.469	173	30031	16.48	PPb		97
87)	CUMENE	14.568	105	311600	19.92	PPb		98
88)	cis-1,4-DICHLORO-2-BUTENE	14.616	88	9882	10.98	PPB		90
91)	1,1,2,2-TETRACHLOROETHANE	14.867	83	72444	19.89	PPB		98
92)	trans-1,4-DICHLORO-2-B...	14.919	53	10979	14.32	PPB		95
93)	1,2,3-TRICHLOROPROPANE	14.961	110	15175	20.11	PPB		88
94)	N-PROPYLBENZENE	15.018	91	366781	20.96	PPB		98
95)	BROMOBENZENE	14.997	156	68051	18.74	PPB		91
96)	2-CHLOROTOLUENE	15.175	126	72076	19.72	PPB		94
97)	4-CHLOROTOLUENE	15.285	91	204155	19.72	PPB		96
98)	1,3,5-TRIMETHYLBENZENE	15.180	105	266266	20.78	PPB		96
99)	TERT-BUTYLBENZENE	15.578	119	232888	19.73	PPB		95
100)	1,2,4-TRIMETHYLBENZENE	15.620	105	273635	20.63	PPB		96
101)	SEC-BUTYLBENZENE	15.813	105	379292	19.96	PPB		96
102)	P-ISOPROPYLTOLUENE	15.939	119	305408	20.29	PPB		97
103)	1,3-DICHLOROBENZENE	16.007	146	142116	18.86	PPb		96
104)	1,4-DICHLOROBENZENE	16.096	146	144138	18.56	PPb		97
105)	N-BUTYLBENZENE	16.399	134	76553	19.59	PPB		88
106)	1,2-DICHLOROBENZENE	16.530	146	148020	18.67	PPb		97
107)	HEXACHLOROETHANE	16.828	203	29575	16.63	PPB		94
108)	1,2-DIBROMO-3-CHLOROPR...	17.361	157	13943	16.84	PPB		82
109)	HEXACHLOROBUTADIENE	18.407	225	66429	16.45	PPB		98
110)	1,3,5-TRICHLOROBENZENE	17.576	180	146190	18.37	PPB		99
111)	NITROBENZENE	17.581	77	3597	12.87	PPB	#	70

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228717.d
Acq On : 13 Dec 2017 2:20 am
Operator : CHELSEAS
Sample : jc56966-31ms Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 34 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:26:17 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
112) 1,2,4-TRICHLOROBENZENE	18.266	180	120454	16.85	PPB	99
113) 1,2,3-TRICHLOROBENZENE	18.852	180	97452	15.69	PPB	98
114) NAPHTHALENE	18.580	128	207395	16.54	PPb	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

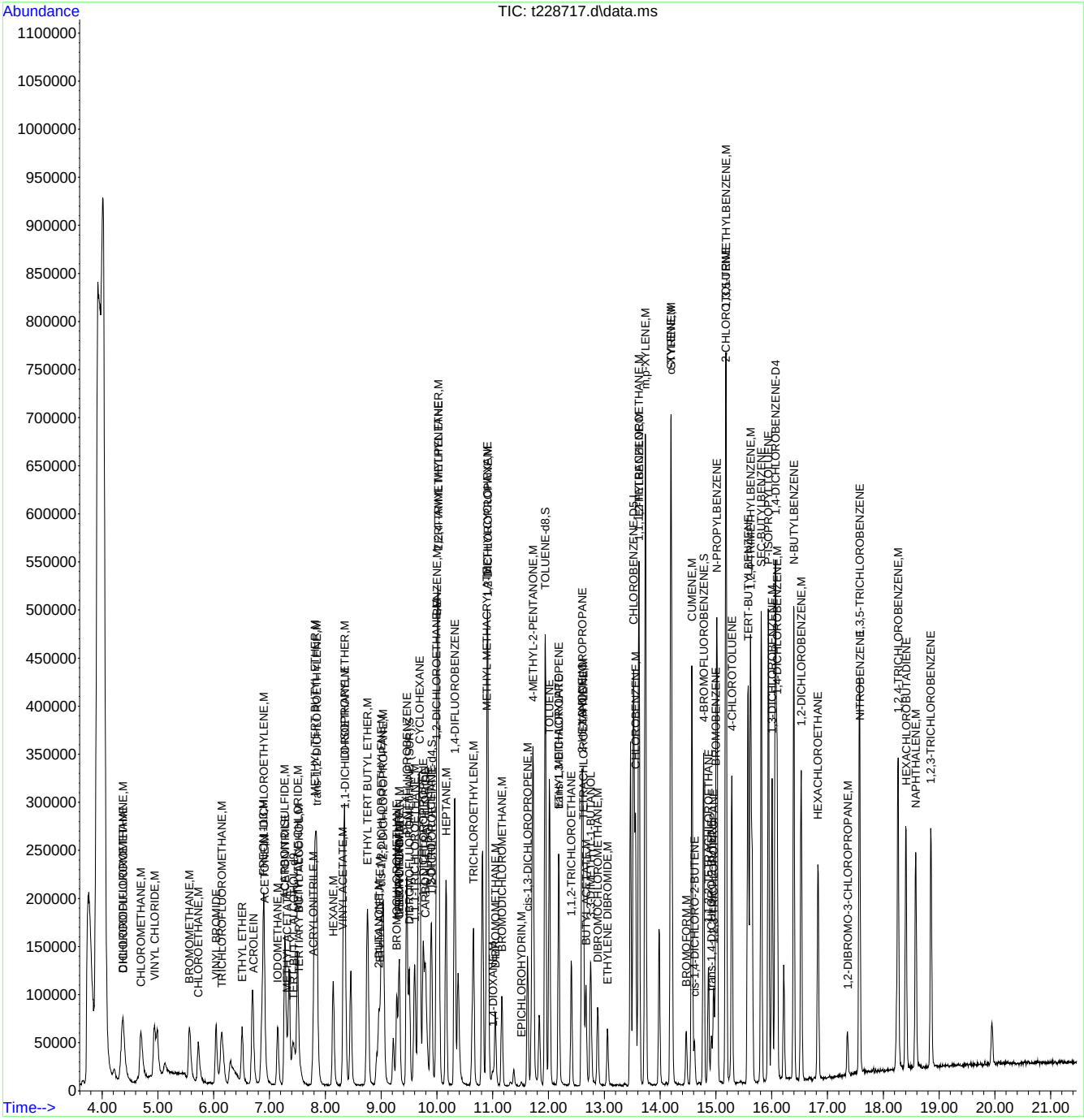
7.4.3

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228717.d
Acq On : 13 Dec 2017 2:20 am
Operator : CHELSEAS
Sample : jc56966-31ms Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 34 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:26:17 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228718.d
Acq On : 13 Dec 2017 2:50 am
Operator : CHELSEAS
Sample : jc56966-31msd Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 35 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:26:55 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) TERT BUTYL ALCOHOL-d9	7.427	65	109058	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.461	168	167080	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.319	114	255087	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.525	117	250713	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.067	152	145458	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.503	113	77229	33.53	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.77%				
50) 1,2-DICHLOROETHANE-d4	9.906	65	89423	36.60	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 122.00%				
67) TOLUENE-d8	11.940	98	332895	31.14	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.80%				
90) 4-BROMOFLUOROBENZENE	14.780	174	101735	29.25	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.50%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.531	59	44511	105.72	PPb		97
3) 1,4-DIOXANE	10.816	88	4617	135.60	PPb		74
5) CHLORODIFLUOROMETHANE	4.367	51	98122	15.85	PPB		97
6) DICHLORODIFLUOROMETHANE	4.367	85	110251	18.15	PPb		91
9) CHLOROMETHANE	4.691	50	101141	16.79	PPb		97
10) VINYL CHLORIDE	4.937	62	104802	17.24	PPb		96
11) BROMOMETHANE	5.554	96	59907	18.36	PPb		90
12) CHLOROETHANE	5.722	64	58016	20.90	PPb		95
13) VINYL BROMIDE	6.041	106	61997	24.54	PPB		96
14) TRICHLOROFLUOROMETHANE	6.140	101	89309	20.72	PPb		96
17) ETHYL ETHER	6.511	74	28598	22.11	PPB		84
18) 1,1-DICHLOROETHYLENE	6.898	61	82373	20.47	PPb		96
19) FREON 113	6.877	151	58118	21.49	PPb		95
20) ACROLEIN	6.721	56	9206	22.63	PPB	#	90
21) ACETONE	6.909	58	16964	86.37	PPb		86
22) CARBON DISULFIDE	7.270	76	181683	18.96	PPb		96
23) IODOMETHANE	7.144	142	85263	18.39	PPb		92
24) ACETONITRILE	7.280	41	70427	196.03	PPB		94
25) METHYL ACETATE	7.317	43	32906	17.58	PPB		95
26) METHYLENE CHLORIDE	7.500	84	59345	20.91	PPb		90
27) ACRYLONITRILE	7.772	53	21831	25.45	PPb		96
28) METHYL TERT BUTYL ETHER	7.814	73	367805	43.68	PPb		93
29) trans-1,2-DICHLOROETHY...	7.850	61	84207	22.64	PPb		97
30) HEXANE	8.138	57	67346	17.67	PPb		97
31) 1,1-DICHLOROETHANE	8.352	63	104846	22.66	PPb		97
32) VINYL ACETATE	8.316	86	6338	19.39	PPb	#	85
33) DI-ISOPROPYL ETHER	8.337	45	249890	23.78	PPb		93
34) ETHYL TERT BUTYL ETHER	8.750	59	213994	22.97	PPb		94
35) 2-BUTANONE	8.964	72	19148	86.63	PPb		74
36) cis-1,2-DICHLOROETHYLENE	9.001	96	58591	20.59	PPb		90
37) 2,2-DICHLOROPROPANE	9.032	77	89865	19.88	PPB		89
38) ETHYL ACETATE	8.964	45	6650	20.54	PPb	#	64
39) BROMOCHLOROMETHANE	9.278	128	24578	20.64	PPB		90
40) TETRAHYDROFURAN	9.330	42	17992	24.20	PPb		97
41) CHLOROFORM	9.325	83	88427	22.29	PPb		98
42) t-BUTYL FORMATE	9.602	59	1548	5.08	PPB	#	10
43) 1,1,1-TRICHLOROETHANE	9.602	97	90970	21.28	PPb		91
44) CYCLOHEXANE	9.686	84	114023	22.80	PPB		93
46) 1,1-DICHLOROPROPENE	9.754	75	73358	21.97	PPB		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228718.d
Acq On : 13 Dec 2017 2:50 am
Operator : CHELSEAS
Sample : jc56966-31msd Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 35 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:26:55 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
47)	CARBON TETRACHLORIDE	9.791	117	76918	20.37	PPB		99
48)	ISOPROPYL ACETATE	9.880	87	8457	18.56	PPB	#	90
51)	BENZENE	10.000	78	229468	20.11	PPb		98
52)	1,2-DICHLOROETHANE	9.984	62	64116	22.25	PPb		96
53)	2,2,4-TRIMETHYLPENTANE	10.021	57	252556	18.61	PPB		95
54)	TERT-AMYL METHYL ETHER	10.026	73	191320	19.85	PPb		98
55)	HEPTANE	10.162	57	49773	20.32	PPb		98
56)	TRICHLOROETHYLENE	10.659	95	54730	20.60	PPb		93
57)	1,2-DICHLOROPROPANE	10.910	63	66853	20.82	PPb		99
58)	DIBROMOMETHANE	11.046	93	29367	20.15	PPB		96
59)	METHYL METHACRYLATE	10.889	100	11024	20.26	PPB		81
60)	METHYLCYCLOHEXANE	10.905	83	122464	18.08	PPB		94
61)	BROMODICHLOROMETHANE	11.166	83	66453	20.24	PPb		99
63)	EPICHLOROHYDRIN	11.511	57	3879	17.84	PPb		92
64)	cis-1,3-DICHLOROPROPENE	11.626	75	81890	18.31	PPb		91
65)	4-METHYL-2-PENTANONE	11.726	58	89403	86.33	PPb		92
68)	TOLUENE	12.013	92	136125	19.15	PPB		95
69)	ETHYL METHACRYLATE	12.181	69	66790	20.43	PPB		87
70)	trans-1,3-DICHLOROPROPENE	12.181	75	72140	19.04	PPB		94
71)	1,1,2-TRICHLOROETHANE	12.411	83	39146	19.93	PPB		91
72)	TETRACHLOROETHYLENE	12.625	164	45893	18.91	PPb		98
73)	2-HEXANONE	12.594	58	82751	83.25	PPb		91
74)	1,3-DICHLOROPROPANE	12.610	76	78020	20.39	PPB		98
75)	BUTYL ACETATE	12.672	56	32541	18.71	PPb		97
76)	3,3-DIMETHYL-1-BUTANOL	12.756	57	71942	206.70	PPB		94
77)	DIBROMOCHLOROMETHANE	12.882	129	44815	17.97	PPb		94
78)	ETHYLENE DIBROMIDE	13.054	107	43528	20.45	PPb		94
79)	CHLOROBENZENE	13.556	112	151393	19.10	PPb		95
80)	1,1,1,2-TETRACHLOROETHANE	13.619	131	59830	18.57	PPB		98
81)	ETHYLBENZENE	13.619	91	266510	19.75	PPb		99
82)	m,p-XYLENE	13.739	106	204614	39.41	PPb		98
83)	o-XYLENE	14.194	91	229797	19.64	PPb		97
84)	STYRENE	14.194	104	165279	19.53	PPb		98
86)	BROMOFORM	14.472	173	27930	16.03	PPb		98
87)	CUMENE	14.571	105	294021	19.67	PPb		99
88)	cis-1,4-DICHLORO-2-BUTENE	14.618	88	9062	10.54	PPB		86
91)	1,1,2,2-TETRACHLOROETHANE	14.864	83	68962	19.73	PPB		97
92)	trans-1,4-DICHLORO-2-B...	14.921	53	11289	15.35	PPB	#	79
93)	1,2,3-TRICHLOROPROPANE	14.958	110	14609	20.17	PPB		80
94)	N-PROPYLBENZENE	15.021	91	342915	20.42	PPB		95
95)	BROMOBENZENE	15.000	156	63874	18.32	PPB		92
96)	2-CHLOROTOLUENE	15.178	126	67347	19.19	PPB		94
97)	4-CHLOROTOLUENE	15.288	91	197634	19.89	PPB		94
98)	1,3,5-TRIMETHYLBENZENE	15.183	105	252255	20.51	PPB		97
99)	TERT-BUTYLBENZENE	15.575	119	217223	19.18	PPB		97
100)	1,2,4-TRIMETHYLBENZENE	15.617	105	257245	20.20	PPB		95
101)	SEC-BUTYLBENZENE	15.816	105	355035	19.46	PPB		98
102)	P-ISOPROPYLTOLUENE	15.941	119	289891	20.07	PPB		97
103)	1,3-DICHLOROBENZENE	16.009	146	134965	18.66	PPb		96
104)	1,4-DICHLOROBENZENE	16.098	146	136264	18.28	PPb		98
105)	N-BUTYLBENZENE	16.396	134	70390	18.77	PPB		92
106)	1,2-DICHLOROBENZENE	16.527	146	137763	18.10	PPb		97
107)	HEXACHLOROETHANE	16.830	203	28865	16.91	PPB		91
108)	1,2-DIBROMO-3-CHLOROPR...	17.359	157	13186	16.59	PPB		82
109)	HEXACHLOROBUTADIENE	18.405	225	63631	16.42	PPB		97
110)	1,3,5-TRICHLOROBENZENE	17.573	180	137812	18.04	PPB		98
111)	NITROBENZENE	17.584	77	3602	13.43	PPB	#	58

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228718.d
Acq On : 13 Dec 2017 2:50 am
Operator : CHELSEAS
Sample : jc56966-31msd Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 35 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:26:55 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

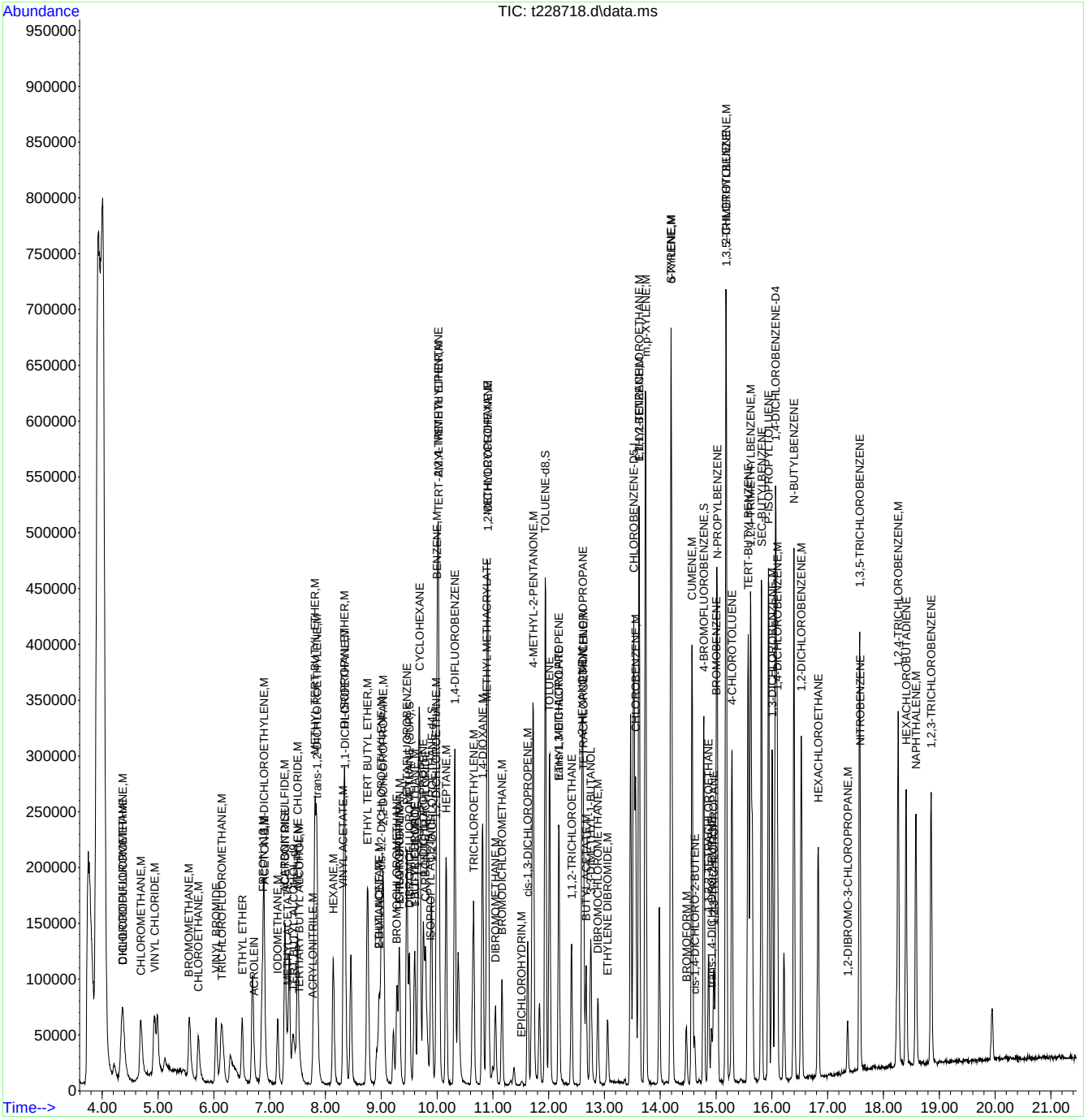
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
112) 1,2,4-TRICHLOROBENZENE	18.263	180	115777	16.88	PPB	99
113) 1,2,3-TRICHLOROBENZENE	18.854	180	94670	15.88	PPB	98
114) NAPHTHALENE	18.582	128	203543	16.91	PPb	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9393\
Data File : t228718.d
Acq On : 13 Dec 2017 2:50 am
Operator : CHELSEAS
Sample : jc56966-31msd Inst : GCMST
Misc : MS22980,VT9393,W,,,,1
ALS Vial : 35 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 04:26:55 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266664.d
Acq On : 14 Dec 2017 3:43 pm
Operator : CHELSEAS
Sample : jc57306-7ms Inst : GCMSN
Misc : MS23149,VN11237,5,,,,5
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 01:51:51 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.714	65	91147	300.00	ug/L		0.02
4) pentafluorobenzene	10.052	168	167727	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.983	114	226269	30.00	ug/L		0.00
74) chlorobenzene-d5	14.257	117	209718	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.757	152	159830	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.073	113	84818	32.53	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 108.43%				
54) 1,2-dichloroethane-d4 (s)	10.497	65	90033	32.35	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 107.83%				
75) toluene-d8	12.646	98	272754	29.82	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.40%				
97) 4-bromofluorobenzene (s)	15.507	95	108312	29.26	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.53%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.850	59	27133	87.87	ug/L		90
3) 1,4-dioxane	11.652	88	11731	456.25	ug/L		89
7) chlorodifluoromethane	4.037	51	68773	18.61	ug/L		96
8) dichlorodifluoromethane	4.006	85	96239	16.25	ug/L		97
9) chloromethane	4.330	50	74054	17.07	ug/L		95
10) vinyl chloride	4.623	62	91462	16.31	ug/L		91
11) 1,3-butadiene	4.670	54	4827	1.52	ug/L	#	76
12) bromomethane	5.329	94	61325	17.37	ug/L		81
13) chloroethane	5.559	64	54898	17.76	ug/L		95
14) trichlorofluoromethane	6.072	101	108140	17.18	ug/L		99
17) ethyl ether	6.522	59	31303	19.58	ug/L		94
18) acrolein	6.778	56	9133	19.31	ug/L		94
19) 1,1-dichloroethene	6.961	96	60157	21.94	ug/L		96
20) acetone	6.998	58	28117	94.63	ug/L	#	66
21) freon 113	6.977	101	154972	52.43	ug/L		89
23) iodomethane	7.228	142	91602	19.41	ug/L		96
24) carbon disulfide	7.364	76	186033	21.77	ug/L		97
25) methylene chloride	7.740	84	55656	21.24	ug/L		96
26) methyl acetate	7.494	43	30980	21.13	ug/L		91
27) methyl tert butyl ether	8.127	73	321687	40.78	ug/L		90
28) trans-1,2-dichloroethene	8.153	96	50221	19.44	ug/L		97
29) acrylonitrile	8.065	53	18631	21.23	ug/L		85
31) di-isopropyl ether	8.750	45	156374	21.70	ug/L		99
32) 1,1-dichloroethane	8.750	63	122708	30.27	ug/L		96
33) chloroprene	8.844	53	64850	20.55	ug/L		94
35) ethyl tert-butyl ether	9.220	59	149284	20.56	ug/L		97
36) 2-butanone	9.430	72	24919	106.81	ug/L	#	75
38) 2,2-dichloropropane	9.513	77	103824	22.78	ug/L		97
39) cis-1,2-dichloroethene	9.482	96	455424	162.47	ug/L		94
40) methyl acrylate	9.524	85	5119	17.90	ug/L	#	56
41) propionitrile	9.513	54	60131	205.78	ug/L		87
42) bromochloromethane	9.780	128	26123	19.56	ug/L		83
43) tetrahydrofuran	9.796	71	3640	13.58	ug/L	#	60
44) chloroform	9.879	85	61049	21.58	ug/L		97
45) t-butyl formate	9.916	59	18975	26.76	ug/L		81
47) methacrylonitrile	9.702	67	13861	17.71	ug/L		92
48) 1,1,1-trichloroethane	10.125	97	219904	42.80	ug/L		96
49) cyclohexane	10.230	84	86044	17.86	ug/L	#	68
50) 1,1-dichloropropene	10.298	75	61137	20.93	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266664.d
Acq On : 14 Dec 2017 3:43 pm
Operator : CHELSEAS
Sample : jc57306-7ms Inst : GCMSN
Misc : MS23149,VN11237,5,,,,5
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 01:51:51 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) carbon tetrachloride	10.324	117	95868	21.04	ug/L		95
56) 2,2,4-trimethylpentane	10.648	57	172635	19.25	ug/L		91
57) benzene	10.549	78	177830	21.08	ug/L		93
58) tert-amyl methyl ether	10.638	73	148231	20.01	ug/L		87
59) 1,2-dichloroethane	10.585	62	62039	20.75	ug/L		92
62) trichloroethene	11.281	95	411811	191.22	ug/L		91
64) 1,2-dichloropropane	11.590	63	46515	22.04	ug/L		91
65) methylcyclohexane	11.574	83	94833	18.01	ug/L		95
66) dibromomethane	11.694	93	27994	20.80	ug/L		84
67) bromodichloromethane	11.862	83	60829	20.59	ug/L		86
68) 2-nitropropane	12.081	41	14156	30.77	ug/L		88
69) 2-chloroethyl vinyl ether	12.118	63	97032	107.31	ug/L		99
70) epichlorohydrin	12.202	57	18498	97.31	ug/L		97
71) cis-1,3-dichloropropene	12.338	75	64238	19.83	ug/L		98
72) 4-methyl-2-pentanone	12.453	58	57133	77.15	ug/L		94
73) 3-methyl-1-butanol	12.463	55	39068	340.56	ug/L		88
76) toluene	12.725	92	104759	19.30	ug/L		91
77) ethyl methacrylate	12.939	69	36331	15.25	ug/L		85
78) trans-1,3-dichloropropene	12.939	75	57920	19.57	ug/L		91
79) 1,1,2-trichloroethane	13.169	83	29698	20.85	ug/L		83
80) tetrachloroethene	13.305	164	67723	31.01	ug/L		95
81) 2-hexanone	13.352	58	54149	79.41	ug/L		94
82) 1,3-dichloropropane	13.357	76	59204	19.47	ug/L		95
84) 3,3-dimethyl-1-butanol	13.551	57	43686	148.09	ug/L		84
85) dibromochloromethane	13.619	129	45740	19.57	ug/L		95
86) 1,2-dibromoethane	13.776	107	36549	19.57	ug/L		90
87) chlorobenzene	14.288	112	121676	19.95	ug/L		97
88) 1,1,1,2-tetrachloroethane	14.367	131	60170	19.14	ug/L		96
89) ethylbenzene	14.356	91	204866	20.34	ug/L		98
90) m,p-xylene	14.487	106	160948	36.88	ug/L	#	62
91) o-xylene	14.916	106	86512	19.18	ug/L		95
92) styrene	14.932	104	132655	20.67	ug/L		96
94) bromoform	15.178	173	32061	18.77	ug/L		98
95) isopropylbenzene	15.293	105	234110	19.86	ug/L		98
98) bromobenzene	15.701	156	61719	18.63	ug/L		92
99) 1,1,2,2-tetrachloroethane	15.601	83	53863	18.83	ug/L		98
100) trans-1,4-dichloro-2-b...	15.638	53	14397	19.92	ug/L		77
101) 1,2,3-trichloropropane	15.690	110	14568	15.41	ug/L		96
102) n-propylbenzene	15.737	120	64537	18.74	ug/L		92
103) 2-chlorotoluene	15.873	126	60470	19.06	ug/L		98
104) 4-chlorotoluene	15.999	126	57864	19.81	ug/L	#	80
105) 1,3,5-trimethylbenzene	15.910	105	224656	20.57	ug/L		93
106) tert-butylbenzene	16.271	134	44729	16.96	ug/L	#	80
107) 1,2,4-trimethylbenzene	16.323	105	237984	20.97	ug/L		99
108) sec-butylbenzene	16.501	105	299250	21.20	ug/L		98
109) 1,3-dichlorobenzene	16.679	146	139249	19.63	ug/L		96
110) p-isopropyltoluene	16.642	119	265489	20.90	ug/L		97
111) 1,4-dichlorobenzene	16.783	146	144167	19.78	ug/L		96
112) 1,2-dichlorobenzene	17.181	146	147524	19.01	ug/L		95
113) benzyl chloride	16.888	91	114510	16.45	ug/L		98
115) n-butylbenzene	17.081	92	134941	19.53	ug/L		96
116) hexachloroethane	17.494	201	52477	17.25	ug/L		91
117) 1,2-dibromo-3-chloropr...	18.023	157	15810	12.46	ug/L		89
118) Nitrobenzene	18.237	77	4960	12.86	ug/L		80
119) 1,3,5-trichlorobenzene	18.216	180	177370	19.85	ug/L		96
120) 1,2,4-trichlorobenzene	18.917	180	150698	16.98	ug/L		92
121) hexachlorobutadiene	19.037	225	84103	17.46	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266664.d
Acq On : 14 Dec 2017 3:43 pm
Operator : CHELSEAS
Sample : jc57306-7ms Inst : GCMSN
Misc : MS23149,VN11237,5,,,,5
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 01:51:51 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
122) naphthalene	19.231	128	284945	17.03	ug/L	99
123) 1,2,3-trichlorobenzene	19.466	180	141629	16.79	ug/L	97

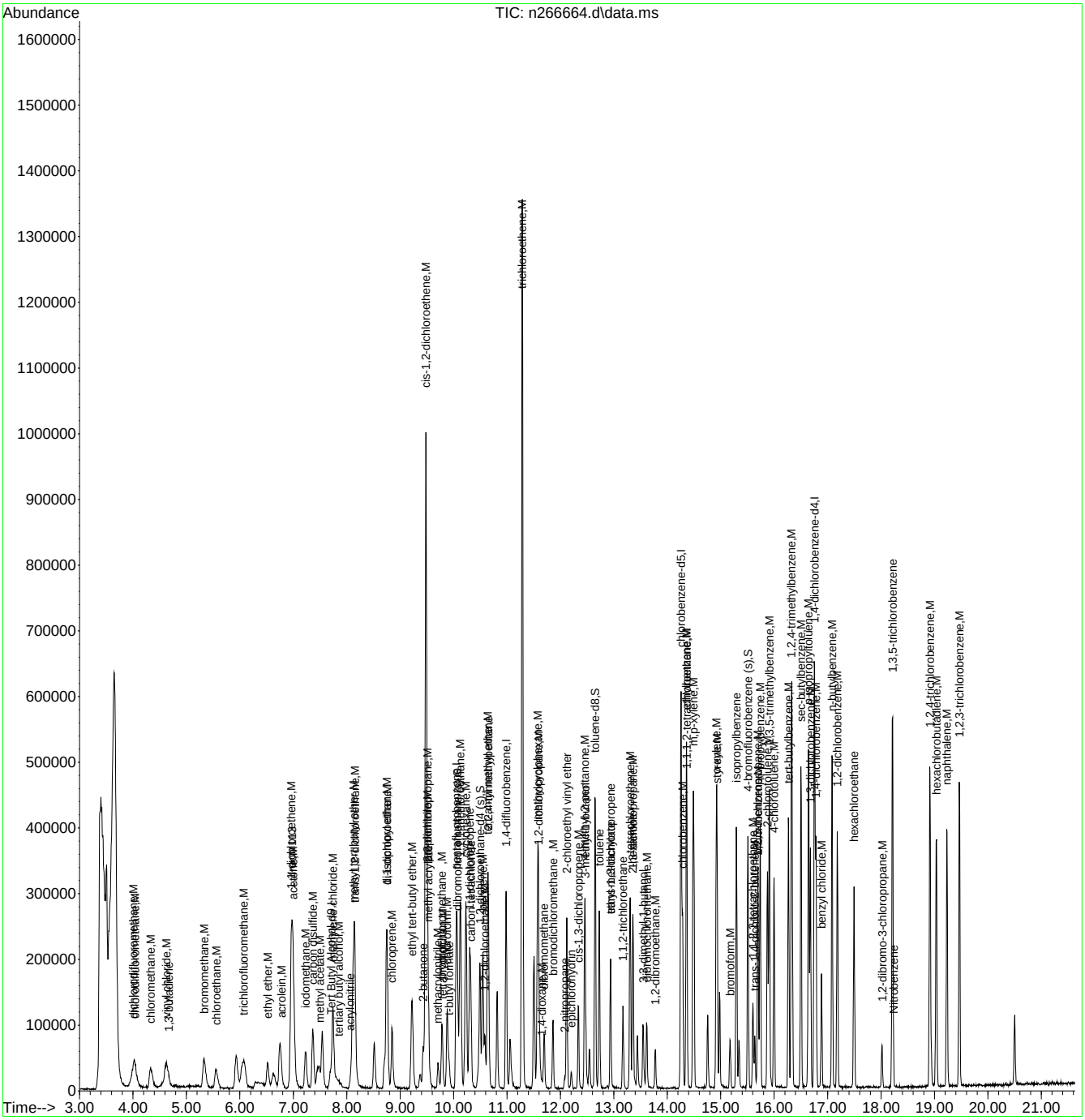
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.4.5
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266664.d
Acq On : 14 Dec 2017 3:43 pm
Operator : CHELSEAS
Sample : jc57306-7ms Inst : GCMSN
Misc : MS23149,VN11237,5,,,,5
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 01:51:51 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266665.d
Acq On : 14 Dec 2017 4:13 pm
Operator : CHELSEAS
Sample : jc57306-7msd Inst : GCMSN
Misc : MS23149,VN11237,5,,,,5
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 01:49:42 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.714	65	94470	300.00	ug/L		0.02
4) pentafluorobenzene	10.046	168	165848	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.983	114	232658	30.00	ug/L		0.00
74) chlorobenzene-d5	14.257	117	210919	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.757	152	155416	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.073	113	79576	30.86	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.87%				
54) 1,2-dichloroethane-d4 (s)	10.496	65	89831	31.39	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 104.63%				
75) toluene-d8	12.651	98	272754	29.65	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.83%				
97) 4-bromofluorobenzene (s)	15.507	95	112393	31.22	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.07%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.855	59	29380	91.80	ug/L		81
3) 1,4-dioxane	11.636	88	14792	555.06	ug/L		92
7) chlorodifluoromethane	4.027	51	77901	21.32	ug/L		91
8) dichlorodifluoromethane	3.995	85	102865	17.57	ug/L		95
9) chloromethane	4.330	50	79455	18.52	ug/L		95
10) vinyl chloride	4.617	62	97828	17.64	ug/L		91
11) 1,3-butadiene	4.670	54	5417	1.72	ug/L	#	78
12) bromomethane	5.329	94	63562	18.21	ug/L		89
13) chloroethane	5.559	64	58568	19.16	ug/L		95
14) trichlorofluoromethane	6.077	101	113947	18.30	ug/L		97
17) ethyl ether	6.516	59	35722	22.59	ug/L		95
18) acrolein	6.772	56	10259	21.94	ug/L		95
19) 1,1-dichloroethene	6.961	96	61793	22.80	ug/L		83
20) acetone	6.997	58	30543	103.96	ug/L		91
21) freon 113	6.987	101	152791	52.27	ug/L		90
23) iodomethane	7.222	142	98153	21.04	ug/L		99
24) carbon disulfide	7.363	76	193647	22.91	ug/L		99
25) methylene chloride	7.745	84	59136	22.82	ug/L		95
26) methyl acetate	7.489	43	32346	22.31	ug/L		92
27) methyl tert butyl ether	8.116	73	351452	45.06	ug/L		97
28) trans-1,2-dichloroethene	8.148	96	51221	20.05	ug/L		92
29) acrylonitrile	8.075	53	21619	24.91	ug/L	#	70
31) di-isopropyl ether	8.749	45	165730	23.26	ug/L		100
32) 1,1-dichloroethane	8.749	63	125482	31.31	ug/L		96
33) chloroprene	8.849	53	69252	22.19	ug/L		97
35) ethyl tert-butyl ether	9.220	59	165163	23.00	ug/L		94
36) 2-butanone	9.424	72	24196	104.89	ug/L	#	61
38) 2,2-dichloropropane	9.508	77	110104	24.43	ug/L		94
39) cis-1,2-dichloroethene	9.482	96	447533	161.47	ug/L		94
40) methyl acrylate	9.529	85	6319	22.34	ug/L	#	66
41) propionitrile	9.513	54	65396	226.33	ug/L		98
42) bromochloromethane	9.785	128	28009	21.21	ug/L		85
43) tetrahydrofuran	9.790	71	5130	19.36	ug/L	#	52
44) chloroform	9.874	85	62541	22.36	ug/L		98
45) t-butyl formate	9.910	59	20885	29.79	ug/L	#	75
47) methacrylonitrile	9.706	67	16211	20.95	ug/L		72
48) 1,1,1-trichloroethane	10.125	97	222389	43.77	ug/L		94
49) cyclohexane	10.224	84	87411	18.35	ug/L	#	68
50) 1,1-dichloropropene	10.297	75	64146	22.21	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266665.d
Acq On : 14 Dec 2017 4:13 pm
Operator : CHELSEAS
Sample : jc57306-7msd Inst : GCMSN
Misc : MS23149,VN11237,5,,,,5
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 01:49:42 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) carbon tetrachloride	10.313	117	104009	23.08	ug/L		96
56) 2,2,4-trimethylpentane	10.643	57	175976	19.08	ug/L		94
57) benzene	10.543	78	185633	21.40	ug/L		88
58) tert-amyl methyl ether	10.643	73	162445	21.33	ug/L		88
59) 1,2-dichloroethane	10.585	62	67915	22.10	ug/L		87
62) trichloroethene	11.281	95	411139	185.66	ug/L		92
63) methyl methacrylate	11.563	69	46114	20.33	ug/L		92
64) 1,2-dichloropropane	11.584	63	49500	22.81	ug/L		94
65) methylcyclohexane	11.579	83	101215	18.70	ug/L		99
66) dibromomethane	11.689	93	28959	20.92	ug/L		81
67) bromodichloromethane	11.861	83	65850	21.68	ug/L		88
68) 2-nitropropane	12.081	41	15556	32.88	ug/L		94
69) 2-chloroethyl vinyl ether	12.118	63	114313	122.95	ug/L		98
70) epichlorohydrin	12.206	57	20174	103.21	ug/L		96
71) cis-1,3-dichloropropene	12.337	75	70753	21.24	ug/L		96
72) 4-methyl-2-pentanone	12.452	58	63993	84.04	ug/L		93
73) 3-methyl-1-butanol	12.463	55	41584	352.54	ug/L		86
76) toluene	12.724	92	111453	20.41	ug/L		95
77) ethyl methacrylate	12.933	69	43747	18.25	ug/L		88
78) trans-1,3-dichloropropene	12.939	75	64552	21.68	ug/L		94
79) 1,1,2-trichloroethane	13.169	83	32141	22.44	ug/L		94
80) tetrachloroethene	13.305	164	68367	31.13	ug/L		87
81) 2-hexanone	13.352	58	62566	91.23	ug/L		96
82) 1,3-dichloropropane	13.357	76	63031	20.61	ug/L		85
84) 3,3-dimethyl-1-butanol	13.545	57	49593	167.16	ug/L		96
85) dibromochloromethane	13.613	129	49847	21.20	ug/L		96
86) 1,2-dibromoethane	13.775	107	39877	21.23	ug/L		98
87) chlorobenzene	14.288	112	135202	22.04	ug/L		98
88) 1,1,1,2-tetrachloroethane	14.366	131	64448	20.38	ug/L		92
89) ethylbenzene	14.356	91	220552	21.77	ug/L		98
90) m,p-xylene	14.487	106	174381	39.73	ug/L	#	55
91) o-xylene	14.916	106	90781	20.02	ug/L		84
92) styrene	14.931	104	142304	22.05	ug/L		98
94) bromoform	15.172	173	34273	19.95	ug/L		96
95) isopropylbenzene	15.292	105	255652	21.56	ug/L		96
98) bromobenzene	15.700	156	65117	20.21	ug/L		95
99) 1,1,2,2-tetrachloroethane	15.601	83	59011	21.21	ug/L		98
100) trans-1,4-dichloro-2-b...	15.637	53	14814	21.08	ug/L		98
101) 1,2,3-trichloropropane	15.695	110	16533	17.99	ug/L		92
102) n-propylbenzene	15.737	120	70133	20.95	ug/L		98
103) 2-chlorotoluene	15.873	126	63205	20.48	ug/L		97
104) 4-chlorotoluene	15.998	126	62604	22.04	ug/L		90
105) 1,3,5-trimethylbenzene	15.909	105	244711	23.04	ug/L		99
106) tert-butylbenzene	16.270	134	49095	19.14	ug/L		93
107) 1,2,4-trimethylbenzene	16.323	105	256793	23.27	ug/L		98
108) sec-butylbenzene	16.500	105	324165	23.62	ug/L		98
109) 1,3-dichlorobenzene	16.678	146	151408	21.95	ug/L		99
110) p-isopropyltoluene	16.647	119	285093	23.08	ug/L		97
111) 1,4-dichlorobenzene	16.783	146	153925	21.71	ug/L		91
112) 1,2-dichlorobenzene	17.180	146	162497	21.53	ug/L		98
113) benzyl chloride	16.887	91	121103	17.89	ug/L		96
115) n-butylbenzene	17.081	92	146572	21.82	ug/L		95
116) hexachloroethane	17.494	201	55720	18.83	ug/L		92
117) 1,2-dibromo-3-chloropr...	18.017	157	18860	15.29	ug/L		96
118) Nitrobenzene	18.232	77	5535	14.76	ug/L	#	82
119) 1,3,5-trichlorobenzene	18.216	180	190765	21.95	ug/L		98
120) 1,2,4-trichlorobenzene	18.917	180	160382	18.59	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266665.d
Acq On : 14 Dec 2017 4:13 pm
Operator : CHELSEAS
Sample : jc57306-7msd Inst : GCMSN
Misc : MS23149,VN11237,5,,,,5
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 01:49:42 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) hexachlorobutadiene	19.037	225	89393	19.08	ug/L	91
122) naphthalene	19.230	128	323911	19.90	ug/L	98
123) 1,2,3-trichlorobenzene	19.466	180	154094	18.78	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

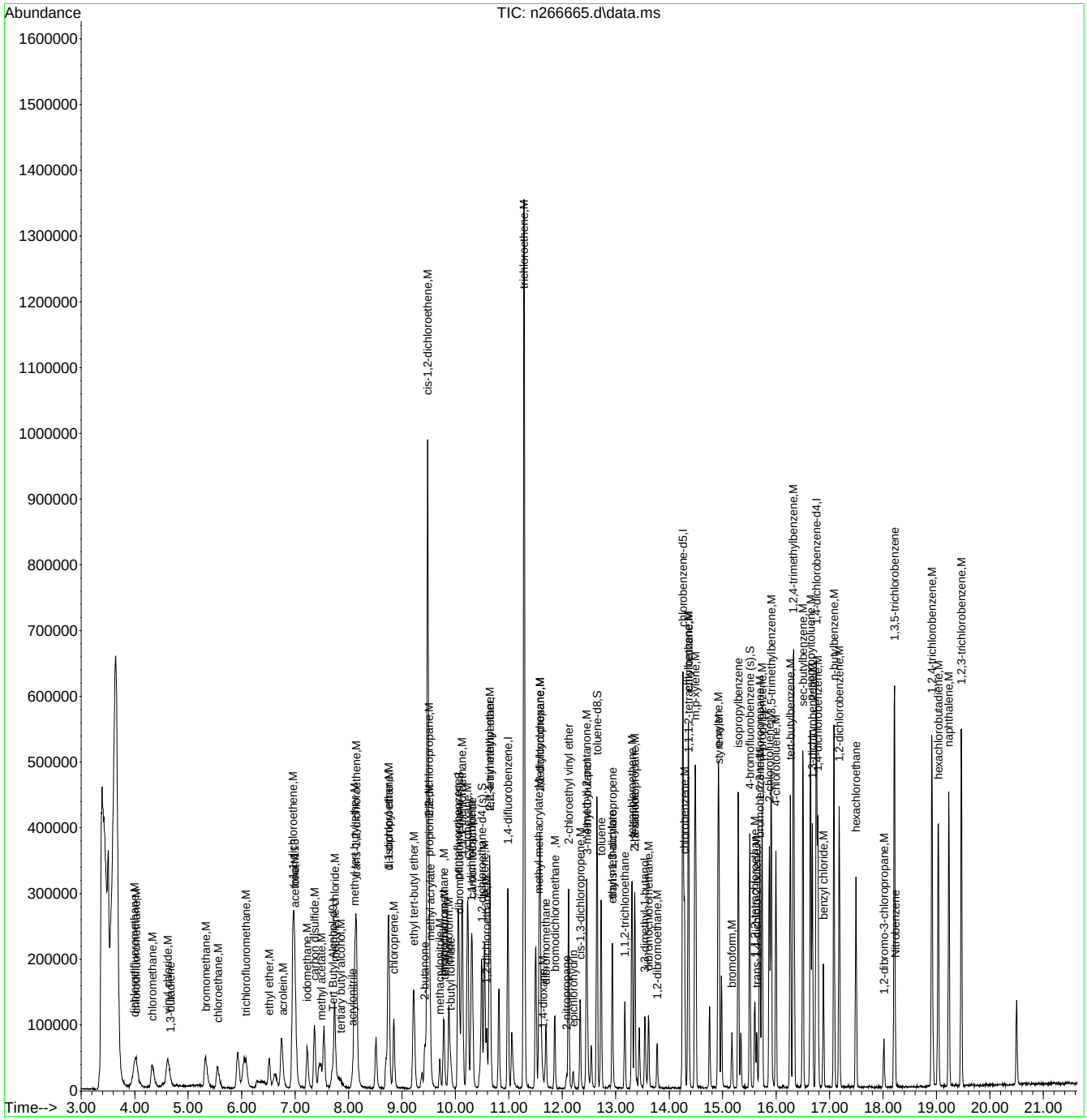
7.4.6

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266665.d
Acq On : 14 Dec 2017 4:13 pm
Operator : CHELSEAS
Sample : jc57306-7msd Inst : GCMSN
Misc : MS23149,VN11237,5,,,,5
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 01:49:42 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : X:\complete\dayton201712\dayton 20171219\chesterb\vn11239\
Data File : n266709.d
Acq On : 15 Dec 2017 2:25 pm
Operator : CHELSEAS
Sample : jc57351-4ms Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 22 13:03:31 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.708	65	78511	300.00	ug/L		0.01
4) pentafluorobenzene	10.052	168	158940	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.983	114	214302	30.00	ug/L		0.00
74) chlorobenzene-d5	14.251	117	205980	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.757	152	152699	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.067	113	73577	29.78	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.27%				
54) 1,2-dichloroethane-d4 (s)	10.496	65	83461	31.67	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 105.57%				
75) toluene-d8	12.646	98	260454	28.99	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.63%				
97) 4-bromofluorobenzene (s)	15.507	95	108939	30.80	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.67%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.824	59	29563	111.15	ug/L		86
3) 1,4-dioxane	11.636	88	13590	613.62	ug/L		88
7) chlorodifluoromethane	4.037	51	107119	30.59	ug/L		97
8) dichlorodifluoromethane	4.000	85	132405	23.59	ug/L		96
9) chloromethane	4.372	50	118970	28.94	ug/L		98
10) vinyl chloride	4.654	62	131625	24.76	ug/L		96
11) 1,3-butadiene	4.680	54	38638	12.83	ug/L	#	79
12) bromomethane	5.344	94	78567	23.49	ug/L		95
13) chloroethane	5.554	64	70359	24.02	ug/L		93
14) trichlorofluoromethane	6.071	101	145727	24.43	ug/L		97
17) ethyl ether	6.511	59	33670	22.22	ug/L		90
19) 1,1-dichloroethene	6.966	96	50885	19.59	ug/L		96
20) acetone	6.997	58	30349	107.79	ug/L	#	78
21) freon 113	6.992	101	91633	32.71	ug/L		89
23) iodomethane	7.227	142	108884	24.35	ug/L		99
24) carbon disulfide	7.363	76	227121	28.04	ug/L		100
25) methylene chloride	7.740	84	59124	23.81	ug/L		98
26) methyl acetate	7.489	43	30712	22.10	ug/L		94
27) methyl tert butyl ether	8.127	73	345658	46.25	ug/L		94
28) trans-1,2-dichloroethene	8.148	96	55183	22.54	ug/L		93
29) acrylonitrile	8.064	53	20356	24.48	ug/L	#	73
31) di-isopropyl ether	8.744	45	164154	24.04	ug/L		94
32) 1,1-dichloroethane	8.749	63	92772	24.15	ug/L		98
33) chloroprene	8.849	53	69180	23.13	ug/L		99
35) ethyl tert-butyl ether	9.220	59	164152	23.85	ug/L		96
36) 2-butanone	9.429	72	21078	95.34	ug/L	#	51
38) 2,2-dichloropropane	9.508	77	120749	27.96	ug/L		98
39) cis-1,2-dichloroethene	9.482	96	57858	21.78	ug/L		96
40) methyl acrylate	9.534	85	5942	21.92	ug/L	#	73
41) propionitrile	9.513	54	61051	220.47	ug/L		97
42) bromochloromethane	9.780	128	26712	21.11	ug/L	#	71
43) tetrahydrofuran	9.790	71	4258	16.76	ug/L	#	49
44) chloroform	9.879	85	60041	22.40	ug/L		93
45) t-butyl formate	9.916	59	20325	30.25	ug/L		80
47) methacrylonitrile	9.712	67	14365	19.37	ug/L	#	73
48) 1,1,1-trichloroethane	10.130	97	119430	24.53	ug/L		97
49) cyclohexane	10.229	84	114247	25.02	ug/L	#	75
50) 1,1-dichloropropene	10.297	75	70367	25.42	ug/L		91
51) carbon tetrachloride	10.318	117	110815	25.66	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : X:\complete\dayton201712\dayton 20171219\chesterb\vn11239\
Data File : n266709.d
Acq On : 15 Dec 2017 2:25 pm
Operator : CHELSEAS
Sample : jc57351-4ms Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 22 13:03:31 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56)	2,2,4-trimethylpentane	10.643	57	215080	25.32	ug/L		92
57)	benzene	10.543	78	196998	24.65	ug/L		94
58)	tert-amyl methyl ether	10.643	73	160014	22.81	ug/L		91
59)	1,2-dichloroethane	10.585	62	64888	22.92	ug/L		89
62)	trichloroethene	11.281	95	51827	25.41	ug/L		90
63)	methyl methacrylate	11.568	69	47632	22.80	ug/L		81
64)	1,2-dichloropropane	11.584	63	49686	24.86	ug/L		88
65)	methylcyclohexane	11.579	83	119768	24.02	ug/L		97
66)	dibromomethane	11.699	93	28347	22.24	ug/L		91
67)	bromodichloromethane	11.861	83	65028	23.24	ug/L		93
68)	2-nitropropane	12.081	41	13990	32.10	ug/L		79
69)	2-chloroethyl vinyl ether	12.118	63	78629	91.82	ug/L		98
70)	epichlorohydrin	12.201	57	18512	102.82	ug/L		99
71)	cis-1,3-dichloropropene	12.337	75	62209	20.28	ug/L		92
72)	4-methyl-2-pentanone	12.457	58	63156	90.05	ug/L		92
73)	3-methyl-1-butanol	12.463	55	44863	412.91	ug/L		98
76)	toluene	12.724	92	118624	22.25	ug/L		96
77)	ethyl methacrylate	12.939	69	42980	18.36	ug/L		94
78)	trans-1,3-dichloropropene	12.939	75	51867	17.84	ug/L		97
79)	1,1,2-trichloroethane	13.174	83	30883	22.08	ug/L		97
80)	tetrachloroethene	13.305	164	48582	22.65	ug/L		92
81)	2-hexanone	13.352	58	61085	91.21	ug/L		88
82)	1,3-dichloropropane	13.362	76	65329	21.87	ug/L		88
84)	3,3-dimethyl-1-butanol	13.545	57	47957	165.52	ug/L		97
85)	dibromochloromethane	13.613	129	50726	22.09	ug/L		89
86)	1,2-dibromoethane	13.775	107	37952	20.69	ug/L		97
87)	chlorobenzene	14.288	112	139330	23.26	ug/L		98
88)	1,1,1,2-tetrachloroethane	14.361	131	66118	21.41	ug/L		86
89)	ethylbenzene	14.356	91	243313	24.59	ug/L		97
90)	m,p-xylene	14.492	106	188891	44.06	ug/L	#	56
91)	o-xylene	14.916	106	97107	21.92	ug/L		94
92)	styrene	14.931	104	142296	22.58	ug/L		90
94)	bromoform	15.177	173	34089	20.32	ug/L		89
95)	isopropylbenzene	15.292	105	286677	24.76	ug/L		98
98)	bromobenzene	15.695	156	69723	22.02	ug/L		93
99)	1,1,2,2-tetrachloroethane	15.601	83	61624	22.55	ug/L		100
101)	1,2,3-trichloropropane	15.695	110	18272	20.24	ug/L		93
102)	n-propylbenzene	15.737	120	77565	23.58	ug/L		95
103)	2-chlorotoluene	15.873	126	70443	23.24	ug/L		92
104)	4-chlorotoluene	15.998	126	69154	24.78	ug/L		97
105)	1,3,5-trimethylbenzene	15.904	105	272848	26.15	ug/L		97
106)	tert-butylbenzene	16.265	134	51840	20.57	ug/L	#	69
107)	1,2,4-trimethylbenzene	16.323	105	281617	25.97	ug/L		99
108)	sec-butylbenzene	16.500	105	357400	26.50	ug/L		98
109)	1,3-dichlorobenzene	16.678	146	164909	24.33	ug/L		95
110)	p-isopropyltoluene	16.642	119	318521	26.25	ug/L		98
111)	1,4-dichlorobenzene	16.783	146	162437	23.32	ug/L		99
112)	1,2-dichlorobenzene	17.180	146	167011	22.53	ug/L		93
113)	benzyl chloride	16.887	91	118045	17.75	ug/L		99
115)	n-butylbenzene	17.081	92	167585	25.39	ug/L		93
116)	hexachloroethane	17.494	201	54112	18.61	ug/L		95
117)	1,2-dibromo-3-chloropr...	18.012	157	18761	15.48	ug/L		91
118)	Nitrobenzene	18.232	77	2960	8.03	ug/L		82
119)	1,3,5-trichlorobenzene	18.216	180	194705	22.81	ug/L		93
120)	1,2,4-trichlorobenzene	18.911	180	160496	18.93	ug/L		99
121)	hexachlorobutadiene	19.037	225	92798	20.16	ug/L		93
122)	naphthalene	19.230	128	310209	19.40	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : X:\complete\dayton201712\dayton 20171219\chesterb\vn11239\
Data File : n266709.d
Acq On : 15 Dec 2017 2:25 pm
Operator : CHELSEAS
Sample : jc57351-4ms Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 22 13:03:31 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

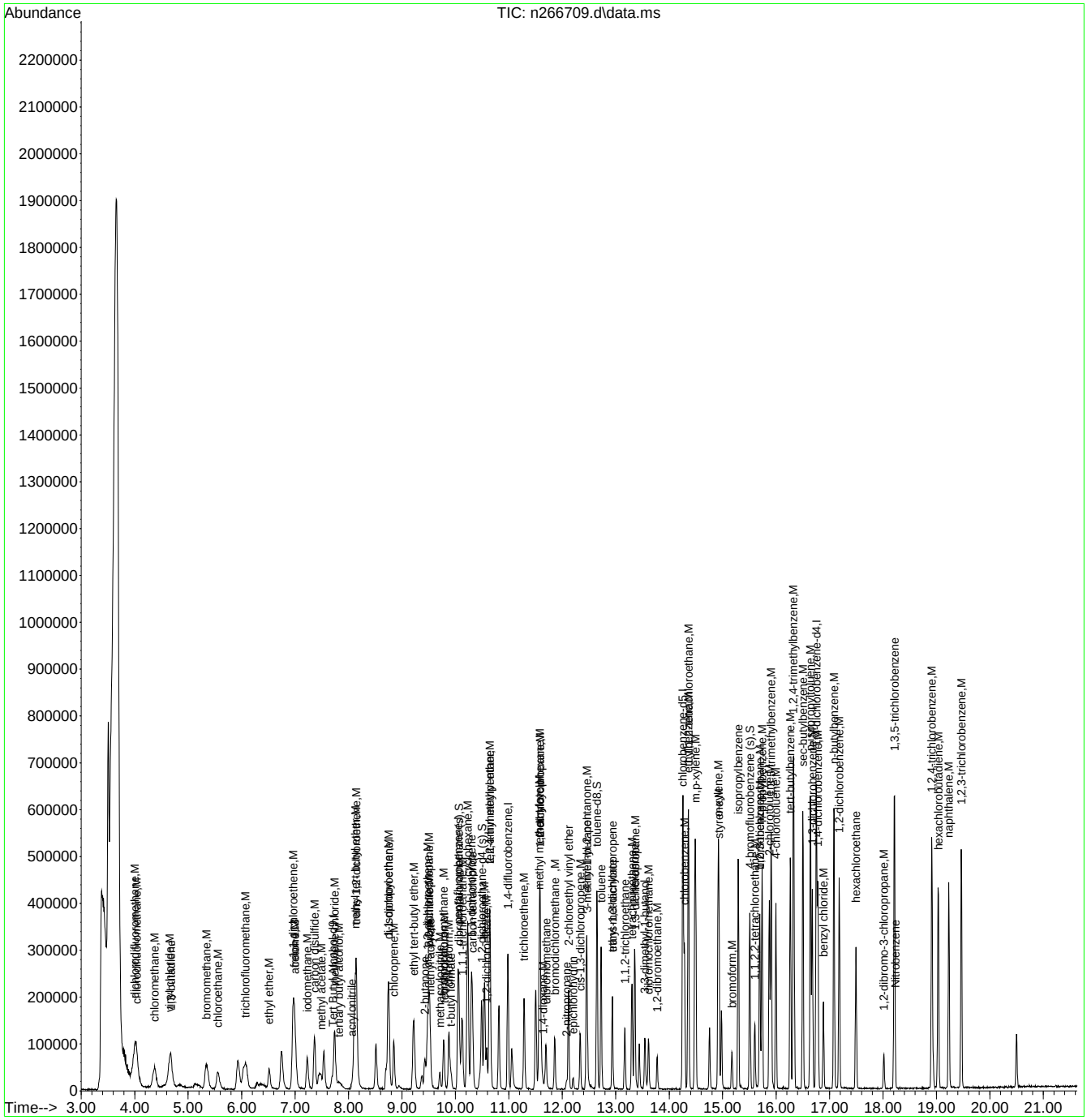
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
123) 1,2,3-trichlorobenzene	19.466	180	152796	18.96	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\complete\dayton201712\dayton 20171219\chesterb\vn11239\
Data File : n266709.d
Acq On : 15 Dec 2017 2:25 pm
Operator : CHELSEAS
Sample : jc57351-4ms Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 22 13:03:31 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266727.d
Acq On : 15 Dec 2017 11:14 pm
Operator : CHELSEAS
Sample : jc57152-1ms Inst : GCMSN
Misc : MS23092,VN11240,5,,,,20
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:02:56 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.695	65	88099	300.00	ug/L	0.00
4) pentafluorobenzene	10.049	168	147539	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	208777	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	197765	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	149225	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.070	113	69168	30.16	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.53%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	78554	30.59	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 101.97%			
75) toluene-d8	12.648	98	249426	28.91	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.37%			
97) 4-bromofluorobenzene (s)	15.504	95	102468	29.65	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.83%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.826	59	30959	103.73	ug/L #	59
3) 1,4-dioxane	11.633	88	12673	509.94	ug/L	93
7) chlorodifluoromethane	4.013	51	77204	23.75	ug/L	96
8) dichlorodifluoromethane	3.987	85	106417	20.43	ug/L	96
9) chloromethane	4.332	50	77075	20.19	ug/L	99
10) vinyl chloride	4.615	62	96129	19.48	ug/L	95
11) 1,3-butadiene	4.677	54	23507	8.41	ug/L #	82
12) bromomethane	5.321	94	62415	20.10	ug/L	96
13) chloroethane	5.546	64	51583	18.97	ug/L	91
14) trichlorofluoromethane	6.063	101	110277	19.91	ug/L	93
17) ethyl ether	6.508	59	31608	22.47	ug/L	90
18) acrolein	6.764	56	9049	21.75	ug/L #	1
19) 1,1-dichloroethene	6.958	96	42945	17.81	ug/L	98
20) acetone	6.994	58	15558	59.53	ug/L	85
21) freon 113	6.973	101	76493	29.42	ug/L	89
23) iodomethane	7.219	142	86361	20.80	ug/L	94
24) carbon disulfide	7.360	76	177666	23.63	ug/L	96
25) methylene chloride	7.737	84	53261	23.10	ug/L	100
26) methyl acetate	7.491	43	28246	21.90	ug/L	97
27) methyl tert butyl ether	8.119	73	370761	53.44	ug/L	88
28) trans-1,2-dichloroethene	8.140	96	46162	20.31	ug/L	93
29) acrylonitrile	8.061	53	18937	24.53	ug/L	94
31) di-isopropyl ether	8.746	45	152616	24.08	ug/L	93
32) 1,1-dichloroethane	8.741	63	81407	22.83	ug/L	94
33) chloroprene	8.846	53	64728	23.32	ug/L	92
35) ethyl tert-butyl ether	9.212	59	178248	27.90	ug/L	97
36) 2-butanone	9.426	72	15604	76.03	ug/L #	68
38) 2,2-dichloropropane	9.505	77	92309	23.03	ug/L	96
39) cis-1,2-dichloroethene	9.479	96	51139	20.74	ug/L	94
40) methyl acrylate	9.526	85	5474	21.76	ug/L	93
41) propionitrile	9.510	54	57898	225.24	ug/L	91
42) bromochloromethane	9.782	128	25419	21.64	ug/L	91
43) tetrahydrofuran	9.792	71	4755	20.17	ug/L	91
44) chloroform	9.876	85	53270	21.41	ug/L	95
45) t-butyl formate	9.907	59	12665	20.31	ug/L	85
47) methacrylonitrile	9.703	67	14350	20.84	ug/L #	63
48) 1,1,1-trichloroethane	10.122	97	98474	21.79	ug/L	98
49) cyclohexane	10.227	84	116311	27.44	ug/L	81
50) 1,1-dichloropropene	10.294	75	60778	23.65	ug/L	93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266727.d
Acq On : 15 Dec 2017 11:14 pm
Operator : CHELSEAS
Sample : jc57152-1ms Inst : GCMSN
Misc : MS23092,VN11240,5,,,,20
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:02:56 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) carbon tetrachloride	10.315	117	93308	23.28	ug/L		97
56) 2,2,4-trimethylpentane	10.645	57	193810	23.42	ug/L		90
57) benzene	10.546	78	918503	117.99	ug/L		93
58) tert-amyl methyl ether	10.640	73	155437	22.75	ug/L		89
59) 1,2-dichloroethane	10.587	62	68239	24.74	ug/L		91
62) trichloroethene	11.283	95	46204	23.25	ug/L		96
63) methyl methacrylate	11.565	69	46155	22.68	ug/L		96
64) 1,2-dichloropropane	11.586	63	45245	23.24	ug/L		92
65) methylcyclohexane	11.576	83	108786	22.39	ug/L		97
66) dibromomethane	11.691	93	26428	21.28	ug/L		82
67) bromodichloromethane	11.858	83	60286	22.11	ug/L		87
68) 2-nitropropane	12.078	41	9618	22.66	ug/L		86
70) epichlorohydrin	12.198	57	18111	103.26	ug/L		91
71) cis-1,3-dichloropropene	12.334	75	59232	19.82	ug/L		96
72) 4-methyl-2-pentanone	12.449	58	55989	81.94	ug/L		96
73) 3-methyl-1-butanol	12.460	55	43277	408.86	ug/L		91
76) toluene	12.727	92	1079054	210.80	ug/L		94
77) ethyl methacrylate	12.936	69	41581	18.50	ug/L		94
78) trans-1,3-dichloropropene	12.936	75	55530	19.89	ug/L		93
79) 1,1,2-trichloroethane	13.171	83	29713	22.13	ug/L		90
80) tetrachloroethene	13.302	164	41756	20.28	ug/L		90
81) 2-hexanone	13.354	58	48799	75.89	ug/L		94
82) 1,3-dichloropropane	13.359	76	60556	21.12	ug/L		99
84) 3,3-dimethyl-1-butanol	13.548	57	44917	161.47	ug/L		94
85) dibromochloromethane	13.610	129	46880	21.27	ug/L		95
86) 1,2-dibromoethane	13.773	107	36361	20.65	ug/L		92
87) chlorobenzene	14.285	112	126001	21.91	ug/L		97
88) 1,1,1,2-tetrachloroethane	14.364	131	60519	20.41	ug/L		89
89) ethylbenzene	14.358	91	215180	22.65	ug/L		98
90) m,p-xylene	14.484	106	533647	129.66	ug/L	#	58
91) o-xylene	14.918	106	282739	66.48	ug/L		94
92) styrene	14.928	104	147727	24.41	ug/L		77
94) bromoform	15.174	173	33235	20.64	ug/L		92
95) isopropylbenzene	15.294	105	254642	22.91	ug/L		99
98) bromobenzene	15.697	156	65114	21.05	ug/L		95
99) 1,1,2,2-tetrachloroethane	15.603	83	54952	20.57	ug/L		87
101) 1,2,3-trichloropropane	15.692	110	16636	18.85	ug/L		95
102) n-propylbenzene	15.734	120	67117	20.88	ug/L		91
103) 2-chlorotoluene	15.875	126	64204	21.67	ug/L		97
104) 4-chlorotoluene	16.001	126	62593	22.96	ug/L		99
105) 1,3,5-trimethylbenzene	15.906	105	296496	29.08	ug/L		96
106) tert-butylbenzene	16.267	134	48492	19.69	ug/L	#	82
107) 1,2,4-trimethylbenzene	16.325	105	488512	46.10	ug/L		98
108) sec-butylbenzene	16.503	105	321974	24.43	ug/L		98
109) 1,3-dichlorobenzene	16.675	146	146038	22.05	ug/L		96
110) p-isopropyltoluene	16.644	119	282862	23.85	ug/L		98
111) 1,4-dichlorobenzene	16.780	146	149867	22.02	ug/L		95
112) 1,2-dichlorobenzene	17.183	146	155749	21.50	ug/L		94
113) benzyl chloride	16.884	91	90870	13.98	ug/L		97
115) n-butylbenzene	17.083	92	150085	23.27	ug/L		93
116) hexachloroethane	17.496	201	54285	19.11	ug/L		95
117) 1,2-dibromo-3-chloropr...	18.014	157	18078	15.26	ug/L		87
118) Nitrobenzene	18.229	77	4355	12.10	ug/L		82
119) 1,3,5-trichlorobenzene	18.213	180	186969	22.41	ug/L		99
120) 1,2,4-trichlorobenzene	18.914	180	156636	18.90	ug/L		96
121) hexachlorobutadiene	19.034	225	88808	19.74	ug/L		95
122) naphthalene	19.233	128	374187	23.95	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266727.d
Acq On : 15 Dec 2017 11:14 pm
Operator : CHELSEAS
Sample : jc57152-1ms Inst : GCMSN
Misc : MS23092,VN11240,5,,,,20
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:02:56 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

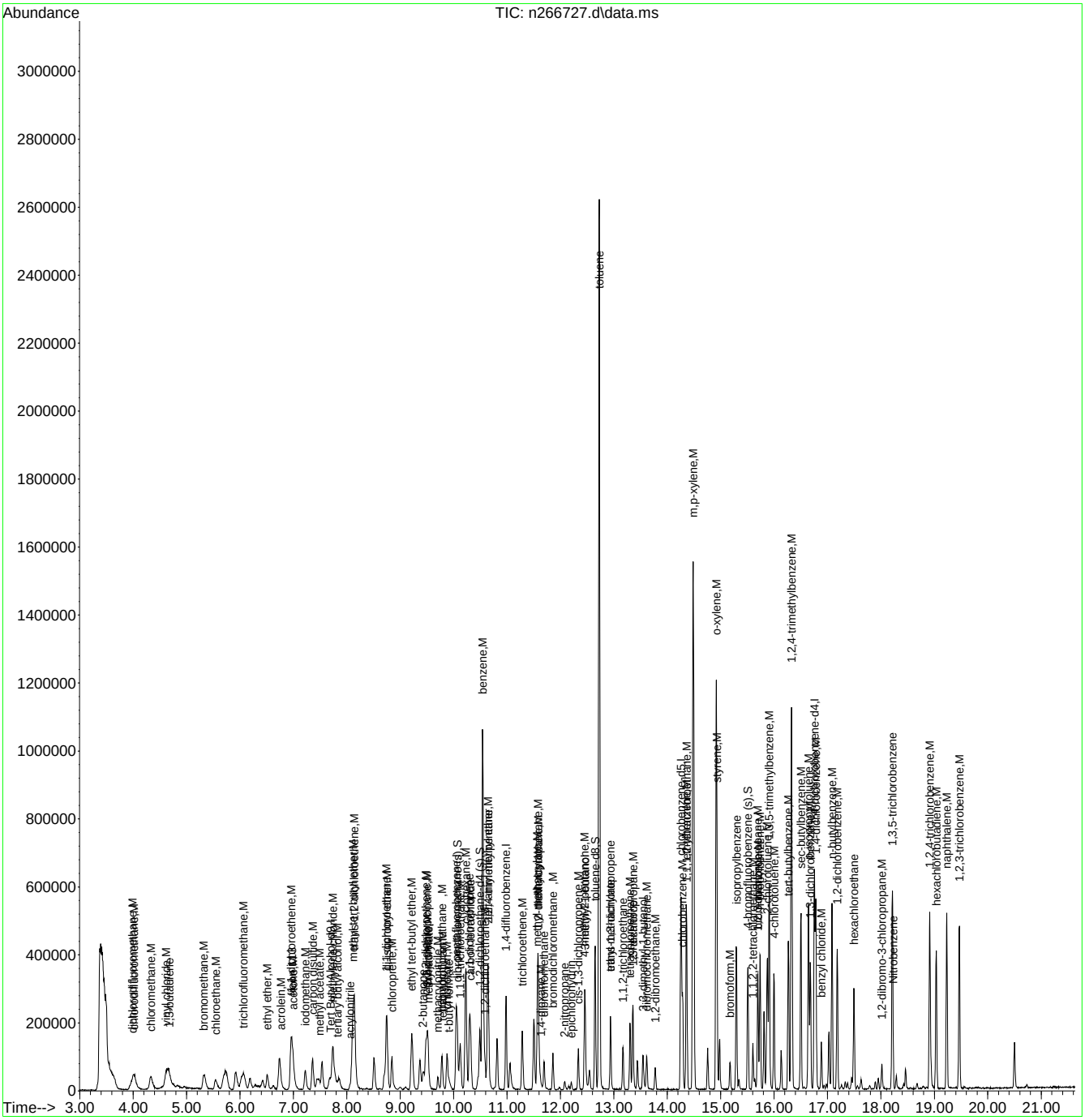
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
123) 1,2,3-trichlorobenzene	19.468	180	147288	18.70	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266727.d
Acq On : 15 Dec 2017 11:14 pm
Operator : CHELSEAS
Sample : jc57152-1ms Inst : GCMSN
Misc : MS23092,VN11240,5,,,,20
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:02:56 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266728.d
Acq On : 15 Dec 2017 11:43 pm
Operator : CHELSEAS
Sample : jc57152-1msd Inst : GCMSN
Misc : MS23092,VN11240,5,,,,20
ALS Vial : 34 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:03:18 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.707	65	88496	300.00	ug/L		0.01
4) pentafluorobenzene	10.050	168	162108	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.981	114	223720	30.00	ug/L		0.00
74) chlorobenzene-d5	14.255	117	207076	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.755	152	152425	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.071	113	73550	29.19	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.30%				
54) 1,2-dichloroethane-d4 (s)	10.495	65	84154	30.59	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 101.97%				
75) toluene-d8	12.649	98	262049	29.01	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.70%				
97) 4-bromofluorobenzene (s)	15.505	95	112405	31.84	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 106.13%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.817	59	30963	103.28	ug/L		56
3) 1,4-dioxane	11.640	88	13015	521.35	ug/L		94
7) chlorodifluoromethane	4.020	51	80548	22.55	ug/L		97
8) dichlorodifluoromethane	3.988	85	105817	18.49	ug/L		93
9) chloromethane	4.339	50	81557	19.45	ug/L		96
10) vinyl chloride	4.626	62	100107	18.47	ug/L		95
11) 1,3-butadiene	4.673	54	23980	7.81	ug/L	#	79
12) bromomethane	5.338	94	62491	18.32	ug/L		93
13) chloroethane	5.557	64	55702	18.65	ug/L		88
14) trichlorofluoromethane	6.059	101	112539	18.50	ug/L		98
17) ethyl ether	6.509	59	33630	21.76	ug/L		88
18) acrolein	6.776	56	9874	21.60	ug/L	#	51
19) 1,1-dichloroethene	6.954	96	44384	16.75	ug/L		92
20) acetone	6.990	58	15973	55.62	ug/L		93
21) freon 113	6.975	101	74951	26.23	ug/L		87
23) iodomethane	7.226	142	97123	21.29	ug/L		98
24) carbon disulfide	7.362	76	184220	22.30	ug/L		97
25) methylene chloride	7.744	84	57485	22.69	ug/L		94
26) methyl acetate	7.482	43	29439	20.77	ug/L		90
27) methyl tert butyl ether	8.120	73	391363	51.34	ug/L		92
28) trans-1,2-dichloroethene	8.146	96	50342	20.16	ug/L		95
29) acrylonitrile	8.068	53	20784	24.50	ug/L		80
31) di-isopropyl ether	8.742	45	160478	23.05	ug/L		93
32) 1,1-dichloroethane	8.753	63	85513	21.83	ug/L		97
33) chloroprene	8.842	53	68776	22.55	ug/L		98
35) ethyl tert-butyl ether	9.213	59	187862	26.77	ug/L		94
36) 2-butanone	9.428	72	17776	78.83	ug/L	#	77
38) 2,2-dichloropropane	9.511	77	93673	21.27	ug/L		94
39) cis-1,2-dichloroethene	9.480	96	58141	21.46	ug/L		97
40) methyl acrylate	9.527	85	5416	19.59	ug/L		90
41) propionitrile	9.511	54	60814	215.33	ug/L		94
42) bromochloromethane	9.778	128	24998	19.37	ug/L	#	81
43) tetrahydrofuran	9.789	71	4269	16.48	ug/L	#	65
44) chloroform	9.877	85	58225	21.29	ug/L		90
45) t-butyl formate	9.914	59	12863	18.77	ug/L	#	78
47) methacrylonitrile	9.715	67	15050	19.89	ug/L		92
48) 1,1,1-trichloroethane	10.123	97	107252	21.60	ug/L		99
49) cyclohexane	10.228	84	122121	26.22	ug/L		81
50) 1,1-dichloropropene	10.296	75	62716	22.21	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266728.d
Acq On : 15 Dec 2017 11:43 pm
Operator : CHELSEAS
Sample : jc57152-1msd Inst : GCMSN
Misc : MS23092,VN11240,5,,,,20
ALS Vial : 34 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:03:18 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) carbon tetrachloride	10.317	117	95628	21.71	ug/L		89
56) 2,2,4-trimethylpentane	10.641	57	197095	22.23	ug/L		92
57) benzene	10.542	78	960356	115.13	ug/L		91
58) tert-amyl methyl ether	10.641	73	164173	22.42	ug/L		92
59) 1,2-dichloroethane	10.583	62	74845	25.32	ug/L		95
62) trichloroethene	11.284	95	48879	22.95	ug/L		90
63) methyl methacrylate	11.567	69	48348	22.17	ug/L		81
64) 1,2-dichloropropane	11.582	63	46908	22.48	ug/L		91
65) methylcyclohexane	11.577	83	113099	21.72	ug/L		97
66) dibromomethane	11.692	93	28346	21.30	ug/L		92
67) bromodichloromethane	11.860	83	62907	21.53	ug/L		93
68) 2-nitropropane	12.079	41	10107	22.22	ug/L		86
70) epichlorohydrin	12.205	57	19037	101.29	ug/L		92
71) cis-1,3-dichloropropene	12.336	75	66533	20.77	ug/L		93
72) 4-methyl-2-pentanone	12.451	58	62680	85.60	ug/L		94
73) 3-methyl-1-butanol	12.466	55	43978	387.73	ug/L		96
76) toluene	12.728	92	1128656	210.57	ug/L		95
77) ethyl methacrylate	12.937	69	44539	18.93	ug/L		92
78) trans-1,3-dichloropropene	12.937	75	62798	21.48	ug/L		92
79) 1,1,2-trichloroethane	13.172	83	29717	21.13	ug/L		89
80) tetrachloroethene	13.298	164	43874	20.35	ug/L		93
81) 2-hexanone	13.355	58	53719	79.79	ug/L		99
82) 1,3-dichloropropane	13.361	76	62392	20.78	ug/L		98
84) 3,3-dimethyl-1-butanol	13.544	57	48496	166.49	ug/L		92
85) dibromochloromethane	13.617	129	46991	20.36	ug/L		96
86) 1,2-dibromoethane	13.774	107	37921	20.56	ug/L		97
87) chlorobenzene	14.286	112	130596	21.69	ug/L		98
88) 1,1,1,2-tetrachloroethane	14.365	131	65808	21.20	ug/L		91
89) ethylbenzene	14.354	91	231081	23.23	ug/L		99
90) m,p-xylene	14.485	106	560887	130.15	ug/L	#	59
91) o-xylene	14.919	106	292548	65.70	ug/L		97
92) styrene	14.930	104	156671	24.73	ug/L		80
94) bromoform	15.176	173	36247	21.50	ug/L		98
95) isopropylbenzene	15.291	105	266832	22.92	ug/L		98
98) bromobenzene	15.699	156	67964	21.51	ug/L		98
99) 1,1,2,2-tetrachloroethane	15.604	83	57036	20.91	ug/L		98
101) 1,2,3-trichloropropane	15.693	110	17334	19.23	ug/L		83
102) n-propylbenzene	15.735	120	72691	22.14	ug/L		90
103) 2-chlorotoluene	15.876	126	68736	22.71	ug/L		97
104) 4-chlorotoluene	15.997	126	62417	22.41	ug/L	#	81
105) 1,3,5-trimethylbenzene	15.908	105	311623	29.92	ug/L		96
106) tert-butylbenzene	16.269	134	55205	21.95	ug/L		97
107) 1,2,4-trimethylbenzene	16.321	105	521763	48.21	ug/L		99
108) sec-butylbenzene	16.499	105	339935	25.25	ug/L		98
109) 1,3-dichlorobenzene	16.677	146	153374	22.67	ug/L		97
110) p-isopropyltoluene	16.645	119	297898	24.59	ug/L		98
111) 1,4-dichlorobenzene	16.781	146	158542	22.80	ug/L		96
112) 1,2-dichlorobenzene	17.184	146	159891	21.60	ug/L		97
113) benzyl chloride	16.886	91	97377	14.67	ug/L		99
115) n-butylbenzene	17.085	92	155627	23.62	ug/L		95
116) hexachloroethane	17.498	201	55120	18.99	ug/L		94
117) 1,2-dibromo-3-chloropr...	18.021	157	19454	16.08	ug/L		96
118) Nitrobenzene	18.230	77	4621	12.57	ug/L	#	73
119) 1,3,5-trichlorobenzene	18.214	180	197980	23.23	ug/L		97
120) 1,2,4-trichlorobenzene	18.915	180	163901	19.37	ug/L		94
121) hexachlorobutadiene	19.035	225	88690	19.30	ug/L		99
122) naphthalene	19.229	128	388378	24.33	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266728.d
Acq On : 15 Dec 2017 11:43 pm
Operator : CHELSEAS
Sample : jc57152-1msd Inst : GCMSN
Misc : MS23092,VN11240,5,,,,20
ALS Vial : 34 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:03:18 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

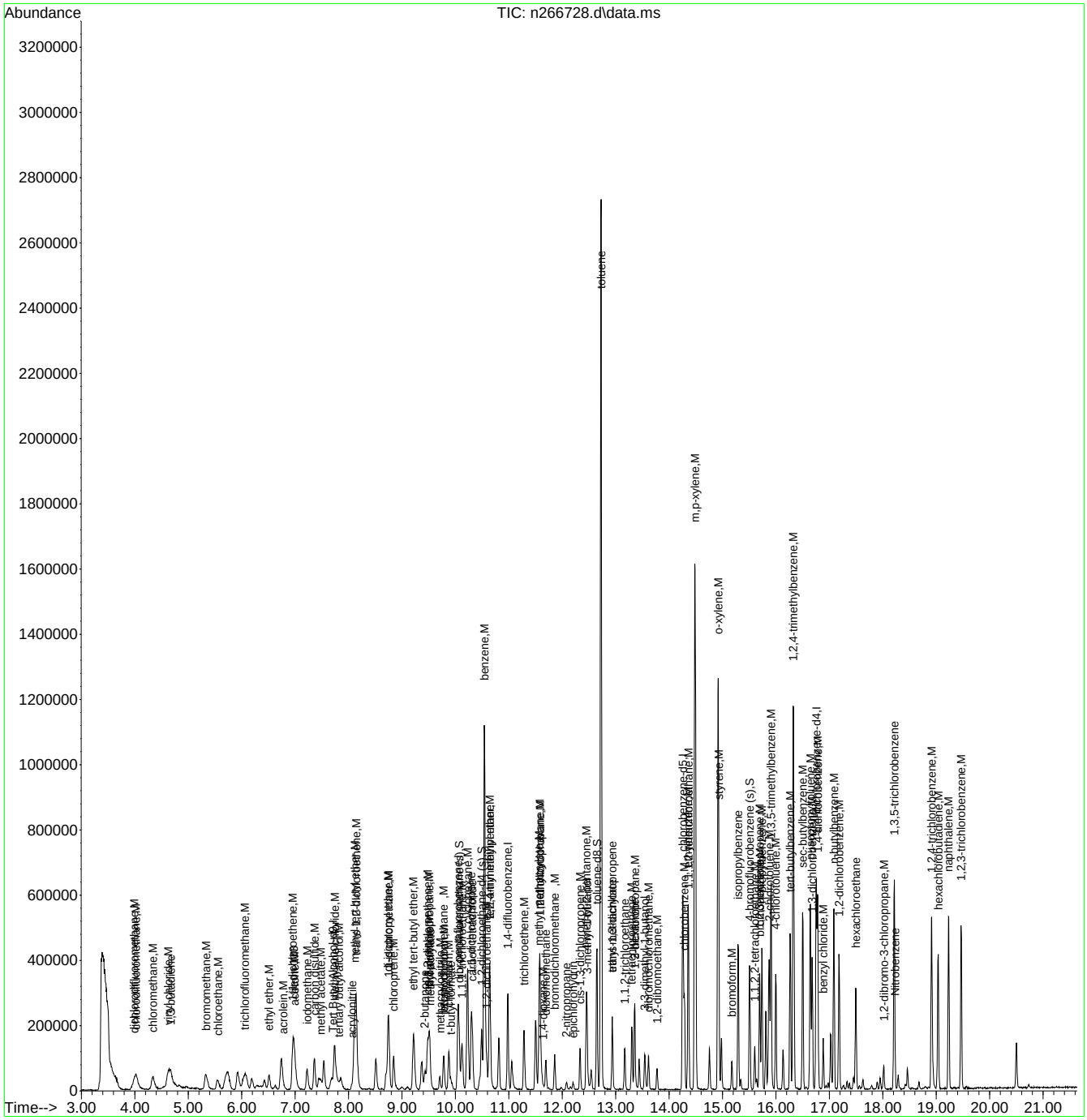
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
123) 1,2,3-trichlorobenzene	19.464	180	152390	18.94	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11240\
Data File : n266728.d
Acq On : 15 Dec 2017 11:43 pm
Operator : CHELSEAS
Sample : jc57152-1msd Inst : GCMSN
Misc : MS23092,VN11240,5,,,,20
ALS Vial : 34 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 04:03:18 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266763.d
Acq On : 18 Dec 2017 5:01 pm
Operator : CHELSEAS
Sample : jc57328-1ms Inst : GCMSN
Misc : MS23167,VN11241,5,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 01:04:14 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.722	65	61556	300.00	ug/L		0.03
4) pentafluorobenzene	10.054	168	142423	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.985	114	193673	30.00	ug/L		0.00
74) chlorobenzene-d5	14.254	117	187450	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.754	152	137924	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.075	113	68478	30.93	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.10%				
54) 1,2-dichloroethane-d4 (s)	10.494	65	73067	30.68	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 102.27%				
75) toluene-d8	12.654	98	237804	29.08	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.93%				
97) 4-bromofluorobenzene (s)	15.509	95	100077	31.33	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.43%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.837	59	18307	87.79	ug/L		83
3) 1,4-dioxane	11.639	88	6981	402.03	ug/L		91
7) chlorodifluoromethane	4.024	51	67063	21.37	ug/L		91
8) dichlorodifluoromethane	4.003	85	95204	18.93	ug/L		96
9) chloromethane	4.338	50	66301	18.00	ug/L		98
10) vinyl chloride	4.631	62	83389	17.51	ug/L		98
12) bromomethane	5.331	94	54158	18.07	ug/L		86
13) chloroethane	5.551	64	46813	17.84	ug/L		89
14) trichlorofluoromethane	6.074	101	102424	19.16	ug/L		95
17) ethyl ether	6.519	59	21785	16.04	ug/L		86
18) acrolein	6.770	56	6044	15.05	ug/L		72
19) 1,1-dichloroethene	6.963	96	34604	14.87	ug/L		93
20) acetone	7.000	58	9178	36.38	ug/L	#	81
21) freon 113	6.979	101	67688	26.97	ug/L		95
23) iodomethane	7.230	142	73521	18.35	ug/L		97
24) carbon disulfide	7.366	76	147086	20.27	ug/L		97
25) methylene chloride	7.737	84	44401	19.95	ug/L		90
26) methyl acetate	7.491	43	19313	15.51	ug/L		75
27) methyl tert butyl ether	8.130	73	238417	35.60	ug/L		91
28) trans-1,2-dichloroethene	8.145	96	40526	18.47	ug/L		90
29) acrylonitrile	8.067	53	11402	15.30	ug/L		81
31) di-isopropyl ether	8.747	45	114739	18.75	ug/L		87
32) 1,1-dichloroethane	8.757	63	69647	20.24	ug/L		99
33) chloroprene	8.851	53	51524	19.23	ug/L		87
35) ethyl tert-butyl ether	9.217	59	111994	18.16	ug/L		95
36) 2-butanone	9.427	72	10967	55.36	ug/L	#	83
38) 2,2-dichloropropane	9.505	77	92203	23.83	ug/L		94
39) cis-1,2-dichloroethene	9.484	96	43028	18.08	ug/L		97
40) methyl acrylate	9.526	85	3796	15.63	ug/L	#	66
41) propionitrile	9.515	54	39769	160.27	ug/L		85
42) bromochloromethane	9.782	128	20234	17.84	ug/L	#	76
43) tetrahydrofuran	9.793	71	2967	13.04	ug/L	#	59
44) chloroform	9.876	85	43397	18.06	ug/L		95
45) t-butyl formate	9.923	59	13683	22.73	ug/L		90
47) methacrylonitrile	9.714	67	10413	15.67	ug/L		92
48) 1,1,1-trichloroethane	10.127	97	86658	19.86	ug/L		97
49) cyclohexane	10.227	84	82631	20.20	ug/L	#	70
50) 1,1-dichloropropene	10.300	75	49389	19.91	ug/L		94
51) carbon tetrachloride	10.321	117	82610	21.35	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266763.d
Acq On : 18 Dec 2017 5:01 pm
Operator : CHELSEAS
Sample : jc57328-1ms Inst : GCMSN
Misc : MS23167,VN11241,5,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 01:04:14 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56) 2,2,4-trimethylpentane	10.645	57	141577	18.44	ug/L		93
57) benzene	10.546	78	144847	20.06	ug/L		98
58) tert-amyl methyl ether	10.640	73	108184	17.07	ug/L		89
59) 1,2-dichloroethane	10.588	62	48140	18.81	ug/L		97
62) trichloroethene	11.283	95	36578	19.84	ug/L		92
63) methyl methacrylate	11.571	69	32298	17.10	ug/L		80
64) 1,2-dichloropropane	11.587	63	37343	20.67	ug/L		93
65) methylcyclohexane	11.581	83	81112	18.00	ug/L		95
66) dibromomethane	11.696	93	20861	18.11	ug/L		87
67) bromodichloromethane	11.864	83	46103	18.23	ug/L		89
68) 2-nitropropane	12.078	41	6862	17.42	ug/L		98
69) 2-chloroethyl vinyl ether	12.120	63	8628	11.15	ug/L		98
70) epichlorohydrin	12.204	57	11130	68.41	ug/L		93
71) cis-1,3-dichloropropene	12.340	75	50705	18.29	ug/L		96
72) 4-methyl-2-pentanone	12.455	58	40766	64.31	ug/L		96
73) 3-methyl-1-butanol	12.465	55	25370	258.37	ug/L		87
76) toluene	12.727	92	86153	17.76	ug/L		94
77) ethyl methacrylate	12.941	69	27572	12.95	ug/L		94
78) trans-1,3-dichloropropene	12.941	75	43939	16.61	ug/L		95
79) 1,1,2-trichloroethane	13.171	83	22922	18.01	ug/L		94
80) tetrachloroethene	13.307	164	36179	18.54	ug/L		98
81) 2-hexanone	13.360	58	33402	54.81	ug/L		95
82) 1,3-dichloropropane	13.360	76	46962	17.28	ug/L		93
84) 3,3-dimethyl-1-butanol	13.553	57	27995	106.17	ug/L		92
85) dibromochloromethane	13.616	129	36652	17.54	ug/L		93
86) 1,2-dibromoethane	13.773	107	27858	16.69	ug/L		97
87) chlorobenzene	14.291	112	103243	18.94	ug/L		98
88) 1,1,1,2-tetrachloroethane	14.364	131	48649	17.31	ug/L		86
89) ethylbenzene	14.359	91	172319	19.14	ug/L		97
90) m,p-xylene	14.495	106	140597	36.04	ug/L	#	56
91) o-xylene	14.918	106	71878	17.83	ug/L		96
92) styrene	14.934	104	111496	19.44	ug/L		93
94) bromoform	15.174	173	26196	17.16	ug/L		91
95) isopropylbenzene	15.295	105	199849	18.97	ug/L		98
98) bromobenzene	15.698	156	53712	18.78	ug/L		96
99) 1,1,2,2-tetrachloroethane	15.603	83	41577	16.84	ug/L		90
101) 1,2,3-trichloropropane	15.692	110	12036	14.76	ug/L		84
102) n-propylbenzene	15.739	120	56649	19.06	ug/L		88
103) 2-chlorotoluene	15.875	126	49999	18.26	ug/L		99
104) 4-chlorotoluene	16.001	126	49374	19.59	ug/L		96
105) 1,3,5-trimethylbenzene	15.912	105	188840	20.04	ug/L		98
106) tert-butylbenzene	16.268	134	37439	16.45	ug/L		88
107) 1,2,4-trimethylbenzene	16.325	105	198541	20.27	ug/L		93
108) sec-butylbenzene	16.503	105	244762	20.09	ug/L		99
109) 1,3-dichlorobenzene	16.681	146	121129	19.78	ug/L		95
110) p-isopropyltoluene	16.644	119	213516	19.48	ug/L		98
111) 1,4-dichlorobenzene	16.785	146	119926	19.06	ug/L		94
112) 1,2-dichlorobenzene	17.183	146	121699	18.17	ug/L		98
113) benzyl chloride	16.885	91	81986	13.65	ug/L		96
115) n-butylbenzene	17.083	92	112114	18.81	ug/L		95
116) hexachloroethane	17.497	201	40964	15.60	ug/L		91
117) 1,2-dibromo-3-chloropr...	18.020	157	12905	11.79	ug/L		92
118) Nitrobenzene	18.239	77	2216	6.66	ug/L		93
119) 1,3,5-trichlorobenzene	18.213	180	138906	18.01	ug/L		99
120) 1,2,4-trichlorobenzene	18.914	180	111389	14.54	ug/L		94
121) hexachlorobutadiene	19.040	225	68042	16.37	ug/L		99
122) naphthalene	19.233	128	198564	13.75	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266763.d
Acq On : 18 Dec 2017 5:01 pm
Operator : CHELSEAS
Sample : jc57328-1ms Inst : GCMSN
Misc : MS23167,VN11241,5,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 01:04:14 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
123) 1,2,3-trichlorobenzene	19.468	180	103175	14.17	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

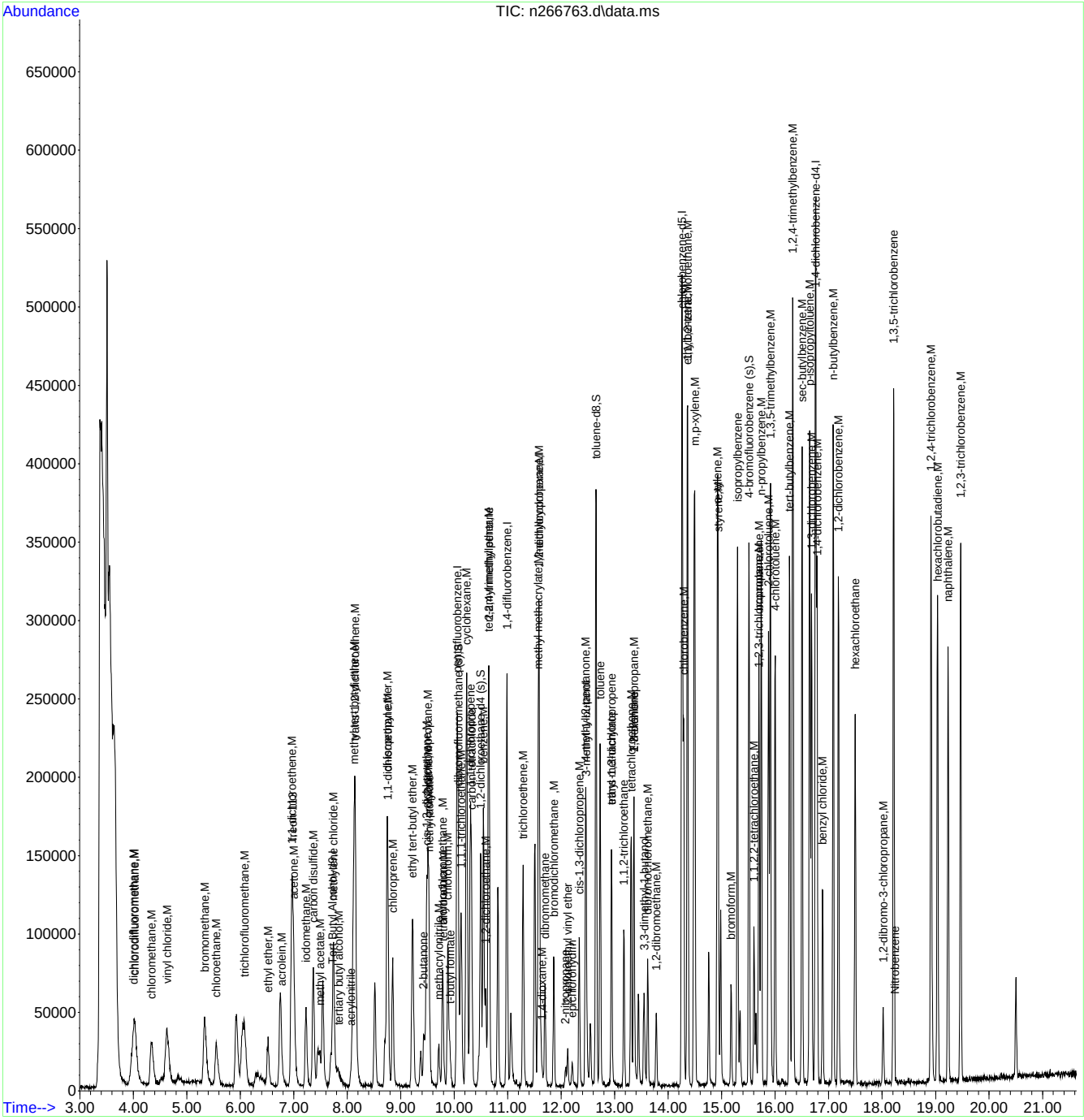
7.4.10

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266763.d
Acq On : 18 Dec 2017 5:01 pm
Operator : CHELSEAS
Sample : jc57328-1ms Inst : GCMSN
Misc : MS23167,VN11241,5,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 01:04:14 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266808.d
Acq On : 19 Dec 2017 5:57 pm
Operator : CHELSEAS
Sample : jc57103-2ms Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 02:39:32 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.714	65	83482	300.00	ug/L		0.02
4) pentafluorobenzene	10.057	168	156497	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.983	114	228840	30.00	ug/L		0.00
74) chlorobenzene-d5	14.257	117	215371	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.757	152	149496	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.078	113	75787	31.15	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.83%				
54) 1,2-dichloroethane-d4 (s)	10.497	65	85029	30.21	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 100.70%				
75) toluene-d8	12.651	98	273889	29.15	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.17%				
97) 4-bromofluorobenzene (s)	15.507	95	113754	32.85	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 109.50%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.840	59	26232	92.76	ug/L		90
3) 1,4-dioxane	11.642	88	9324	395.93	ug/L		93
7) chlorodifluoromethane	4.027	51	73448	21.30	ug/L		96
8) dichlorodifluoromethane	4.006	85	110457	19.99	ug/L		96
9) chloromethane	4.336	50	96913	23.94	ug/L		94
10) vinyl chloride	4.634	62	113049	21.60	ug/L		92
12) bromomethane	5.340	94	72980	22.16	ug/L		92
13) chloroethane	5.549	64	63611	22.06	ug/L		94
14) trichlorofluoromethane	6.061	101	110643	18.84	ug/L		94
17) ethyl ether	6.522	59	31997	21.45	ug/L		91
18) acrolein	6.757	56	9470	21.46	ug/L		66
19) 1,1-dichloroethene	6.956	96	38745	15.15	ug/L		95
20) acetone	6.998	58	12805	46.19	ug/L		93
21) freon 113	6.987	101	70307	25.49	ug/L		90
23) iodomethane	7.233	142	81583	18.53	ug/L		96
24) carbon disulfide	7.359	76	170525	21.38	ug/L		99
25) methylene chloride	7.746	84	49888	20.40	ug/L		92
26) methyl acetate	7.489	43	25955	18.97	ug/L		79
27) methyl tert butyl ether	8.117	73	321989	43.75	ug/L		96
28) trans-1,2-dichloroethene	8.148	96	45965	19.07	ug/L		97
29) acrylonitrile	8.075	53	17335	21.17	ug/L		73
31) di-isopropyl ether	8.755	45	159881	23.78	ug/L		94
32) 1,1-dichloroethane	8.750	63	78557	20.77	ug/L		94
33) chloroprene	8.849	53	65278	22.17	ug/L		92
35) ethyl tert-butyl ether	9.220	59	152627	22.53	ug/L		99
36) 2-butanone	9.430	72	14332	65.84	ug/L	#	67
38) 2,2-dichloropropane	9.519	77	101357	23.84	ug/L		95
39) cis-1,2-dichloroethene	9.482	96	49363	18.87	ug/L		93
40) methyl acrylate	9.534	85	4743	17.77	ug/L	#	48
41) propionitrile	9.513	54	51831	190.10	ug/L		91
42) bromochloromethane	9.785	128	22278	17.88	ug/L	#	80
43) tetrahydrofuran	9.801	71	4384	17.53	ug/L	#	67
44) chloroform	9.879	85	52548	19.91	ug/L		92
45) t-butyl formate	9.916	59	19797	29.93	ug/L		90
47) methacrylonitrile	9.707	67	12892	17.65	ug/L	#	50
48) 1,1,1-trichloroethane	10.131	97	97907	20.42	ug/L		92
49) cyclohexane	10.230	84	90534	20.14	ug/L	#	64
50) 1,1-dichloropropene	10.298	75	58486	21.46	ug/L		85
51) carbon tetrachloride	10.319	117	85851	20.19	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266808.d
Acq On : 19 Dec 2017 5:57 pm
Operator : CHELSEAS
Sample : jc57103-2ms Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 02:39:32 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56) 2,2,4-trimethylpentane	10.648	57	171822	18.94	ug/L		93
57) benzene	10.549	78	169246	19.84	ug/L		99
58) tert-amyl methyl ether	10.643	73	144477	19.29	ug/L		90
59) 1,2-dichloroethane	10.591	62	54941	18.17	ug/L		94
62) trichloroethene	11.286	95	42024	19.29	ug/L		88
63) methyl methacrylate	11.569	69	42279	18.95	ug/L		91
64) 1,2-dichloropropane	11.590	63	46732	21.89	ug/L		84
65) methylcyclohexane	11.584	83	95442	17.92	ug/L		99
66) dibromomethane	11.700	93	23523	17.28	ug/L		82
67) bromodichloromethane	11.862	83	56899	19.04	ug/L		96
68) 2-nitropropane	12.087	41	12704	27.30	ug/L		86
69) 2-chloroethyl vinyl ether	12.123	63	72740	79.54	ug/L		94
70) epichlorohydrin	12.207	57	16449	85.56	ug/L		98
71) cis-1,3-dichloropropene	12.338	75	63846	19.49	ug/L		93
72) 4-methyl-2-pentanone	12.458	58	58465	78.06	ug/L		89
73) 3-methyl-1-butanol	12.463	55	36917	318.19	ug/L		89
76) toluene	12.730	92	190755	34.22	ug/L		99
77) ethyl methacrylate	12.944	69	44388	18.14	ug/L		97
78) trans-1,3-dichloropropene	12.944	75	58378	19.20	ug/L		93
79) 1,1,2-trichloroethane	13.169	83	27543	18.83	ug/L		91
80) tetrachloroethene	13.305	164	37978	16.93	ug/L		95
81) 2-hexanone	13.357	58	49130	70.16	ug/L		93
82) 1,3-dichloropropane	13.363	76	58417	18.71	ug/L		92
84) 3,3-dimethyl-1-butanol	13.551	57	44258	146.09	ug/L		79
85) dibromochloromethane	13.619	129	42753	17.81	ug/L		90
86) 1,2-dibromoethane	13.781	107	35028	18.26	ug/L		87
87) chlorobenzene	14.294	112	118312	18.89	ug/L		99
88) 1,1,1,2-tetrachloroethane	14.367	131	55088	17.06	ug/L		88
89) ethylbenzene	14.362	91	532924	51.52	ug/L		98
90) m,p-xylene	14.487	106	559296	124.78	ug/L	#	55
91) o-xylene	14.921	106	260630	56.28	ug/L		94
92) styrene	14.937	104	149454	22.68	ug/L		92
94) bromoform	15.178	173	30248	17.25	ug/L		96
95) isopropylbenzene	15.298	105	275984	22.80	ug/L		99
98) bromobenzene	15.701	156	57679	18.61	ug/L		96
99) 1,1,2,2-tetrachloroethane	15.606	83	51847	19.38	ug/L		95
100) trans-1,4-dichloro-2-b...	15.643	53	12739	18.85	ug/L		87
101) 1,2,3-trichloropropane	15.695	110	15174	17.17	ug/L		80
102) n-propylbenzene	15.742	120	79273	24.61	ug/L	#	80
103) 2-chlorotoluene	15.878	126	60143	20.26	ug/L		98
104) 4-chlorotoluene	15.999	126	57368	21.00	ug/L		86
105) 1,3,5-trimethylbenzene	15.910	105	386089	37.80	ug/L		99
106) tert-butylbenzene	16.271	134	46293	18.76	ug/L	#	84
107) 1,2,4-trimethylbenzene	16.323	105	771541	72.68	ug/L		99
108) sec-butylbenzene	16.506	105	315631	23.91	ug/L		99
109) 1,3-dichlorobenzene	16.684	146	129865	19.57	ug/L		93
110) p-isopropyltoluene	16.647	119	274095	23.07	ug/L		98
111) 1,4-dichlorobenzene	16.783	146	133800	19.62	ug/L		95
112) 1,2-dichlorobenzene	17.186	146	137758	18.98	ug/L		96
113) benzyl chloride	16.888	91	120191	18.46	ug/L		95
115) n-butylbenzene	17.087	92	147880	22.89	ug/L		95
116) hexachloroethane	17.500	201	47073	16.54	ug/L		95
117) 1,2-dibromo-3-chloropr...	18.018	157	17341	14.62	ug/L		79
118) Nitrobenzene	18.227	77	4195	11.63	ug/L		84
119) 1,3,5-trichlorobenzene	18.216	180	166624	19.94	ug/L		98
120) 1,2,4-trichlorobenzene	18.917	180	138437	16.68	ug/L		98
121) hexachlorobutadiene	19.037	225	70959	15.75	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266808.d
Acq On : 19 Dec 2017 5:57 pm
Operator : CHELSEAS
Sample : jc57103-2ms Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 02:39:32 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
122) naphthalene	19.236	128	503604	32.17	ug/L	97
123) 1,2,3-trichlorobenzene	19.472	180	123451	15.64	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

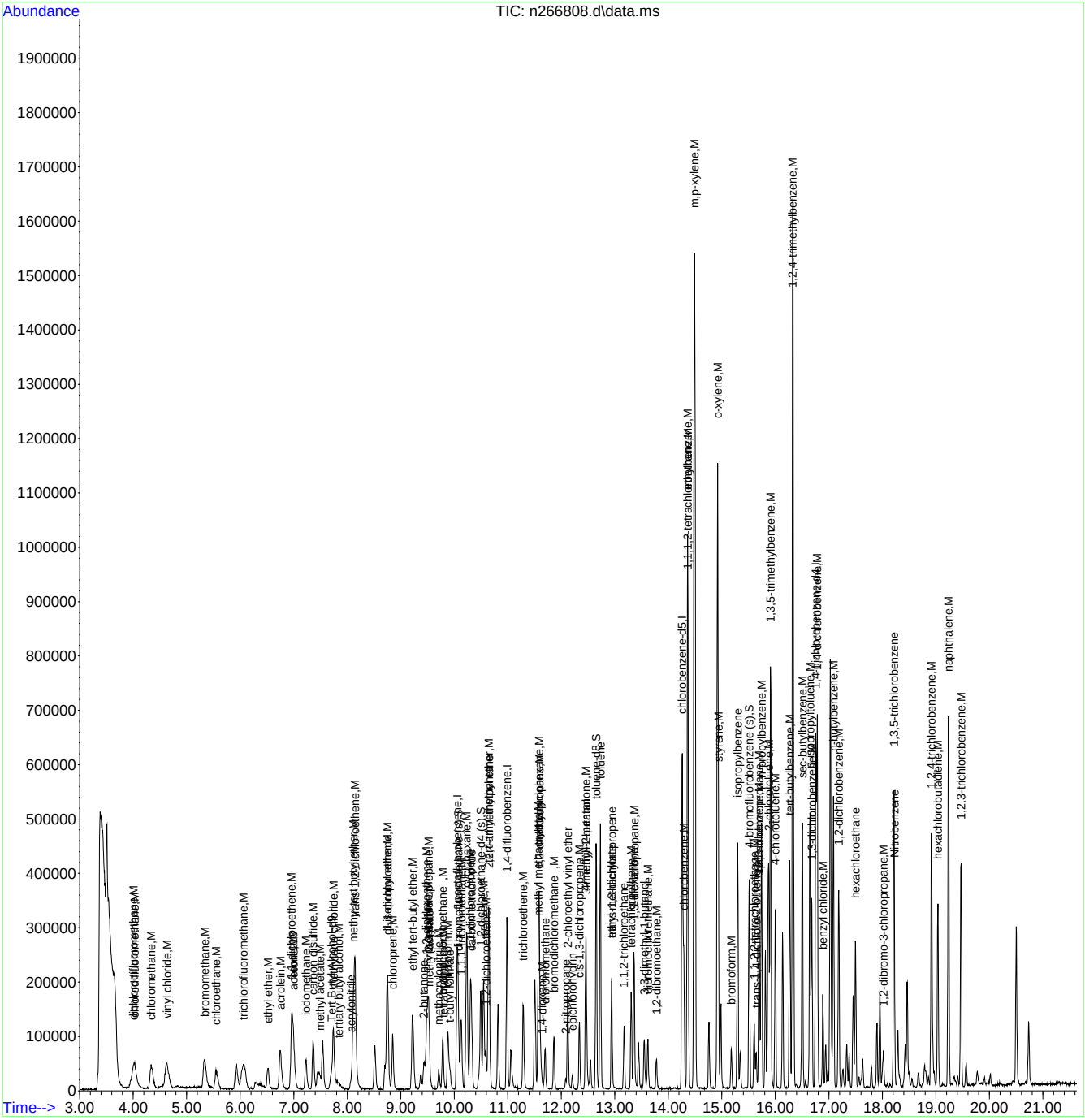
7.4.11

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266808.d
Acq On : 19 Dec 2017 5:57 pm
Operator : CHELSEAS
Sample : jc57103-2ms Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 02:39:32 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Mei Chen
12/27/17 14:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266810.d
Acq On : 19 Dec 2017 6:26 pm
Operator : CHELSEAS
Sample : jc57103-2msd Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 02:50:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.711	65	87791	300.00	ug/L		0.02
4) pentafluorobenzene	10.049	168	168105	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.980	114	241481	30.00	ug/L		0.00
74) chlorobenzene-d5	14.254	117	225421	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.754	152	158134	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.070	113	76312	29.20	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.33%				
54) 1,2-dichloroethane-d4 (s)	10.493	65	86520	29.13	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 97.10%				
75) toluene-d8	12.648	98	289972	29.49	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.30%				
97) 4-bromofluorobenzene (s)	15.509	95	117700	32.14	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 107.13%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.826	59	26351	88.60	ug/L		96
3) 1,4-dioxane	11.633	88	12593	508.50	ug/L		86
7) chlorodifluoromethane	4.018	51	78167	21.10	ug/L		100
8) dichlorodifluoromethane	4.003	85	105462	17.77	ug/L		87
9) chloromethane	4.322	50	95111	21.87	ug/L		95
10) vinyl chloride	4.609	62	110495	19.65	ug/L		94
12) bromomethane	5.321	94	71868	20.31	ug/L		85
13) chloroethane	5.546	64	58545	18.90	ug/L		87
14) trichlorofluoromethane	6.058	101	112314	17.80	ug/L		94
17) ethyl ether	6.508	59	33157	20.69	ug/L		86
18) acrolein	6.764	56	9039	19.07	ug/L		97
19) 1,1-dichloroethene	6.952	96	43622	15.88	ug/L		93
20) acetone	6.979	58	13540	45.47	ug/L	#	58
21) freon 113	6.973	101	69824	23.57	ug/L		83
23) iodomethane	7.224	142	83803	17.72	ug/L		97
24) carbon disulfide	7.355	76	168634	19.69	ug/L		96
25) methylene chloride	7.737	84	52162	19.86	ug/L		93
26) methyl acetate	7.481	43	26910	18.31	ug/L		86
27) methyl tert butyl ether	8.119	73	326268	41.27	ug/L		85
28) trans-1,2-dichloroethene	8.140	96	46330	17.89	ug/L		91
29) acrylonitrile	8.066	53	18043	20.51	ug/L		77
31) di-isopropyl ether	8.741	45	170727	23.64	ug/L		96
32) 1,1-dichloroethane	8.746	63	81762	20.13	ug/L		91
33) chloroprene	8.846	53	68689	21.72	ug/L		98
35) ethyl tert-butyl ether	9.212	59	162215	22.29	ug/L		96
36) 2-butanone	9.421	72	16371	70.01	ug/L	#	81
38) 2,2-dichloropropane	9.500	77	100589	22.02	ug/L		99
39) cis-1,2-dichloroethene	9.479	96	51250	18.24	ug/L		91
40) methyl acrylate	9.531	85	5402	18.84	ug/L		98
41) propionitrile	9.510	54	55287	188.77	ug/L		99
42) bromochloromethane	9.777	128	22985	17.17	ug/L	#	76
43) tetrahydrofuran	9.787	71	4148	15.44	ug/L	#	18
44) chloroform	9.876	85	51388	18.12	ug/L		90
45) t-butyl formate	9.913	59	19741	27.78	ug/L		91
47) methacrylonitrile	9.704	67	13966	17.80	ug/L	#	63
48) 1,1,1-trichloroethane	10.122	97	97633	18.96	ug/L		96
49) cyclohexane	10.221	84	91565	18.96	ug/L	#	78
50) 1,1-dichloropropene	10.300	75	61305	20.94	ug/L		88
51) carbon tetrachloride	10.315	117	87236	19.10	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266810.d
Acq On : 19 Dec 2017 6:26 pm
Operator : CHELSEAS
Sample : jc57103-2msd Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 02:50:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56) 2,2,4-trimethylpentane	10.640	57	174944	18.28	ug/L		96
57) benzene	10.546	78	181210	20.13	ug/L		94
58) tert-amyl methyl ether	10.634	73	149844	18.96	ug/L		91
59) 1,2-dichloroethane	10.582	62	55384	17.36	ug/L		92
62) trichloroethene	11.278	95	44463	19.34	ug/L	#	76
63) methyl methacrylate	11.565	69	44549	18.92	ug/L		87
64) 1,2-dichloropropane	11.586	63	47188	20.95	ug/L		99
65) methylcyclohexane	11.581	83	94450	16.81	ug/L		92
66) dibromomethane	11.691	93	25638	17.85	ug/L		91
67) bromodichloromethane	11.858	83	60553	19.20	ug/L		91
68) 2-nitropropane	12.083	41	11389	23.19	ug/L		91
69) 2-chloroethyl vinyl ether	12.115	63	56114	58.15	ug/L		96
70) epichlorohydrin	12.198	57	17712	87.31	ug/L		95
71) cis-1,3-dichloropropene	12.334	75	69232	20.03	ug/L		96
72) 4-methyl-2-pentanone	12.455	58	61287	77.55	ug/L		89
73) 3-methyl-1-butanol	12.465	55	39285	320.88	ug/L		95
76) toluene	12.721	92	197118	33.78	ug/L		96
77) ethyl methacrylate	12.936	69	47158	18.41	ug/L		92
78) trans-1,3-dichloropropene	12.936	75	59388	18.66	ug/L		90
79) 1,1,2-trichloroethane	13.166	83	28098	18.36	ug/L		92
80) tetrachloroethene	13.302	164	39787	16.95	ug/L		98
81) 2-hexanone	13.354	58	51526	70.30	ug/L		90
82) 1,3-dichloropropane	13.359	76	60404	18.48	ug/L		98
84) 3,3-dimethyl-1-butanol	13.548	57	48447	152.79	ug/L		86
85) dibromochloromethane	13.616	129	45422	18.08	ug/L		96
86) 1,2-dibromoethane	13.778	107	37295	18.58	ug/L		87
87) chlorobenzene	14.290	112	124576	19.00	ug/L		93
88) 1,1,1,2-tetrachloroethane	14.364	131	55892	16.54	ug/L		83
89) ethylbenzene	14.358	91	555197	51.28	ug/L		96
90) m,p-xylene	14.489	106	574474m	122.45	ug/L		
91) o-xylene	14.918	106	266535	54.98	ug/L		99
92) styrene	14.934	104	149969	21.74	ug/L		89
94) bromoform	15.174	173	32164	17.52	ug/L		98
95) isopropylbenzene	15.295	105	277196	21.88	ug/L		98
98) bromobenzene	15.697	156	62549	19.08	ug/L		90
99) 1,1,2,2-tetrachloroethane	15.603	83	55355	19.56	ug/L		97
100) trans-1,4-dichloro-2-b...	15.634	53	12281	17.18	ug/L	#	76
101) 1,2,3-trichloropropane	15.692	110	15684	16.77	ug/L		94
102) n-propylbenzene	15.739	120	83291	24.45	ug/L		95
103) 2-chlorotoluene	15.875	126	62213	19.82	ug/L		89
104) 4-chlorotoluene	15.995	126	61823	21.40	ug/L		88
105) 1,3,5-trimethylbenzene	15.906	105	390941	36.18	ug/L		99
106) tert-butylbenzene	16.267	134	49757	19.07	ug/L		87
107) 1,2,4-trimethylbenzene	16.325	105	789493	70.31	ug/L		97
108) sec-butylbenzene	16.503	105	335637	24.03	ug/L		98
109) 1,3-dichlorobenzene	16.681	146	144160	20.54	ug/L		98
110) p-isopropyltoluene	16.644	119	286321	22.78	ug/L		99
111) 1,4-dichlorobenzene	16.780	146	143016	19.83	ug/L		98
112) 1,2-dichlorobenzene	17.183	146	150488	19.60	ug/L		99
113) benzyl chloride	16.884	91	118725	17.24	ug/L		94
115) n-butylbenzene	17.083	92	158151	23.14	ug/L		91
116) hexachloroethane	17.502	201	50683	16.84	ug/L		85
117) 1,2-dibromo-3-chloropr...	18.019	157	18915	15.07	ug/L		89
118) Nitrobenzene	18.229	77	3741	9.81	ug/L		77
119) 1,3,5-trichlorobenzene	18.213	180	172747	19.54	ug/L		91
120) 1,2,4-trichlorobenzene	18.914	180	143396	16.33	ug/L		96
121) hexachlorobutadiene	19.034	225	75859	15.92	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266810.d
Acq On : 19 Dec 2017 6:26 pm
Operator : CHELSEAS
Sample : jc57103-2msd Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 02:50:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
122) naphthalene	19.233	128	497655	30.06	ug/L	99
123) 1,2,3-trichlorobenzene	19.468	180	132925	15.92	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

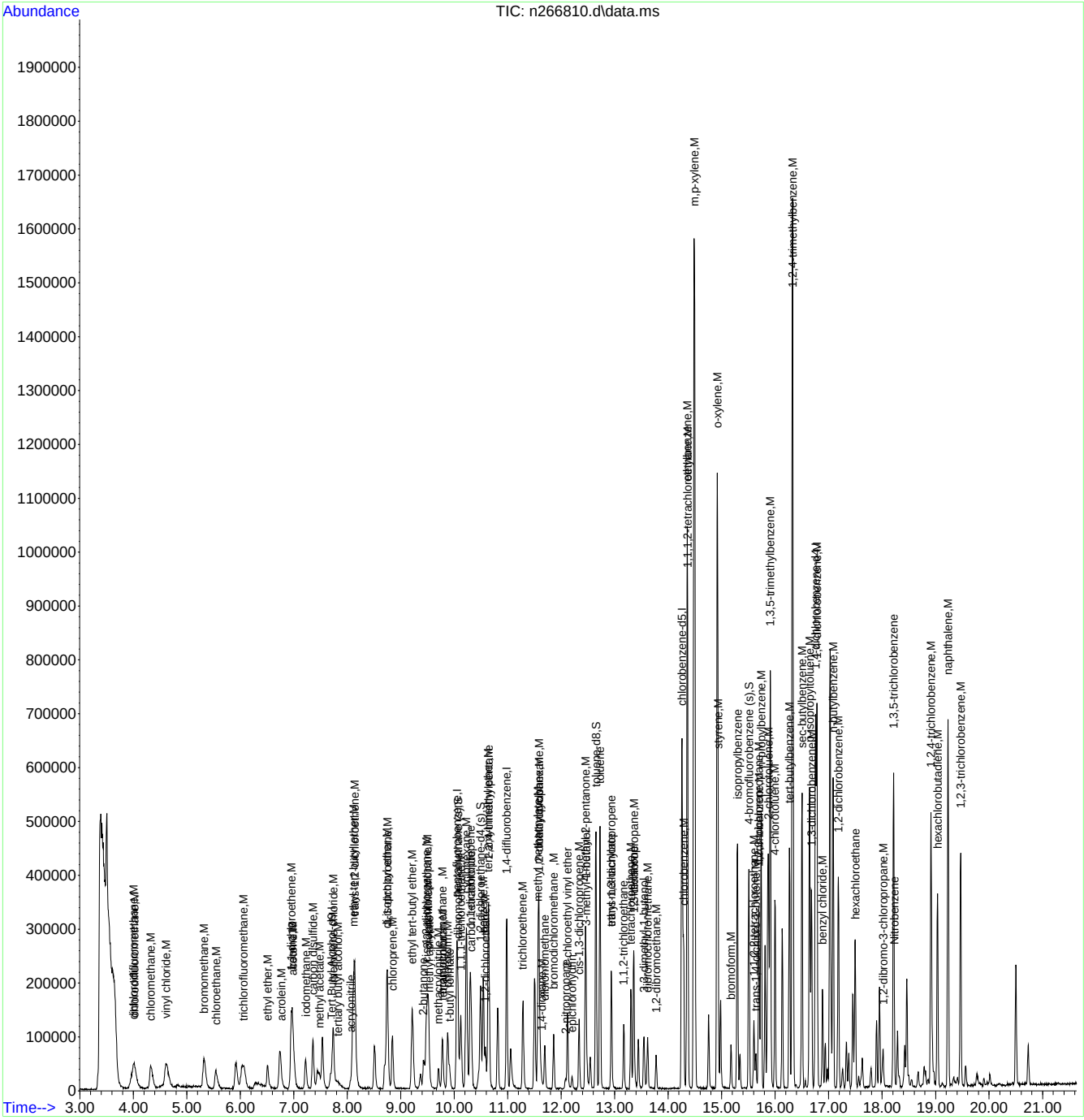
7.4.12

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266810.d
Acq On : 19 Dec 2017 6:26 pm
Operator : CHELSEAS
Sample : jc57103-2msd Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 02:50:03 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: JC57103-2MSD
Lab FileID: N266810.D
Injection Time: 12/19/17 18:26

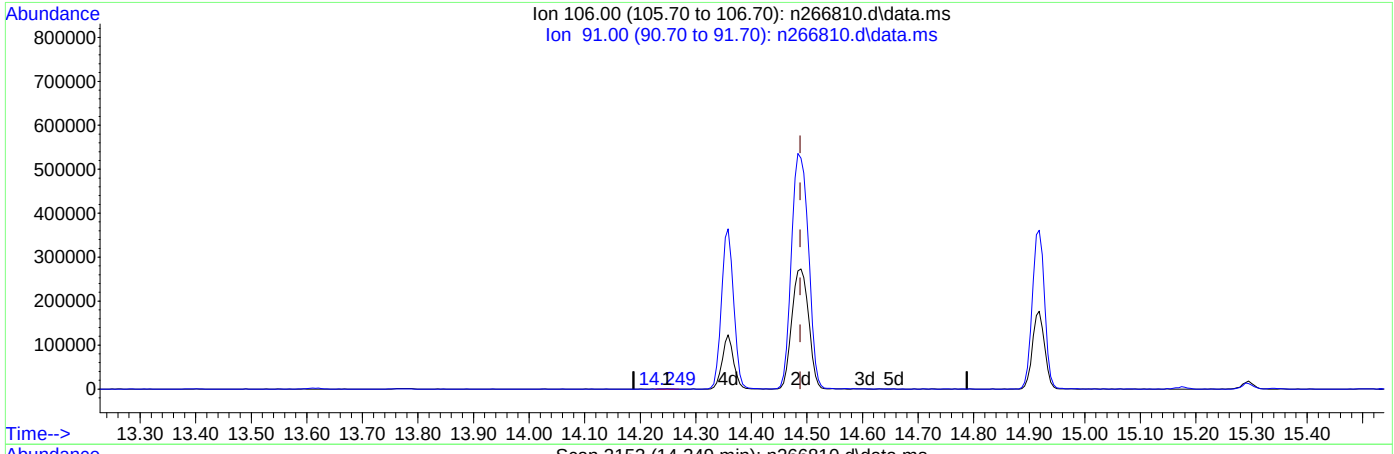
Method: EPA 624
Analyst approved: 12/27/17 12:53 Eunice Mabutas
Supervisor approved: 12/27/17 14:23 Mei Chen

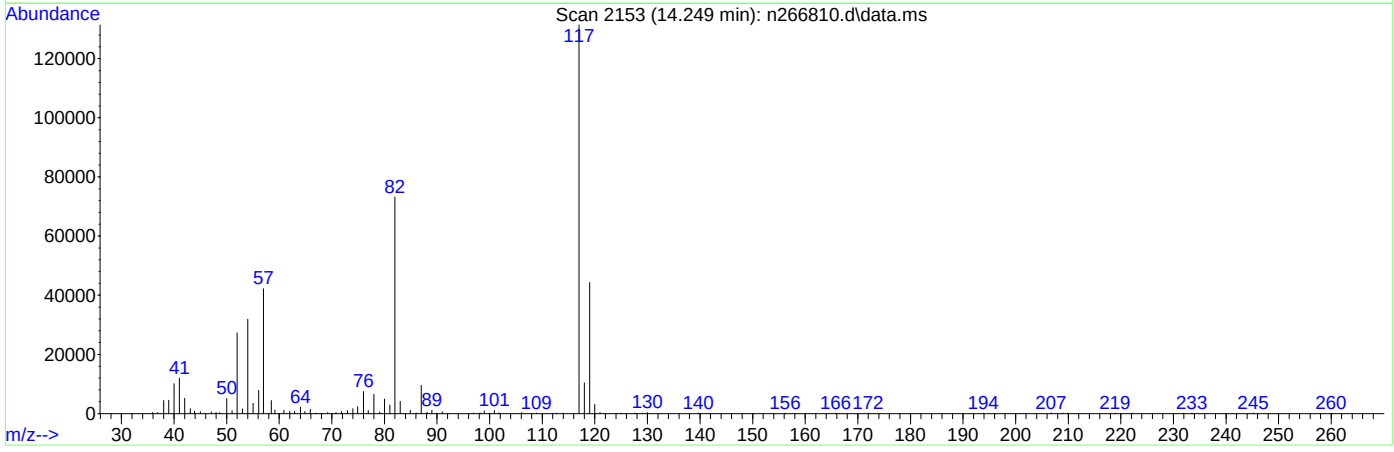
Parameter	CAS	Sig#	R.T. (min.)	Reason
m,p-Xylene			14.49	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266810.d
Acq On : 19 Dec 2017 6:26 pm
Operator : CHELSEAS
Sample : jc57103-2msd Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 08:29:04 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration





TIC: n266810.d\data.ms

(90) m,p-xylene (M)

14.249min (-0.239) 0.03ug/L

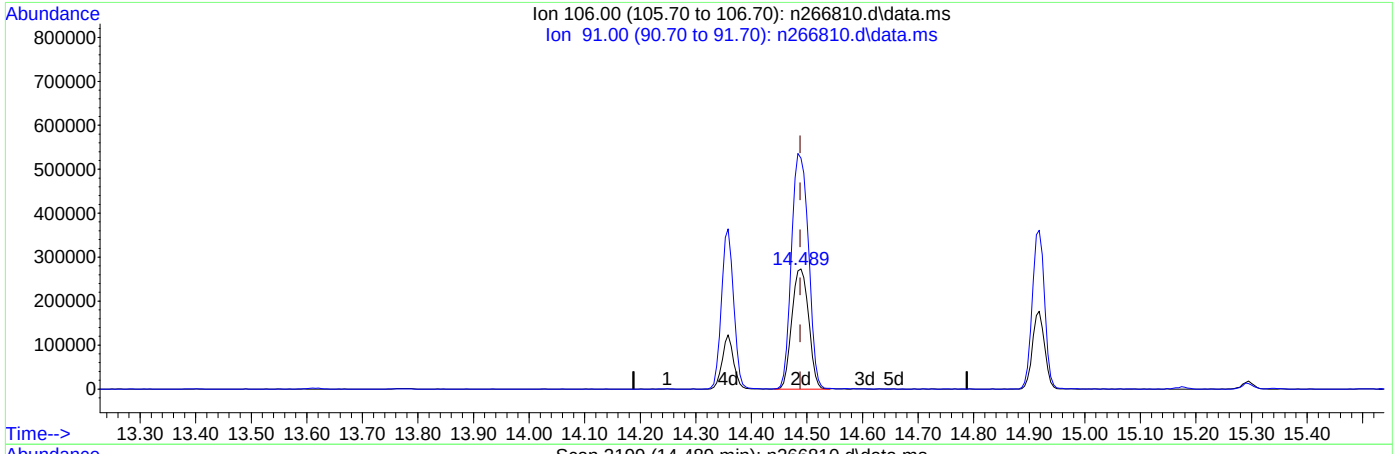
response 118

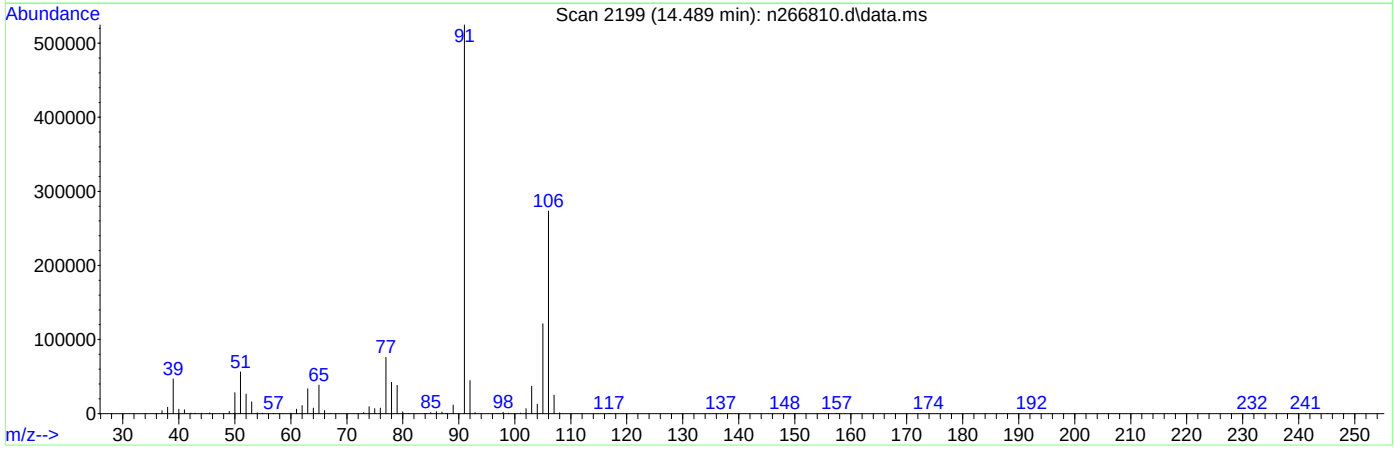
Ion	Exp%	Act%
106.00	100	100
91.00	141.30	168.35
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266810.d
Acq On : 19 Dec 2017 6:26 pm
Operator : CHELSEAS
Sample : jc57103-2msd Inst : GCMSN
Misc : MS23069,VN11243,5,,,,20
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 08:29:04 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration





TIC: n266810.d\data.ms

(90) m,p-xylene (M)

14.489min (+0.001) 122.45ug/L m

response 574474

Ion	Exp%	Act%
106.00	100	100
91.00	141.30	191.97#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : X:\complete\dayton201712\dayton 20171219\chesterb\vn11239\
Data File : n266711.d
Acq On : 15 Dec 2017 3:24 pm
Operator : CHELSEAS
Sample : jc57351-3dup Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 22 13:02:52 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

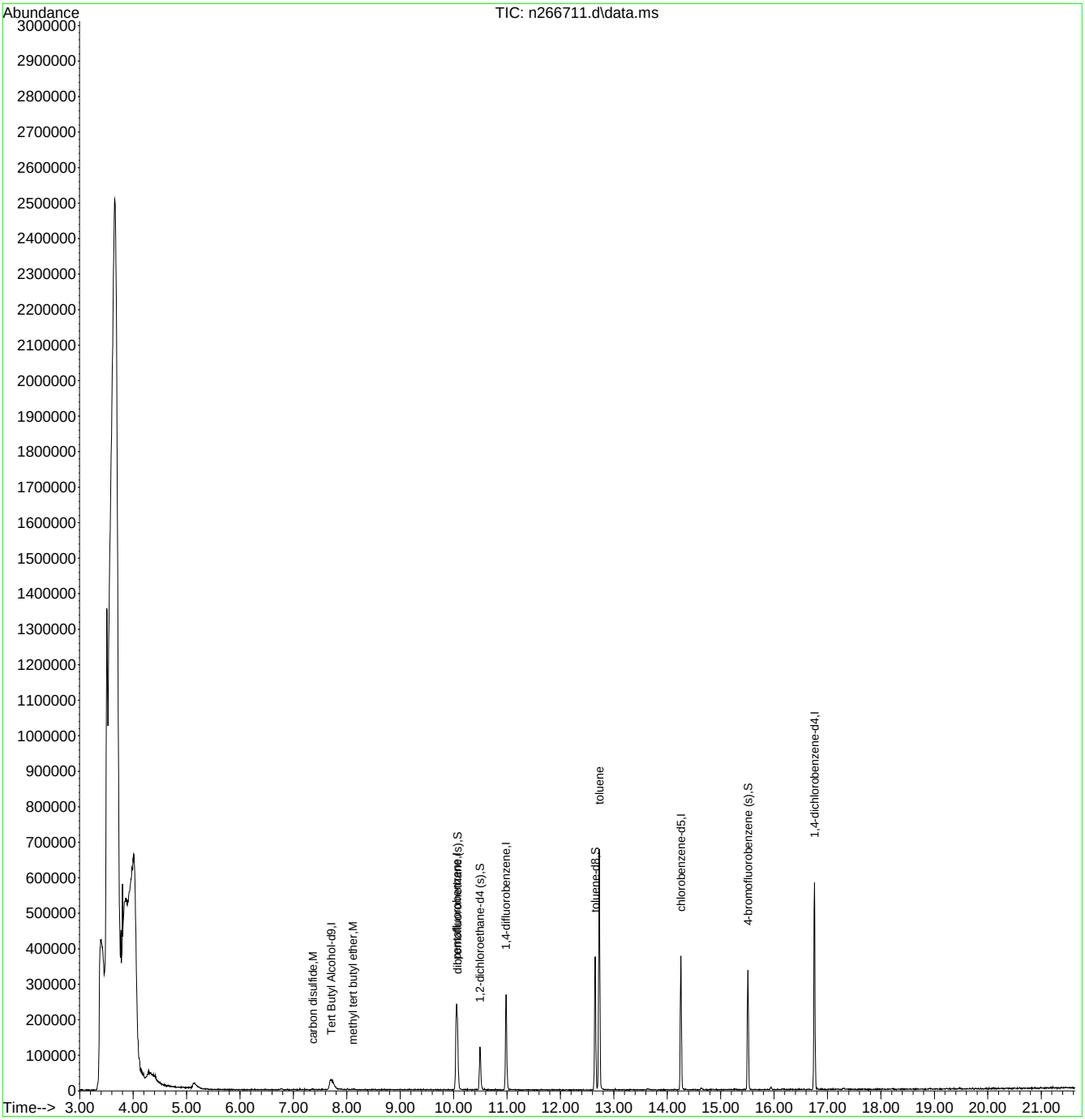
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.705	65	80776	300.00	ug/L	0.01
4) pentafluorobenzene	10.054	168	142083	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.980	114	196385	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	192461	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.754	152	141090	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.070	113	73883	33.45	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.50%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	80338	33.26	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 110.87%			
75) toluene-d8	12.648	98	226350	26.96	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 89.87%			
97) 4-bromofluorobenzene (s)	15.509	95	96425	29.51	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.37%			
Target Compounds						Qvalue
24) carbon disulfide	7.360	76	4630	0.64	ug/L	90
27) methyl tert butyl ether	8.113	73	3189	0.48	ug/L	97
76) toluene	12.726	92	273138	54.83	ug/L	92

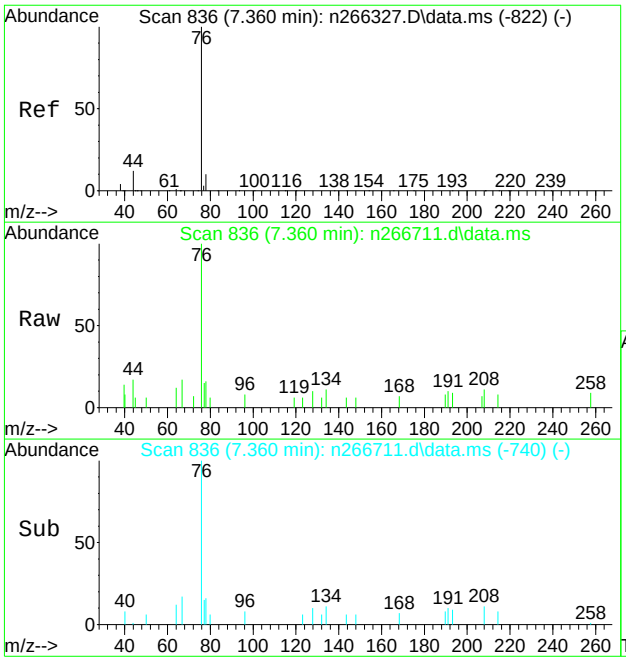
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\complete\dayton201712\dayton 20171219\chesterb\vn11239\
Data File : n266711.d
Acq On : 15 Dec 2017 3:24 pm
Operator : CHELSEAS
Sample : jc57351-3dup Inst : GCMSN
Misc : MS23168,VN11239,5,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 22 13:02:52 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

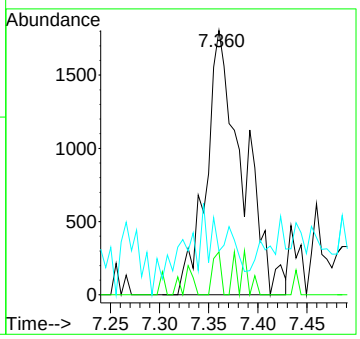


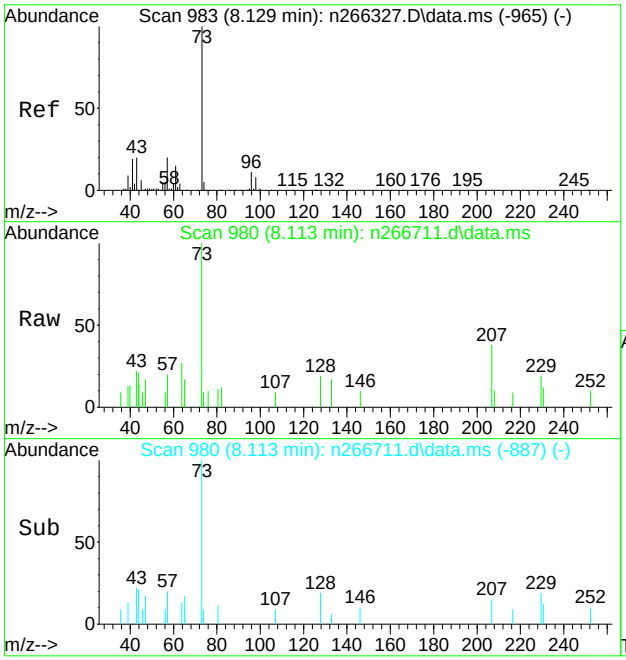


#24
carbon disulfide
Concen: 0.64 ug/L
RT: 7.360 min Scan# 836
Delta R.T. 0.000 min
Lab File: n266711.d
Acq: 15 Dec 2017 3:24 pm

Tgt Ion: 76 Resp: 4630

Ion	Ratio	Lower	Upper
76	100		
78	16.2	0.0	40.1
44	10.6	0.0	42.5

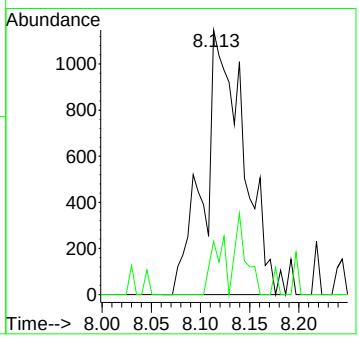


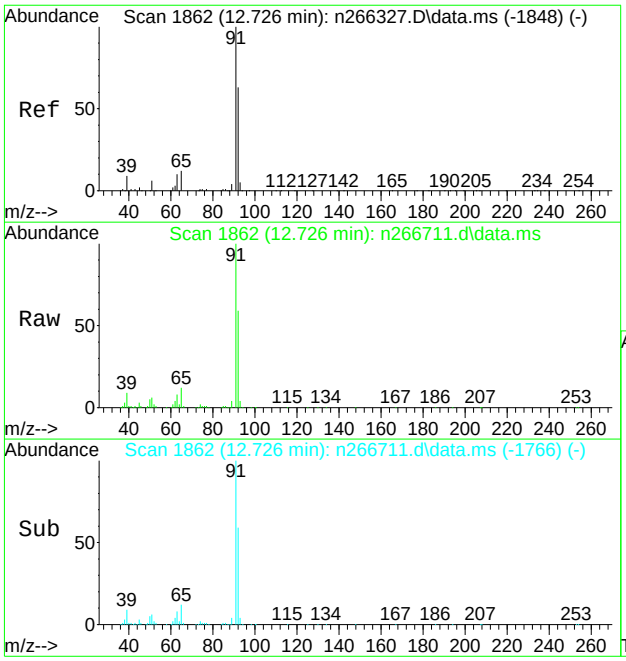


#27
methyl tert butyl ether
Concen: 0.48 ug/L
RT: 8.113 min Scan# 980
Delta R.T. -0.016 min
Lab File: n266711.d
Acq: 15 Dec 2017 3:24 pm

Tgt Ion: 73 Resp: 3189

Ion	Ratio	Lower	Upper
73	100		
57	18.5	0.0	50.0

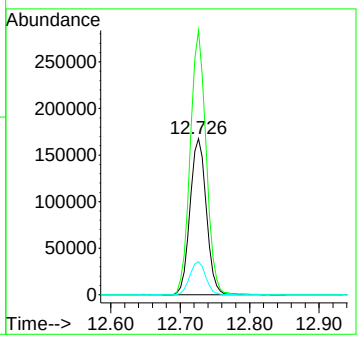




#76
toluene
Concen: 54.83 ug/L
RT: 12.726 min Scan# 1862
Delta R.T. 0.000 min
Lab File: n266711.d
Acq: 15 Dec 2017 3:24 pm

Tgt Ion: 92 Resp: 273138

Ion	Ratio	Lower	Upper
92	100		
91	169.4	137.9	177.9
65	21.2	0.0	38.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266765.d
Acq On : 18 Dec 2017 5:59 pm
Operator : CHELSEAS
Sample : jc57328-2dup Inst : GCMSN
Misc : MS23167,VN11241,5,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 01:05:45 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

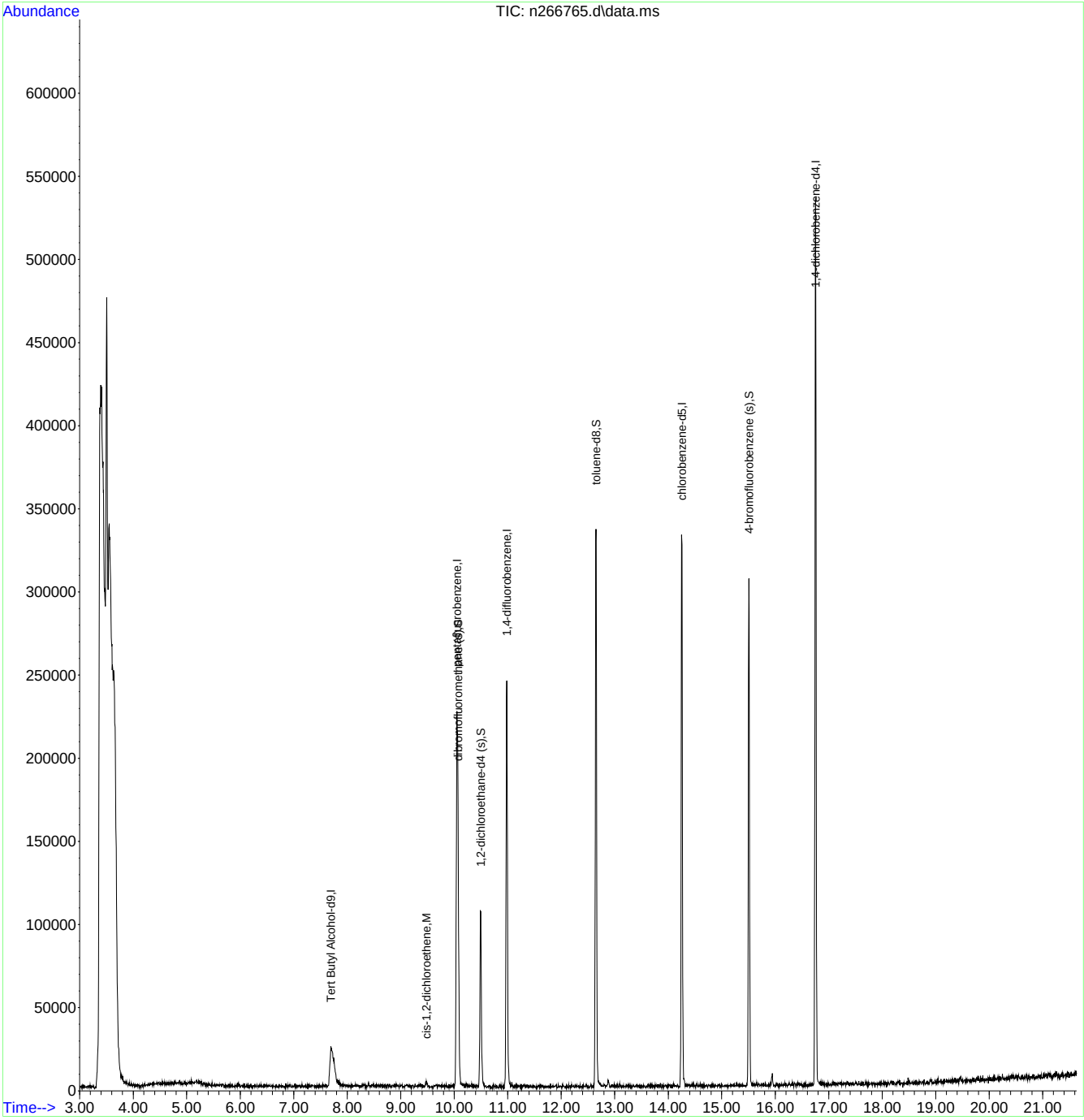
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.693	65	63252	300.00	ug/L	0.00
4) pentafluorobenzene	10.052	168	134424	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.983	114	182980	30.00	ug/L	0.00
74) chlorobenzene-d5	14.257	117	172926	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.757	152	132664	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.072	113	69616	33.31	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.03%			
54) 1,2-dichloroethane-d4 (s)	10.496	65	72376	32.16	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 107.20%			
75) toluene-d8	12.651	98	205618	27.26	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 90.87%			
97) 4-bromofluorobenzene (s)	15.507	95	89045	28.98	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.60%			
Target Compounds						Qvalue
39) cis-1,2-dichloroethene	9.481	96	1030	0.46	ug/L	# 26

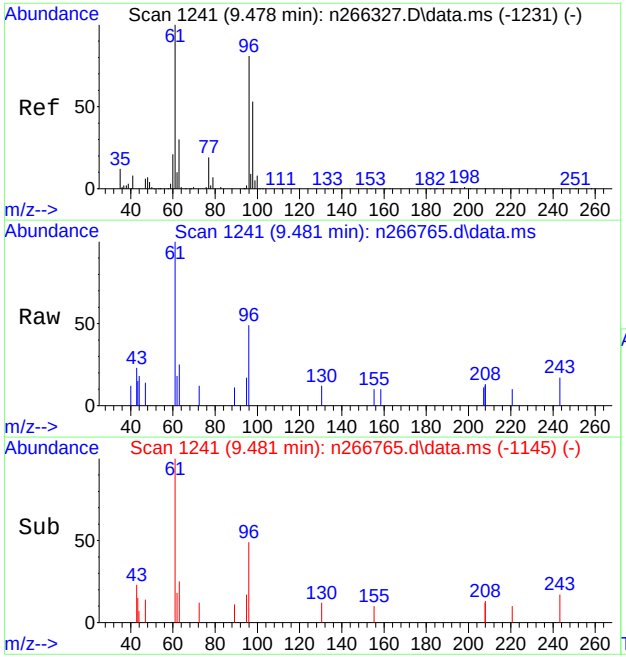
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266765.d
Acq On : 18 Dec 2017 5:59 pm
Operator : CHELSEAS
Sample : jc57328-2dup Inst : GCMSN
Misc : MS23167,VN11241,5,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 01:05:45 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

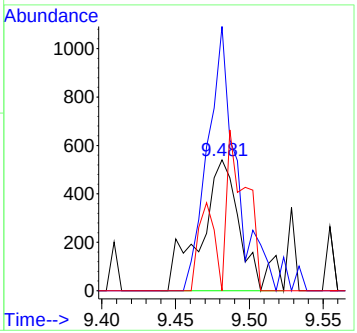




#39
cis-1,2-dichloroethene
Concen: 0.46 ug/L
RT: 9.481 min Scan# 1241
Delta R.T. 0.003 min
Lab File: n266765.d
Acq: 18 Dec 2017 5:59 pm

Tgt Ion: 96 Resp: 1030

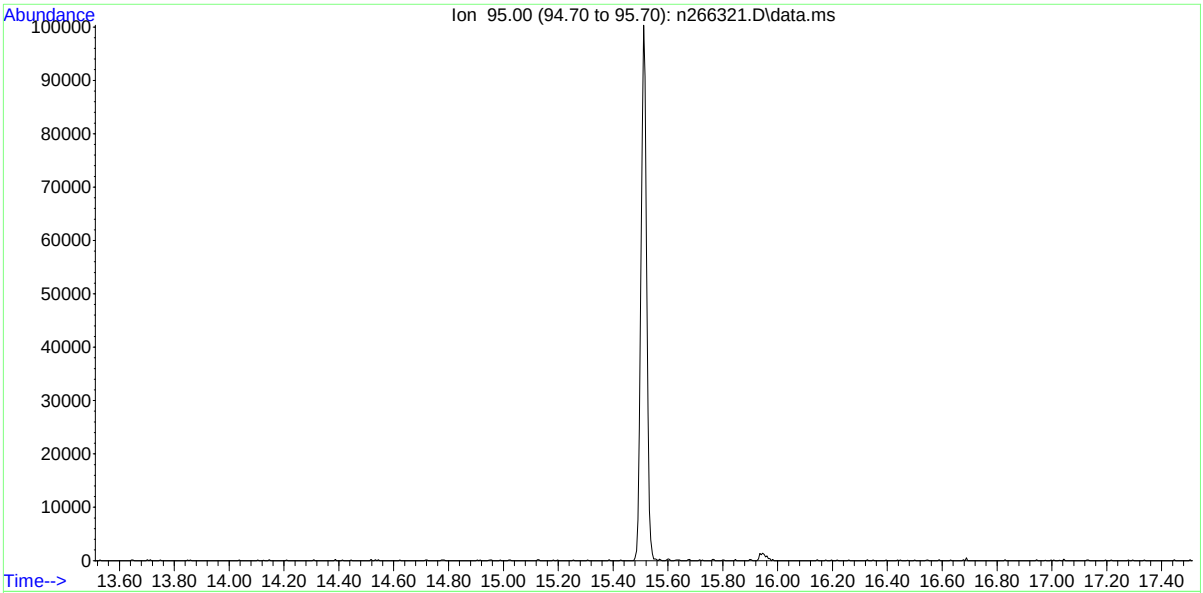
Ion	Ratio	Lower	Upper
96	100		
61	202.2	94.2	154.2#
98	0.0	35.9	95.9#

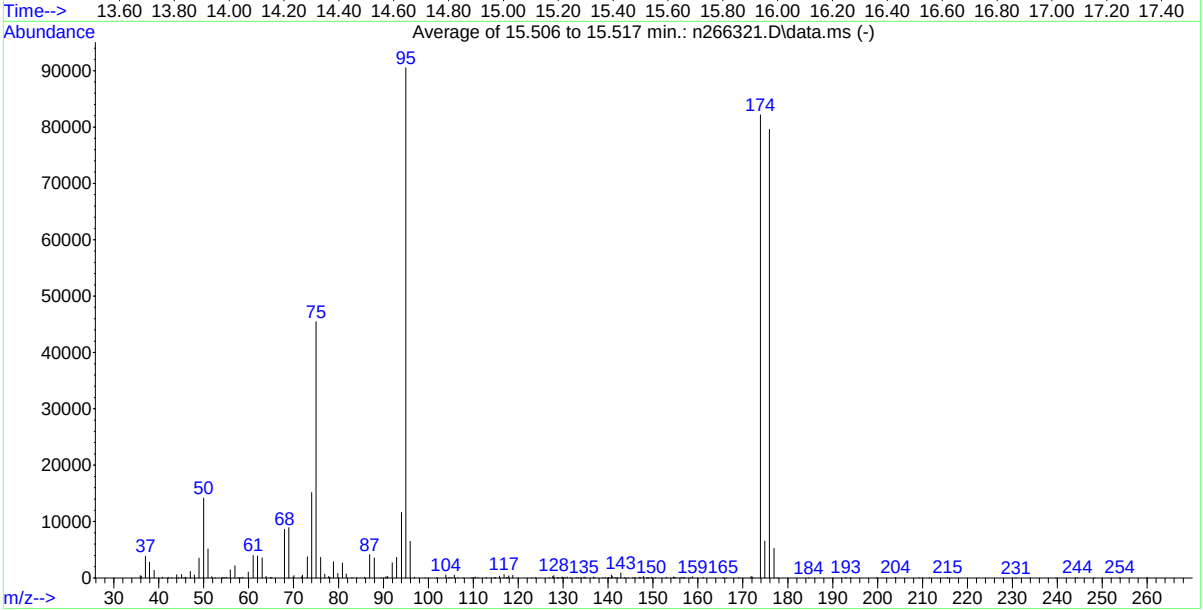


SW-846 Method 8260

Data File : C:\msdchem\1\DATA\n266321.D Vial: 1
Acq On : 30 Nov 2017 6:21 pm Operator: CHELSEAS
Sample : bfb Inst : GCMSN
Misc : MS22241,VN11221,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um





AutoFind: Scans 2393, 2394, 2395; Background Corrected with Scan 2384

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.7	14190	PASS
75	95	30	60	50.2	45477	PASS
95	95	100	100	100.0	90506	PASS
96	95	5	9	7.2	6478	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.8	82157	PASS
175	174	5	9	8.0	6550	PASS
176	174	95	101	96.8	79565	PASS
177	176	5	9	6.6	5248	PASS

n266321.D MN11221.M Fri Dec 01 14:58:17 2017 MSDN

Average of 15.506 to 15.517 min.: n266321.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.90	395	45.60	76	54.70	99	63.85	249
36.10	292	46.00	125	55.15	125	64.90	75
37.00	3828	47.00	1159	55.95	1432	65.10	75
37.95	2756	47.95	520	56.95	2165	68.00	8600
38.95	1344	48.95	3517	57.80	89	68.95	8909
40.80	119	50.00	14190	58.30	60	69.90	193
42.10	72	50.95	5137	58.70	104	70.10	390
42.90	40	51.80	216	59.90	1035	71.80	171
44.00	557	52.60	39	61.00	3983	71.95	509
44.40	34	54.10	53	61.95	3887	73.05	3753
45.05	626	54.30	59	63.00	3552	74.00	15133

Average of 15.506 to 15.517 min.: n266321.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
75.00	45477	85.75	127	95.95	6478	109.70	96
76.00	3655	86.95	4111	96.90	109	110.10	96
76.95	670	87.95	3556	99.30	40	110.45	151
77.80	229	89.50	35	101.90	73	111.05	99
78.10	173	90.50	158	103.90	515	112.90	94
78.90	2873	90.80	216	104.50	51	114.70	55
79.85	779	90.95	290	104.80	71	115.00	59
80.85	2640	91.95	2684	105.20	47	115.85	339
81.75	692	92.95	3659	105.75	511	116.85	599
83.00	99	94.00	11610	106.60	33	117.40	53
84.10	39	95.00	90506	107.70	36	117.60	53

Average of 15.506 to 15.517 min.: n266321.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
117.90	351	129.85	151	137.00	44	144.50	37
118.80	474	130.20	76	138.90	38	145.50	53
123.00	46	130.50	62	139.50	57	146.00	72
123.90	59	130.90	188	140.10	83	146.95	143
126.90	35	131.70	41	140.45	7	147.20	70
127.70	280	132.90	95	140.75	498	147.85	276
127.80	92	133.40	56	141.00	214	148.60	46
127.95	439	134.00	59	141.70	72	148.80	44
128.75	80	134.65	163	142.10	66	149.00	66
129.00	98	135.00	61	142.85	906	149.65	100
129.60	78	136.75	159	143.60	62	150.60	41

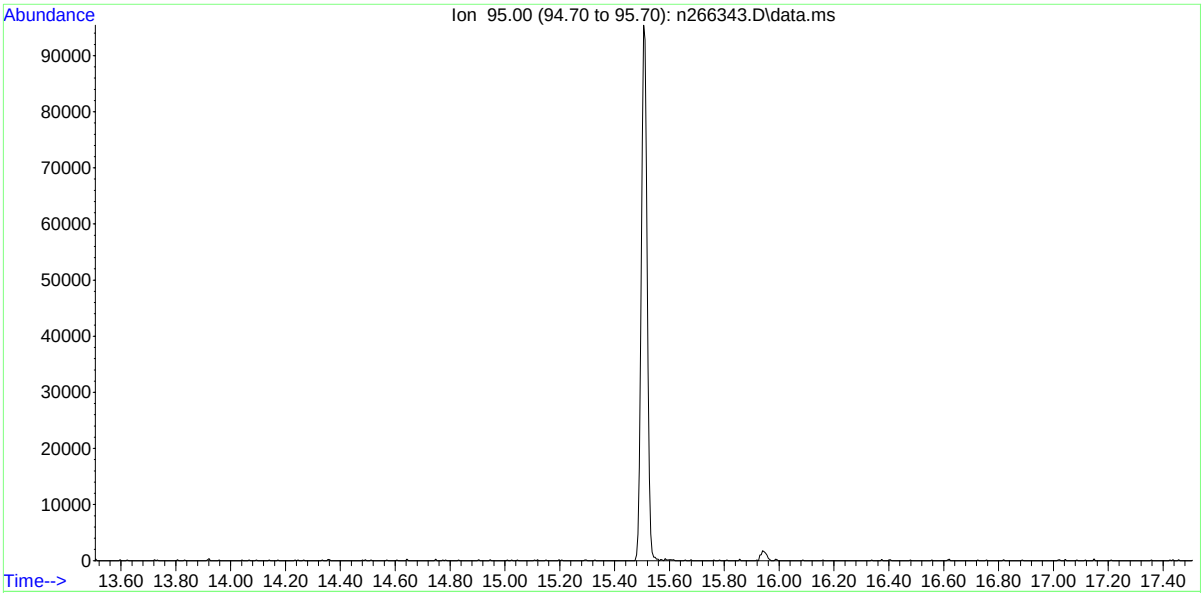
Average of 15.506 to 15.517 min.: n266321.D\data.ms
bfb
Modified:subtracted

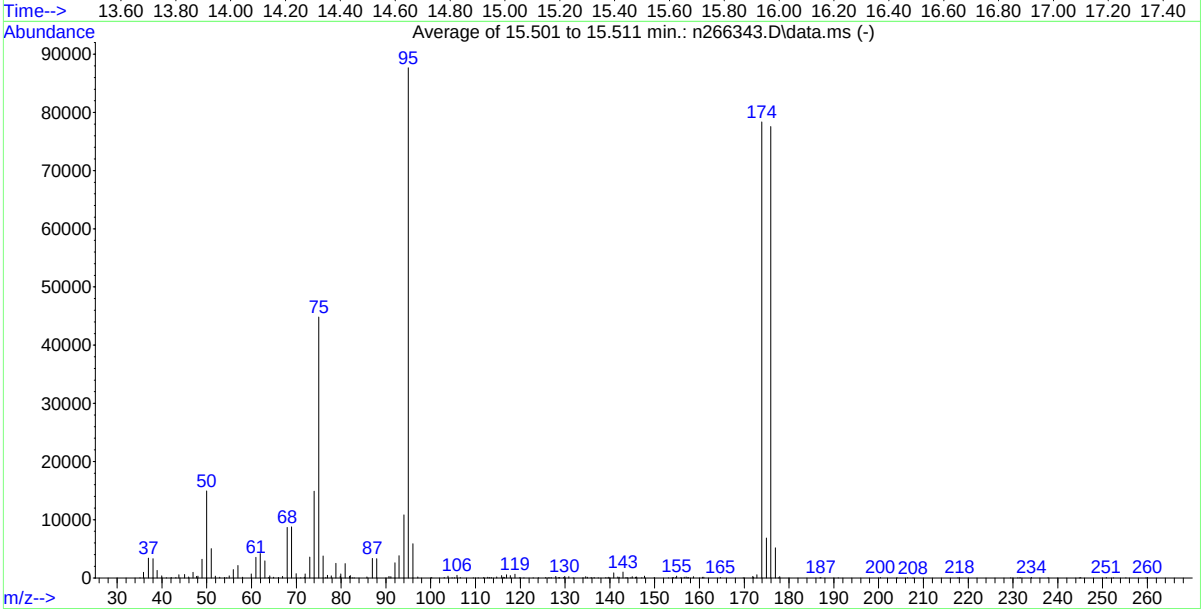
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
152.95	103	166.40	46	192.90	87	244.50	60
154.50	159	169.10	84	194.00	47	248.20	51
154.80	101	171.70	43	199.70	33	253.90	66
155.10	48	171.85	254	204.00	57	260.00	60
156.30	77	172.20	153	209.20	43		
156.70	127	173.90	82157	211.50	46		
157.00	55	174.90	6550	215.60	69		
158.40	59	175.90	79565	230.80	42		
158.85	234	176.95	5248	233.90	37		
161.20	56	177.80	43	239.70	39		
165.60	61	184.60	43	244.00	43		

SW-846 Method 8260

Data File : C:\msdchem\1\DATA\n266343.D Vial: 9
Acq On : 4 Dec 2017 2:36 pm Operator: CHELSEAS
Sample : bfb Inst : GCMSN
Misc : MS22241,VN11223,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um





AutoFind: Scans 2392, 2393, 2394; Background Corrected with Scan 2384

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.1	14951	PASS
75	95	30	60	51.2	44850	PASS
95	95	100	100	100.0	87661	PASS
96	95	5	9	6.7	5856	PASS
173	174	0.00	2	0.7	539	PASS
174	95	50	120	89.4	78381	PASS
175	174	5	9	8.8	6875	PASS
176	174	95	101	99.0	77560	PASS
177	176	5	9	6.7	5162	PASS

n266343.D MN11221.M Tue Dec 05 08:52:10 2017 MSDN

Average of 15.501 to 15.511 min.: n266343.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.10	37	45.95	146	55.00	369	66.00	89
35.90	940	46.95	979	55.95	1430	66.90	245
37.00	3390	47.75	263	56.95	2142	67.95	8685
38.00	3305	48.05	320	58.00	119	68.95	8776
38.95	1309	48.95	3206	59.95	679	69.95	725
39.95	335	50.00	14951	60.95	3528	71.00	34
41.00	39	51.00	5014	61.95	4198	71.80	138
42.10	53	51.95	294	62.95	2921	72.00	701
43.10	74	52.90	111	63.80	66	73.00	3598
43.80	560	54.00	58	64.05	342	74.00	14901
45.05	604	54.50	41	64.95	135	75.00	44850

Average of 15.501 to 15.511 min.: n266343.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
75.95	3753	82.90	49	97.10	176	112.75	103
76.60	77	85.75	145	100.20	79	113.10	55
76.95	449	87.00	3361	103.00	84	113.50	68
77.80	337	87.95	3304	103.85	329	114.75	151
78.85	2488	90.70	267	104.80	51	115.85	389
79.80	287	91.10	210	105.30	51	116.20	131
79.95	700	92.00	2590	105.85	447	116.50	68
80.90	2457	92.95	3815	106.60	75	116.90	529
81.90	265	94.00	10825	109.50	36	117.75	422
82.05	383	95.00	87661	110.60	40	118.80	643
82.50	47	96.00	5856	111.80	55	119.90	77

Average of 15.501 to 15.511 min.: n266343.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
120.80	37	130.85	235	140.85	856	147.75	286
122.90	36	131.80	34	141.80	145	149.90	83
124.10	50	134.00	36	142.05	108	153.10	38
125.70	52	134.60	218	142.95	990	153.90	42
126.40	73	134.95	121	143.60	72	154.20	63
126.90	54	135.80	61	143.90	50	154.70	64
127.90	265	136.50	61	144.70	42	154.90	307
128.60	71	137.40	45	145.00	194	155.90	94
128.80	57	139.10	52	145.70	113	156.60	115
129.70	93	139.60	38	145.95	165	157.00	172
129.90	274	139.75	96	147.10	50	157.30	47

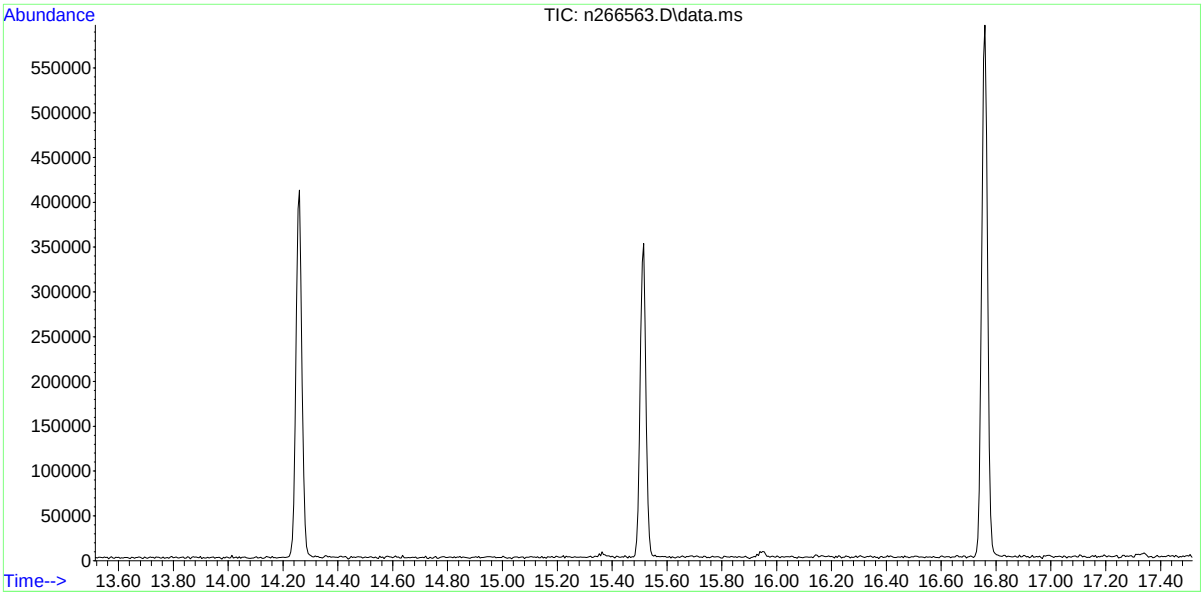
Average of 15.501 to 15.511 min.: n266343.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
157.55	88	175.90	77560	217.70	45	255.20	44
158.65	214	176.95	5162	218.10	49	259.70	49
160.70	99	177.60	40	229.50	41	260.00	67
160.95	104	177.90	211	231.10	36		
164.70	52	186.90	38	231.60	59		
169.80	35	187.10	82	234.10	66		
171.90	249	191.00	34	237.80	37		
172.10	98	200.40	59	244.80	39		
172.85	539	204.10	36	245.10	53		
173.90	78381	206.50	37	250.80	80		
174.95	6875	207.70	38	252.40	41		

SW-846 Method 8260

Data File : C:\msdchem\1\data\N\VN11233\n266563.D Vial: 1
Acq On : 12 Dec 2017 8:31 am Operator: CHELSEAS
Sample : bfb Inst : GCMSN
Misc : MS22984,VN11233,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um



AutoFind: Scans 2394, 2395, 2396; Background Corrected with Scan 2382

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.7	9943	PASS
75	95	30	60	46.3	29373	PASS
95	95	100	100	100.0	63379	PASS
96	95	5	9	6.5	4125	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.5	57347	PASS
175	174	5	9	8.0	4600	PASS
176	174	95	101	96.0	55027	PASS
177	176	5	9	6.9	3808	PASS

n266563.D MN11221.M Wed Dec 13 17:00:39 2017

Average of 15.510 to 15.520 min.: n266563.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.00	68	47.70	225	57.00	1144	66.70	41
35.95	513	48.00	308	57.80	154	68.00	5566
37.00	2713	49.00	2095	58.10	51	69.00	5744
38.00	2309	50.00	9943	60.05	669	70.00	480
38.90	614	51.00	3348	61.00	3067	71.95	246
39.90	328	51.80	74	61.95	2907	72.95	2975
42.95	153	52.05	158	62.95	2515	74.00	10520
43.20	35	54.60	45	63.95	354	75.00	29373
44.00	98	55.00	268	64.80	165	75.95	2621
44.90	593	55.70	258	65.10	227	77.05	456
46.90	697	56.00	722	65.80	44	77.60	127

Average of 15.510 to 15.520 min.: n266563.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
77.90	329	91.10	112	105.80	432	125.40	108
78.85	1606	91.95	2007	109.95	122	127.85	240
79.95	750	93.00	2743	112.60	54	128.60	60
80.85	2211	94.00	7345	113.00	53	128.80	71
81.85	656	95.00	63379	114.40	72	129.80	159
83.00	87	96.00	4125	114.60	87	130.80	41
84.60	123	97.00	57	115.90	148	133.10	36
85.90	78	102.60	64	116.75	456	134.65	210
86.95	3107	103.70	41	117.80	354	136.00	57
87.95	2009	103.95	181	118.90	458	138.50	47
90.90	187	104.60	47	125.00	42	139.60	40

Average of 15.510 to 15.520 min.: n266563.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
139.90	53	147.80	260	170.60	42	197.70	46
140.30	85	149.80	56	171.10	73	199.90	90
140.70	49	153.60	52	171.90	667	205.50	55
140.90	415	154.80	327	173.90	57347	206.85	60
141.70	61	156.85	208	174.95	4600	211.20	47
142.00	48	157.10	89	175.90	55027	217.90	39
142.80	717	157.90	44	176.90	3808	218.60	37
143.90	53	159.00	34	178.00	70	223.70	36
144.95	36	161.00	83	181.60	37	225.70	88
145.75	99	164.70	70	192.80	66	232.70	40
146.95	113	167.30	34	197.00	55	242.90	46

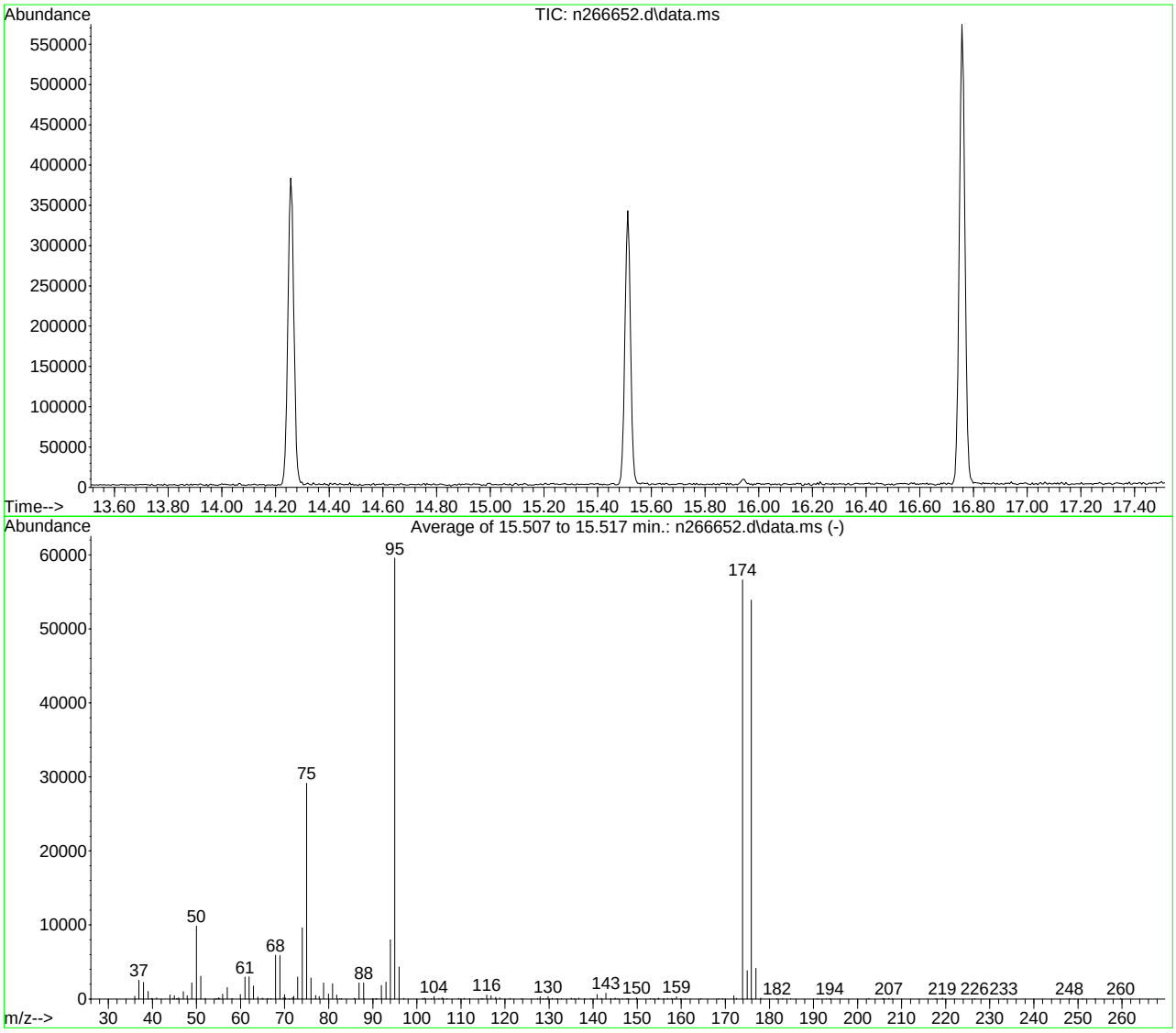
Average of 15.510 to 15.520 min.: n266563.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
247.10	37						
249.00	34						
251.70	38						

SW-846 Method 8260

Data File : C:\msdchem\1\data\vn11237\n266652.d Vial: 1
Acq On : 14 Dec 2017 8:26 am Operator: CHELSEAS
Sample : bfb Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um



AutoFind: Scans 2393, 2394, 2395; Background Corrected with Scan 2384

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.5	9848	PASS
75	95	30	60	48.9	29149	PASS
95	95	100	100	100.0	59557	PASS
96	95	5	9	7.2	4309	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	95.1	56622	PASS
175	174	5	9	6.8	3824	PASS
176	174	95	101	95.2	53877	PASS
177	176	5	9	7.7	4148	PASS

n266652.d MN11221.M Mon Dec 18 00:18:56 2017

Average of 15.507 to 15.517 min.: n266652.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	366	45.70	41	55.30	92	66.20	85
36.95	2506	45.95	158	55.95	654	66.90	45
38.00	2239	47.00	981	57.00	1531	67.95	5926
39.05	1032	47.90	422	58.10	60	68.95	5843
39.80	93	48.95	2185	59.95	608	69.70	158
39.90	46	50.00	9848	61.00	2954	70.00	572
40.95	166	50.95	3058	61.95	3001	70.20	137
44.00	543	51.95	102	62.95	1751	71.10	67
44.70	74	54.40	56	63.90	265	71.80	188
44.95	423	54.70	61	64.90	83	72.10	352
45.50	39	55.00	140	65.10	99	72.95	2965

Average of 15.507 to 15.517 min.: n266652.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
74.00	9606	85.80	100	97.00	90	112.00	41
75.00	29149	86.90	2176	101.40	100	114.60	40
76.00	2815	87.95	2180	101.80	107	115.00	50
77.05	457	90.00	36	103.30	38	115.85	525
77.85	339	90.70	69	103.90	344	116.85	429
78.85	2157	90.90	36	105.00	98	117.90	239
79.95	692	91.95	1806	105.70	144	118.80	172
80.85	2052	93.00	2271	105.95	83	121.15	103
81.80	544	94.00	8004	106.80	60	123.80	68
82.50	47	95.00	59557	109.50	74	127.40	38
82.90	71	95.95	4309	110.80	105	127.95	301

Average of 15.507 to 15.517 min.: n266652.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
128.70	42	140.90	605	153.00	59	164.40	60
129.40	51	141.85	100	153.70	70	168.50	39
129.80	331	142.90	799	154.70	42	169.40	49
130.70	86	144.00	42	154.90	112	171.90	450
131.80	58	144.80	3	156.00	60	172.50	96
132.80	49	145.00	114	156.90	99	173.90	56622
135.00	112	145.60	41	157.80	75	174.95	3824
135.70	63	146.70	35	158.50	64	175.90	53877
136.70	129	147.70	69	158.90	281	176.95	4148
138.10	44	148.10	39	159.80	51	178.05	112
139.50	45	149.85	153	160.90	34	181.70	38

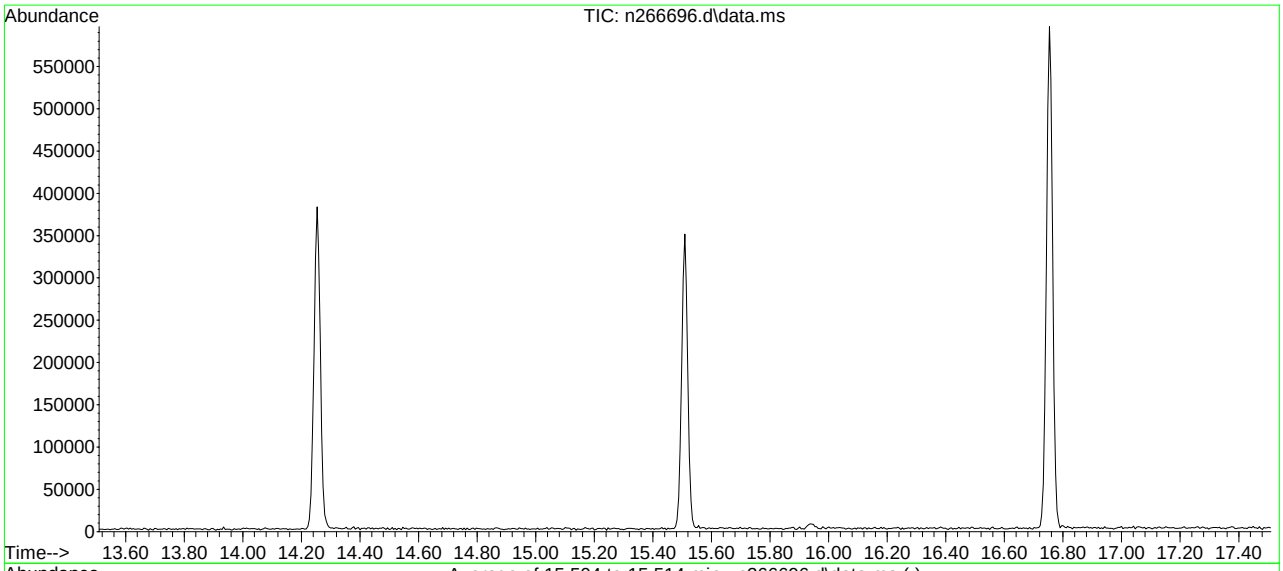
Average of 15.507 to 15.517 min.: n266652.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
183.00	36	219.25	116				
184.80	34	226.60	44				
190.90	36	233.20	58				
192.90	34	248.10	62				
193.70	58	249.20	35				
202.60	72	251.10	43				
205.70	80	253.90	55				
206.10	41	259.70	83				
207.10	95						
207.90	45						
217.80	41						

SW-846 Method 8260

Data File : C:\msdchem\1\data\vn11239\n266696.d Vial: 2
Acq On : 15 Dec 2017 7:22 am Operator: CHELSEAS
Sample : bfb Inst : GCMSN
Misc : MS23129,VN11239,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um



AutoFind: Scans 2393, 2394, 2395; Background Corrected with Scan 2378

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	11311	PASS
75	95	30	60	49.9	30371	PASS
95	95	100	100	100.0	60851	PASS
96	95	5	9	6.0	3667	PASS
173	174	0.00	2	0.5	248	PASS
174	95	50	120	89.4	54397	PASS
175	174	5	9	8.2	4447	PASS
176	174	95	101	96.9	52725	PASS
177	176	5	9	6.7	3528	PASS

n266696.d MN11221.M Tue Dec 19 02:17:18 2017

Average of 15.504 to 15.514 min.: n266696.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	641	45.00	635	56.00	683	66.90	51
37.00	2990	45.90	78	56.80	564	67.95	5870
38.00	2407	47.05	515	56.95	1234	69.00	6521
39.00	885	47.90	470	58.10	128	69.80	103
40.00	316	49.00	2562	59.95	704	70.05	280
41.00	113	50.00	11311	61.00	2955	71.50	66
41.20	55	51.00	3345	62.00	2909	72.05	472
41.50	55	51.85	250	63.00	2466	72.95	2950
41.80	54	53.80	43	64.00	320	74.00	9803
42.90	88	54.30	42	65.05	401	75.00	30371
44.00	90	54.95	161	66.00	34	75.95	2372

Average of 15.504 to 15.514 min.: n266696.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
76.80	189	86.95	2594	103.30	72	114.95	162
77.15	180	87.95	2185	103.70	91	115.85	276
78.00	228	90.80	281	103.85	137	116.40	46
78.85	2139	91.95	2003	104.85	138	116.85	385
79.85	724	93.00	2954	105.60	102	117.75	240
80.90	2034	94.00	7483	105.85	281	118.00	87
81.90	791	95.00	60851	106.60	63	118.60	101
85.10	91	96.00	3667	108.20	76	118.85	327
85.30	38	96.70	64	112.05	100	124.00	58
85.80	85	96.90	122	112.75	80	124.60	39
86.10	41	103.10	54	114.00	53	124.90	93

Average of 15.504 to 15.514 min.: n266696.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
126.70	48	140.00	101	150.00	39	170.60	42
127.85	330	140.80	517	154.15	88	171.10	35
128.75	175	141.80	214	154.40	46	171.90	598
129.60	64	142.95	928	154.85	168	172.40	61
129.85	290	143.75	126	156.60	64	172.70	248
130.75	81	144.50	57	156.85	133	173.95	54397
133.90	62	144.90	307	157.60	42	174.95	4447
134.50	59	145.60	120	158.90	237	175.90	52725
134.90	38	147.70	55	160.60	66	176.90	3528
136.80	132	147.90	274	160.95	87	177.80	135
137.70	35	149.00	60	161.30	35	180.70	71

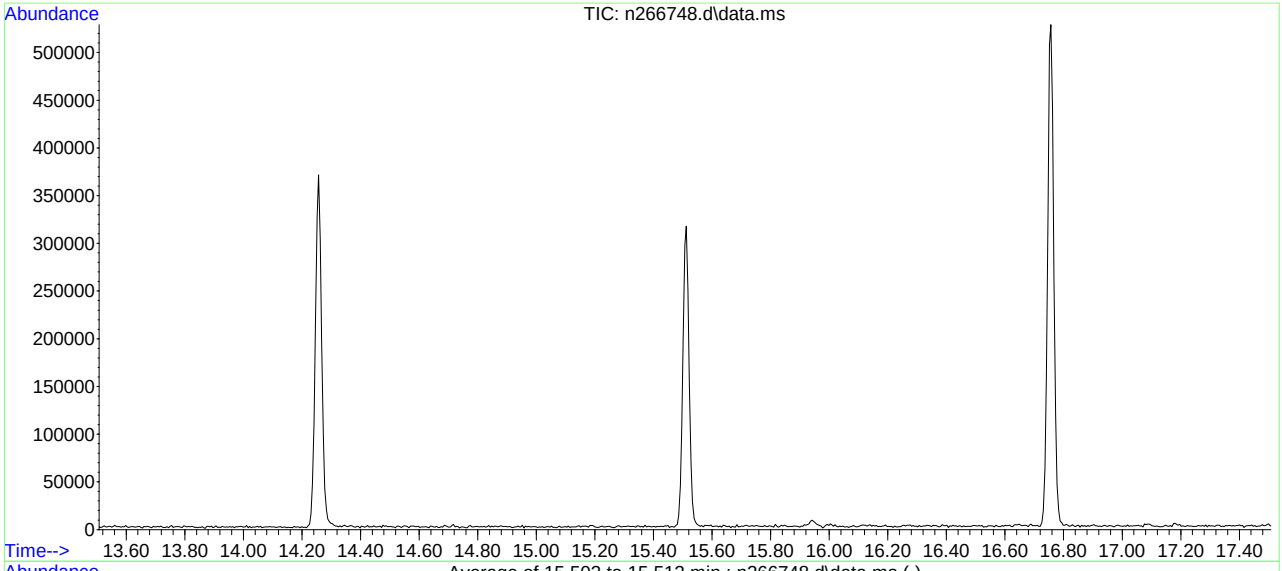
Average of 15.504 to 15.514 min.: n266696.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
182.20	50	214.30	40	259.70	39		
187.90	35	224.00	40	260.00	126		
191.00	92	224.60	35				
193.90	37	229.80	42				
195.00	42	231.95	122				
200.90	46	240.50	33				
205.30	39	242.20	54				
207.20	139	242.80	35				
208.00	115	243.80	58				
208.20	35	246.70	34				
213.80	66	248.40	41				

SW-846 Method 8260

Data File : C:\msdchem\1\data\vn11241\n266748.d Vial: 4
Acq On : 18 Dec 2017 8:44 am Operator: CHELSEAS
Sample : bfb Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um



AutoFind: Scans 2392, 2393, 2394; Background Corrected with Scan 2384

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.5	9957	PASS
75	95	30	60	51.2	27555	PASS
95	95	100	100	100.0	53789	PASS
96	95	5	9	7.1	3800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	85.9	46221	PASS
175	174	5	9	8.4	3891	PASS
176	174	95	101	95.8	44277	PASS
177	176	5	9	7.6	3353	PASS

n266748.d MN11221.M Wed Dec 20 00:15:38 2017

Average of 15.502 to 15.512 min.: n266748.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.30	66	49.00	2518	60.05	565	69.80	66
36.00	441	50.00	9957	61.00	2572	70.05	447
36.95	2446	51.00	2729	61.95	2422	71.90	256
38.00	2432	51.95	309	62.95	1919	72.10	105
38.95	859	53.00	40	64.00	298	72.95	2246
43.90	635	54.85	138	64.90	39	74.00	8857
44.70	55	55.80	167	65.05	183	75.00	27555
45.00	316	56.00	646	66.10	37	75.95	2487
47.00	954	56.80	248	66.95	210	76.90	92
47.70	77	57.00	1258	67.95	5306	77.10	107
48.00	287	57.80	38	68.95	5707	77.85	196

Average of 15.502 to 15.512 min.: n266748.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
78.10	79	91.95	1623	106.10	61	118.00	182
78.85	1883	92.95	2587	109.65	83	118.95	320
79.85	690	94.00	6166	110.70	72	123.00	82
80.85	1745	95.00	53789	111.70	37	123.40	35
81.85	463	96.00	3800	112.00	64	123.80	79
83.00	69	96.95	237	112.40	36	126.70	55
85.90	64	100.70	36	112.90	38	127.70	108
86.95	1773	103.85	268	115.00	127	128.00	154
87.95	1610	104.90	162	115.80	300	128.60	144
89.40	37	105.65	165	116.85	385	129.00	83
90.70	294	105.90	50	117.70	133	129.75	141

Average of 15.502 to 15.512 min.: n266748.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
130.70	81	142.85	786	158.70	48	203.10	44
131.10	40	143.90	48	160.80	80	207.80	36
135.00	53	144.85	136	169.70	41	216.70	38
135.60	77	145.90	127	171.70	80	220.00	34
136.80	305	146.90	36	171.95	321	231.90	116
137.10	49	147.70	42	172.55	202	232.60	50
140.60	37	147.95	138	173.90	46221	234.80	54
140.70	314	154.90	45	174.95	3891	236.00	68
140.85	367	155.80	58	175.90	44277	237.30	35
141.80	40	156.70	60	176.95	3353	238.00	42
142.10	108	157.10	56	177.90	104	240.70	35

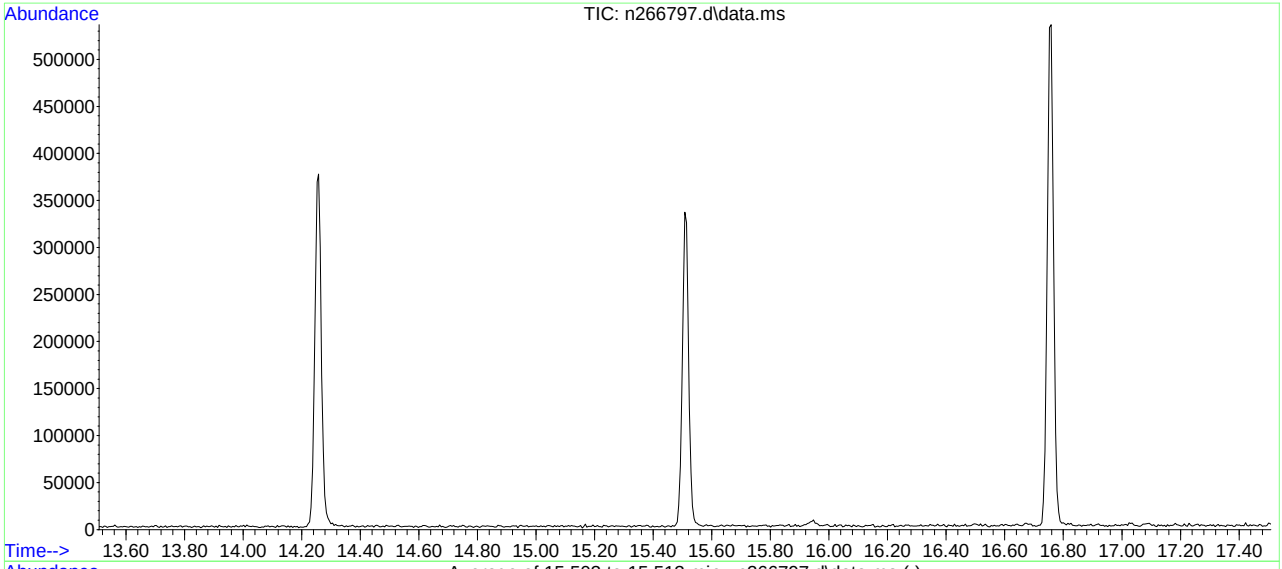
Average of 15.502 to 15.512 min.: n266748.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
241.90	45						
247.20	45						
249.20	39						
255.60	45						
257.30	38						
259.90	175						

SW-846 Method 8260

Data File : C:\msdchem\1\data\vn11243\n266797.d Vial: 4
Acq On : 19 Dec 2017 10:22 am Operator: CHELSEAS
Sample : bfb Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MN11221.M (RTE Integrator)
Title : EPA 624, ZB624 60m x 0.25mm x 1.4um



AutoFind: Scans 2393, 2394, 2395; Background Corrected with Scan 2384

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.8	11006	PASS
75	95	30	60	52.4	32347	PASS
95	95	100	100	100.0	61715	PASS
96	95	5	9	6.5	3986	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	81.6	50382	PASS
175	174	5	9	8.2	4120	PASS
176	174	95	101	99.5	50117	PASS
177	176	5	9	6.6	3319	PASS

n266797.d MN11221.M Thu Dec 21 01:25:44 2017

Average of 15.503 to 15.513 min.: n266797.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.85	279	46.75	404	56.00	710	66.20	43
36.10	188	47.00	134	56.90	1747	66.85	129
36.90	2694	47.60	206	57.80	74	67.95	6091
37.95	2377	48.00	346	59.90	576	68.95	6048
39.00	912	48.90	2387	61.00	2575	69.75	286
40.00	91	50.00	11006	62.00	2811	70.00	209
40.70	65	51.00	3757	63.00	2443	71.90	340
41.05	152	51.80	83	63.90	301	73.00	2800
42.95	91	52.15	191	64.10	75	74.00	9654
43.95	48	53.00	38	64.95	328	75.00	32347
44.85	363	55.05	218	66.00	50	75.95	2834

Average of 15.503 to 15.513 min.: n266797.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
76.80	672	83.60	40	97.15	121	115.90	177
77.40	50	86.95	2390	102.00	36	116.80	597
77.60	115	87.95	2514	103.65	209	117.50	46
78.05	273	90.70	117	104.05	189	117.75	178
78.30	94	91.00	195	104.80	98	118.85	287
78.90	1925	91.95	1927	105.85	295	124.00	115
79.70	310	92.95	2204	106.90	97	124.50	60
79.90	189	94.00	7915	111.10	57	127.75	189
80.10	83	95.00	61715	112.20	57	128.00	145
80.85	1932	96.00	3986	114.60	67	128.80	212
81.85	403	96.80	38	114.90	110	129.10	48

Average of 15.503 to 15.513 min.: n266797.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
129.90	350	142.90	347	153.00	71	174.95	4120
130.60	63	143.90	35	154.90	173	175.90	50117
130.85	158	144.90	43	156.75	158	176.90	3319
132.50	43	145.10	44	158.10	41	177.80	35
134.85	124	145.85	187	158.85	114	182.20	41
135.80	49	146.40	36	160.90	172	187.80	35
136.80	79	147.00	46	162.50	44	190.30	36
139.70	48	147.90	257	165.50	41	192.60	54
140.80	700	149.60	39	168.70	51	193.20	36
141.95	138	151.50	52	171.70	238	195.00	69
142.70	573	151.90	56	173.90	50382	206.75	67

Average of 15.503 to 15.513 min.: n266797.d\data.ms
bfb
Modified:subtracted

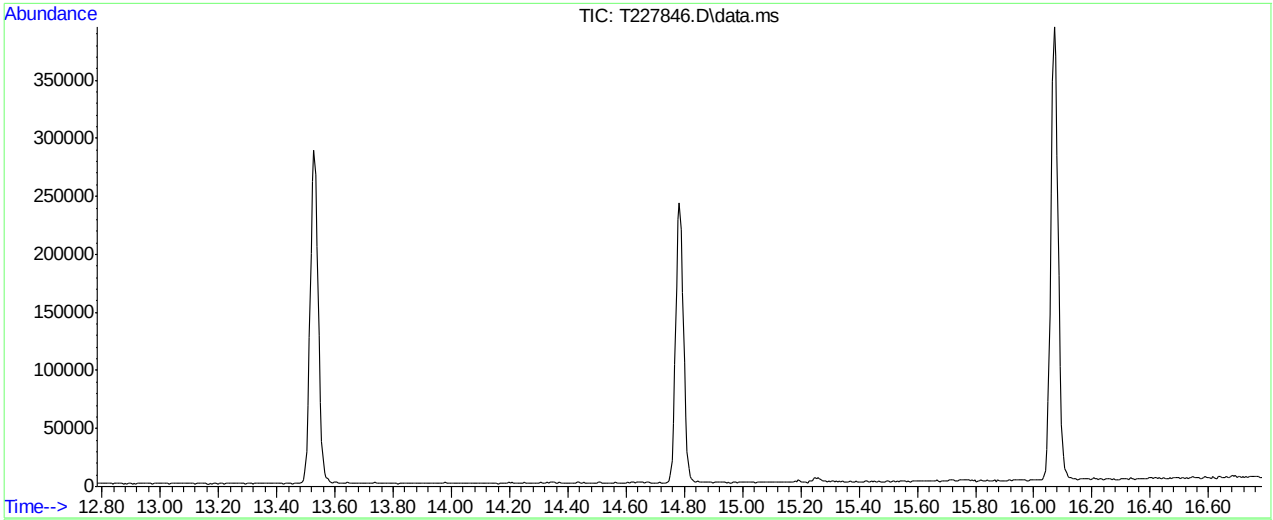
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
208.10	59						
218.10	79						
224.80	47						
231.70	38						
233.00	38						
234.10	40						
248.20	47						
249.10	37						
249.60	40						
259.85	163						

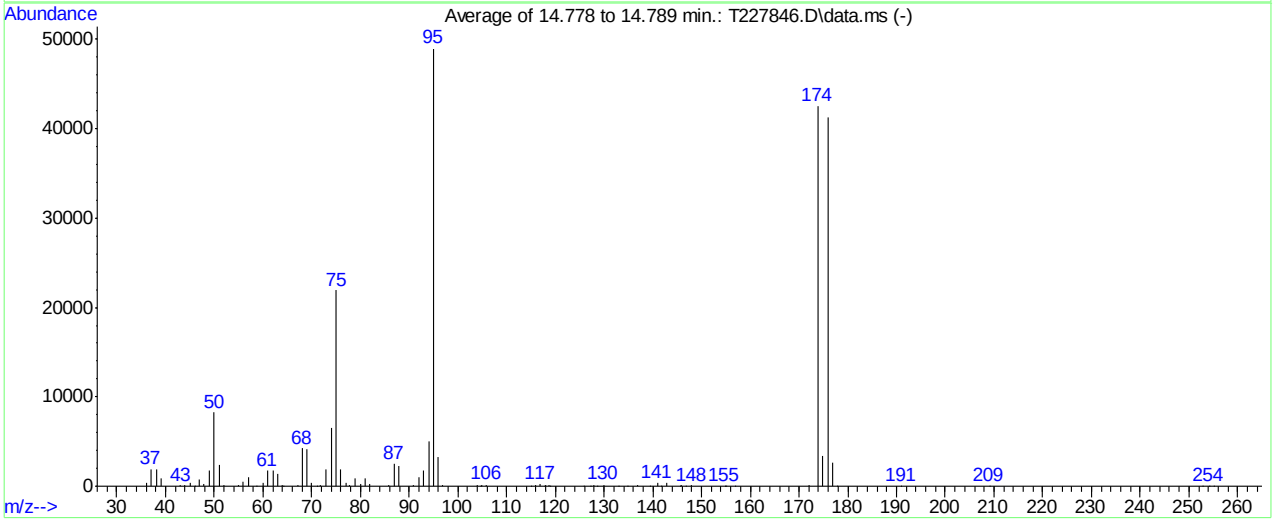
BFB

Data File : C:\MSDChem\1\DATA\T227846.D
Acq On : 8 Nov 2017 10:57 pm
Sample : bfb
Misc : MS21916,VT9358,W,,,,1
MS Integration Params: RTEINT.P

Vial: 1
Operator: CHELSEAS
Inst : GCMST
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um





AutoFind: Scans 2139, 2140, 2141; Background Corrected with Scan 2129

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.9	8276	PASS
75	95	30	60	44.7	21912	PASS
95	95	100	100	100.0	48970	PASS
96	95	5	9	6.7	3293	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	86.9	42536	PASS
175	174	5	9	7.9	3355	PASS
176	174	95	101	97.0	41240	PASS
177	176	5	9	6.3	2582	PASS

T227846.D MT9358.M Thu Nov 09 08:54:27 2017 MSDT

Average of 14.778 to 14.789 min.: T227846.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	400	50.00	8276	63.90	104	76.00	1889
37.00	1944	51.00	2366	64.20	32	77.05	387
38.10	1824	51.95	163	67.10	99	77.85	156
39.00	874	55.00	139	68.00	4224	78.90	865
43.05	70	56.00	541	69.00	4107	79.95	302
44.00	161	57.00	989	70.00	329	80.90	835
45.00	400	58.70	27	71.10	25	81.95	267
46.00	28	60.05	382	71.85	165	85.85	103
46.95	795	60.95	1727	73.00	1832	86.95	2498
47.95	249	62.00	1715	74.00	6521	87.95	2263
49.00	1742	63.00	1335	75.00	21912	90.85	189

Average of 14.778 to 14.789 min.: T227846.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
92.00	1057	115.85	180	133.00	48	154.80	59
93.00	1718	116.90	228	134.80	35	155.10	46
94.00	5064	117.80	49	136.85	78	156.90	27
95.00	48970	117.95	84	139.40	26	172.00	127
96.00	3293	118.75	139	140.90	369	173.90	42536
96.95	118	119.00	41	141.80	36	174.90	3355
103.90	131	125.90	33	142.90	367	175.90	41240
104.70	25	127.20	36	145.70	30	176.90	2582
104.95	70	127.85	124	145.95	80	177.90	43
105.85	143	128.70	28	146.70	36	191.00	33
114.95	58	129.90	141	147.95	90	209.00	30

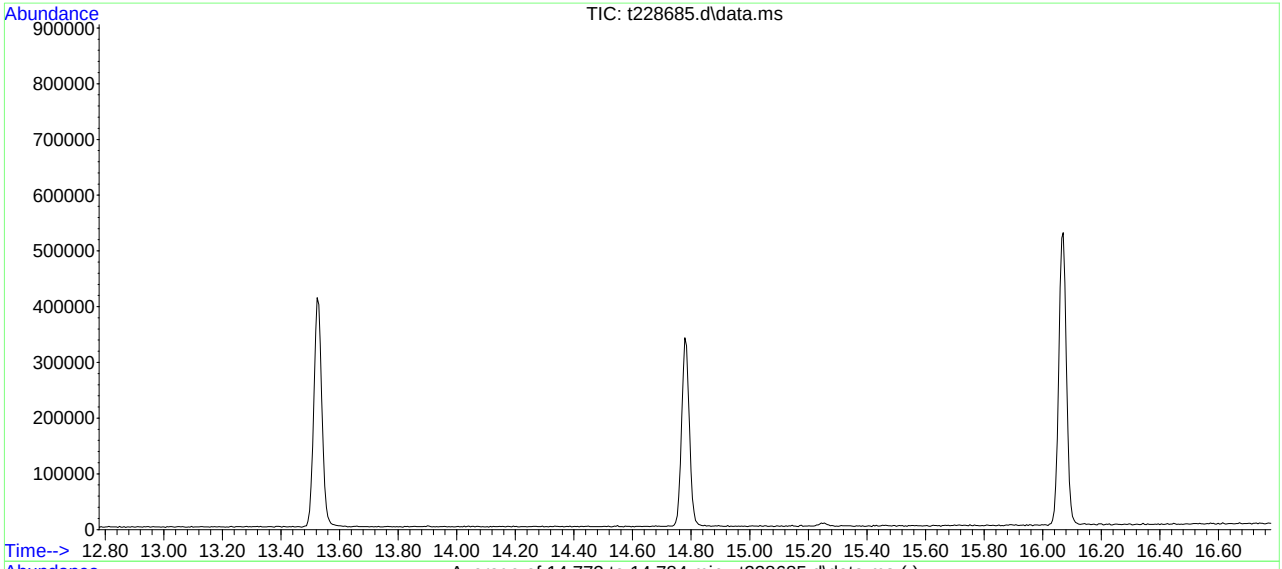
Average of 14.778 to 14.789 min.: T227846.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
252.90	8						
254.10	45						
255.00	30						

BFB

Data File : C:\msdchem\1\data\vt9392\t228685.d Vial: 2
Acq On : 12 Dec 2017 7:19 am Operator: CHELSEAS
Sample : bfb Inst : GCMST
Misc : MS22930,VT9392,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9358.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um



AutoFind: Scans 2138, 2139, 2140; Background Corrected with Scan 2125

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.8	12181	PASS
75	95	30	60	45.6	31117	PASS
95	95	100	100	100.0	68264	PASS
96	95	5	9	6.8	4629	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	79.4	54211	PASS
175	174	5	9	7.0	3795	PASS
176	174	95	101	96.8	52485	PASS
177	176	5	9	6.4	3367	PASS

t228685.d MT9358.M Thu Dec 14 02:25:55 2017

Average of 14.773 to 14.784 min.: t228685.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	652	46.10	50	57.05	1507	69.00	5978
37.00	3386	47.05	1085	58.20	34	70.05	546
38.05	2804	48.00	504	60.05	517	72.00	380
38.95	1170	49.00	2689	61.00	3139	73.00	2341
40.00	358	50.05	12181	62.05	2863	74.00	10288
41.00	53	51.05	3813	63.00	2265	75.00	31117
41.80	33	51.80	46	64.05	295	76.05	2796
42.10	58	52.00	178	65.05	178	77.05	396
43.15	88	52.80	36	66.00	28	77.30	120
44.00	98	55.05	208	67.00	129	78.00	388
45.05	610	56.00	882	68.00	6040	78.90	1268

Average of 14.773 to 14.784 min.: t228685.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
79.95	591	95.00	68264	115.90	134	129.90	193
80.95	1474	96.00	4629	116.10	67	130.60	42
81.80	308	96.70	38	116.85	427	132.95	67
82.00	196	97.10	118	117.70	69	134.95	63
86.00	81	102.70	25	117.95	85	136.90	41
86.95	3027	104.05	269	118.90	111	140.95	403
88.00	3387	105.95	266	125.85	52	142.00	68
90.90	181	110.70	42	127.80	291	142.85	422
92.00	1592	111.00	50	128.60	51	145.10	29
93.05	2331	114.70	29	128.80	37	145.80	126
94.05	6736	115.20	33	129.00	84	147.05	125

Average of 14.773 to 14.784 min.: t228685.d\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
147.70	42	163.80	32	207.85	59		
148.00	103	171.90	237	208.80	36		
149.00	25	173.90	54211	211.30	34		
153.80	40	174.90	3795	221.20	39		
154.90	198	175.90	52485	222.10	25		
155.90	106	176.90	3367	222.80	30		
156.95	122	177.85	153	253.15	144		
158.00	34	181.50	26				
158.70	57	192.90	36				
160.80	35	194.90	30				
162.10	30	201.10	26				

Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 12/04/17 01:45

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266322.D
Acq On : 30 Nov 2017 7:36 pm
Operator : CHELSEAS
Sample : ic11221-0.5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 01 16:12:44 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.703	65	139784	300.00	ug/L		0.00
4) pentafluorobenzene	10.062	168	227072	30.00	ug/L		0.01
53) 1,4-difluorobenzene	10.988	114	294235	30.00	ug/L		0.00
74) chlorobenzene-d5	14.262	117	262497	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.762	152	201488	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.083	113	104874	29.07	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.90%				
54) 1,2-dichloroethane-d4 (s)	10.501	65	109742	30.37	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 101.23%				
75) toluene-d8	12.656	98	333782	28.97	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.57%				
97) 4-bromofluorobenzene (s)	15.512	95	139619	30.71	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.37%				
Target Compounds							Qvalue
5) freon 143a	3.639	69	3960	0.54	ug/L	#	37
6) freon 142b	4.256	65	3355	0.51	ug/L		60
7) chlorodifluoromethane	4.026	51	3016	0.59	ug/L		78
9) chloromethane	4.319	50	3034	0.52	ug/L		83
10) vinyl chloride	4.622	62	4074	0.52	ug/L		71
13) chloroethane	5.533	64	2447	0.59	ug/L		91
14) trichlorofluoromethane	6.071	101	4595	0.51	ug/L		87
16) freon 141b	6.552	81	3824	0.63	ug/L		81
17) ethyl ether	6.526	59	1106	0.49	ug/L	#	53
19) 1,1-dichloroethene	6.981	96	2552	0.68	ug/L	#	36
20) acetone	7.002	58	961	2.71	ug/L	#	1
21) freon 113	7.007	101	1939	0.45	ug/L	#	29
23) iodomethane	7.227	142	3502	0.53	ug/L		73
24) carbon disulfide	7.368	76	6540	0.54	ug/L		78
25) methylene chloride	7.745	84	2059	0.57	ug/L	#	75
27) methyl tert butyl ether	8.127	73	12443	1.11	ug/L		97
28) trans-1,2-dichloroethene	8.153	96	1967	0.60	ug/L		83
31) di-isopropyl ether	8.744	45	4833	0.50	ug/L		86
32) 1,1-dichloroethane	8.760	63	3329	0.61	ug/L		75
33) chloroprene	8.854	53	2604	0.60	ug/L		88
35) ethyl tert-butyl ether	9.220	59	9758	0.90	ug/L		84
36) 2-butanone	9.434	72	526m	1.55	ug/L		
38) 2,2-dichloropropane	9.507	77	3463	0.53	ug/L		91
39) cis-1,2-dichloroethene	9.481	96	2016	0.56	ug/L		81
42) bromochloromethane	9.785	128	1093	0.62	ug/L	#	48
44) chloroform	9.884	85	2256	0.61	ug/L		90
48) 1,1,1-trichloroethane	10.140	97	4416	0.65	ug/L		68
49) cyclohexane	10.229	84	2863	0.40	ug/L		89
50) 1,1-dichloropropene	10.308	75	1869	0.46	ug/L		79
51) carbon tetrachloride	10.334	117	3575	0.57	ug/L	#	63
56) 2,2,4-trimethylpentane	10.642	57	5701	0.44	ug/L		95
57) benzene	10.553	78	6293	0.55	ug/L		88
58) tert-amyl methyl ether	10.653	73	10670	1.05	ug/L		78
59) 1,2-dichloroethane	10.590	62	2394	0.62	ug/L		74
62) trichloroethene	11.280	95	1233	0.43	ug/L	#	65
63) methyl methacrylate	11.579	69	1555	0.50	ug/L		99
64) 1,2-dichloropropane	11.600	63	1516	0.53	ug/L		60
65) methylcyclohexane	11.589	83	3772	0.50	ug/L		77
66) dibromomethane	11.704	93	947	0.56	ug/L	#	49
67) bromodichloromethane	11.856	83	2046	0.53	ug/L		96
69) 2-chloroethyl vinyl ether	12.123	63	2734	2.12	ug/L		93
71) cis-1,3-dichloropropene	12.342	75	2443	0.57	ug/L		79
72) 4-methyl-2-pentanone	12.462	58	1758	1.74	ug/L	#	89
73) 3-methyl-1-butanol	12.478	55	1504	10.48	ug/L		91
76) toluene	12.734	92	3679	0.54	ug/L	#	76
78) trans-1,3-dichloropropene	12.938	75	2152	0.56	ug/L		85

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266322.D
Acq On : 30 Nov 2017 7:36 pm
Operator : CHELSEAS
Sample : ic11221-0.5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 01 16:12:44 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

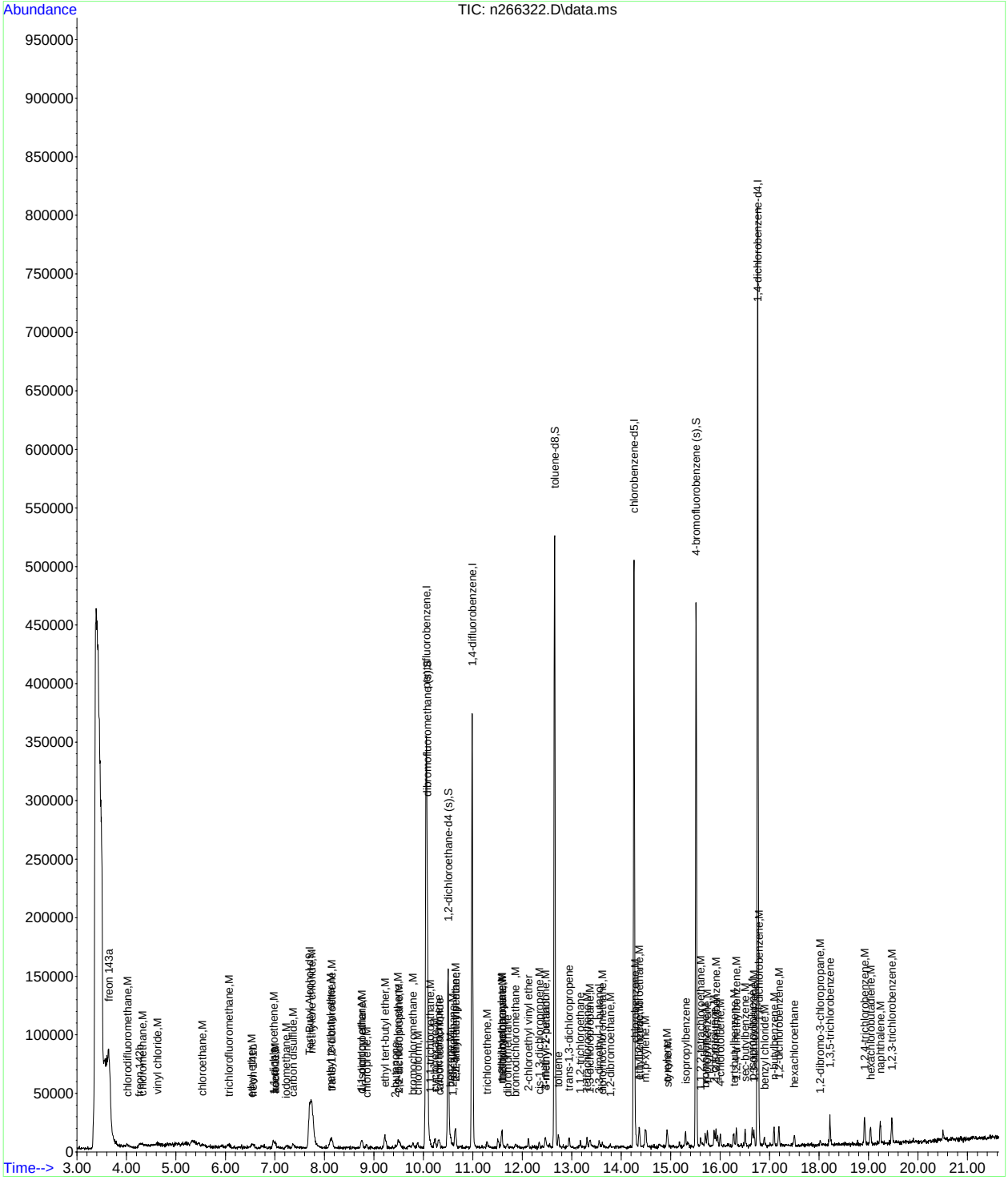
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
79) 1,1,2-trichloroethane	13.174	83	841	0.44 ug/L #	66
80) tetrachloroethene	13.310	164	1793	0.67 ug/L #	64
82) 1,3-dichloropropane	13.357	76	1969	0.54 ug/L	76
84) 3,3-dimethyl-1-butanol	13.556	57	2576	7.68 ug/L #	77
85) dibromochloromethane	13.618	129	1601	0.54 ug/L	76
86) 1,2-dibromoethane	13.780	107	1324	0.55 ug/L	96
87) chlorobenzene	14.288	112	4457	0.58 ug/L	80
88) 1,1,1,2-tetrachloroethane	14.366	131	2144	0.55 ug/L #	61
89) ethylbenzene	14.361	91	6109	0.46 ug/L	83
90) m,p-xylene	14.492	106	5611m	1.05 ug/L	
91) o-xylene	14.921	106	2814	0.49 ug/L	94
92) styrene	14.942	104	3790	0.44 ug/L	82
95) isopropylbenzene	15.302	105	7441	0.46 ug/L	100
98) bromobenzene	15.705	156	2522	0.61 ug/L #	52
99) 1,1,2,2-tetrachloroethane	15.601	83	1849	0.51 ug/L #	60
102) n-propylbenzene	15.737	120	2084	0.48 ug/L #	79
103) 2-chlorotoluene	15.883	126	1933	0.47 ug/L #	64
104) 4-chlorotoluene	16.003	126	1734	0.47 ug/L	90
105) 1,3,5-trimethylbenzene	15.914	105	6445	0.42 ug/L	90
106) tert-butylbenzene	16.275	134	1567	0.45 ug/L #	59
107) 1,2,4-trimethylbenzene	16.328	105	7266	0.47 ug/L	90
108) sec-butylbenzene	16.505	105	8491	0.42 ug/L	95
109) 1,3-dichlorobenzene	16.688	146	5325	0.61 ug/L	84
110) p-isopropyltoluene	16.647	119	8062	0.45 ug/L	87
111) 1,4-dichlorobenzene	16.788	146	5706	0.62 ug/L	81
112) 1,2-dichlorobenzene	17.191	146	5694	0.59 ug/L	87
113) benzyl chloride	16.892	91	4675	0.53 ug/L	96
115) n-butylbenzene	17.091	92	4557	0.49 ug/L	94
116) hexachloroethane	17.499	201	1952	0.50 ug/L #	73
117) 1,2-dibromo-3-chloropr...	18.017	157	1271	0.89 ug/L	82
119) 1,3,5-trichlorobenzene	18.221	180	6963	0.59 ug/L	93
120) 1,2,4-trichlorobenzene	18.922	180	7249	0.64 ug/L	86
121) hexachlorobutadiene	19.037	225	3242	0.52 ug/L	70
122) naphthalene	19.235	128	13553	0.59 ug/L	86
123) 1,2,3-trichlorobenzene	19.471	180	6585	0.60 ug/L	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266322.D
Acq On : 30 Nov 2017 7:36 pm
Operator : CHELSEAS
Sample : ic11221-0.5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 01 16:12:44 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration



Manual Integration Approval Summary

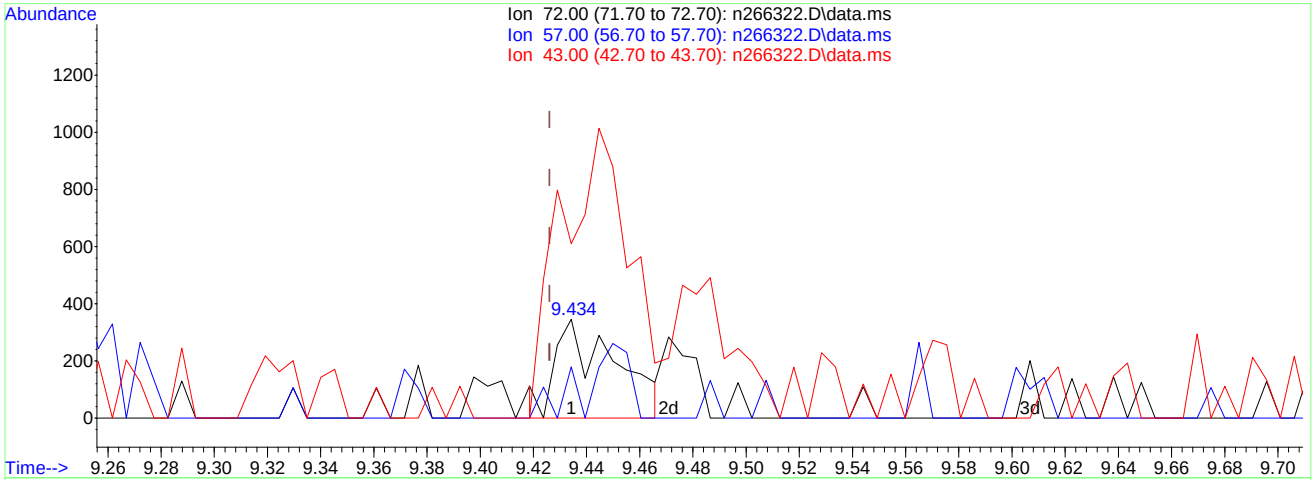
Sample Number: VN11221-IC11221
Lab FileID: N266322.D
Injection Time: 11/30/17 19:36
Method: EPA 624
Analyst approved: 12/01/17 16:54 Ying Li
Supervisor approved: 12/04/17 01:45 Kanya Veerawat

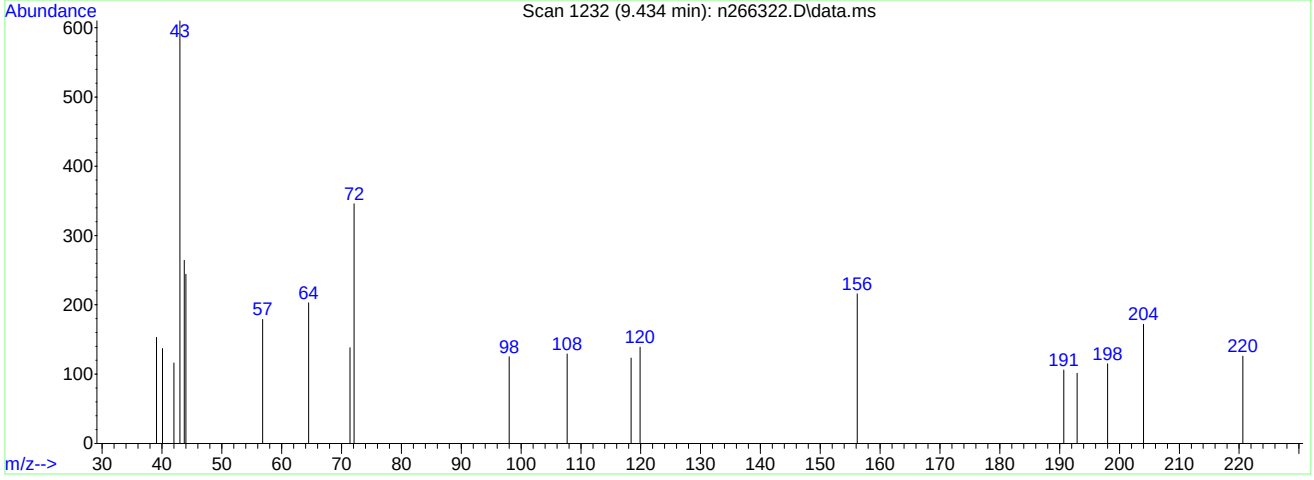
Parameter	CAS	Sig#	R.T. (min.)	Reason
2-Butanone (MEK)	78-93-3		9.43	Split peak
m,p-Xylene			14.49	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266322.D
Acq On : 30 Nov 2017 7:36 pm
Operator : CHELSEAS
Sample : ic11221-0.5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 01 16:07:25 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration





TIC: n266322.D\data.ms

(36) 2-butanone

9.434min (+0.008) 1.55ug/L m

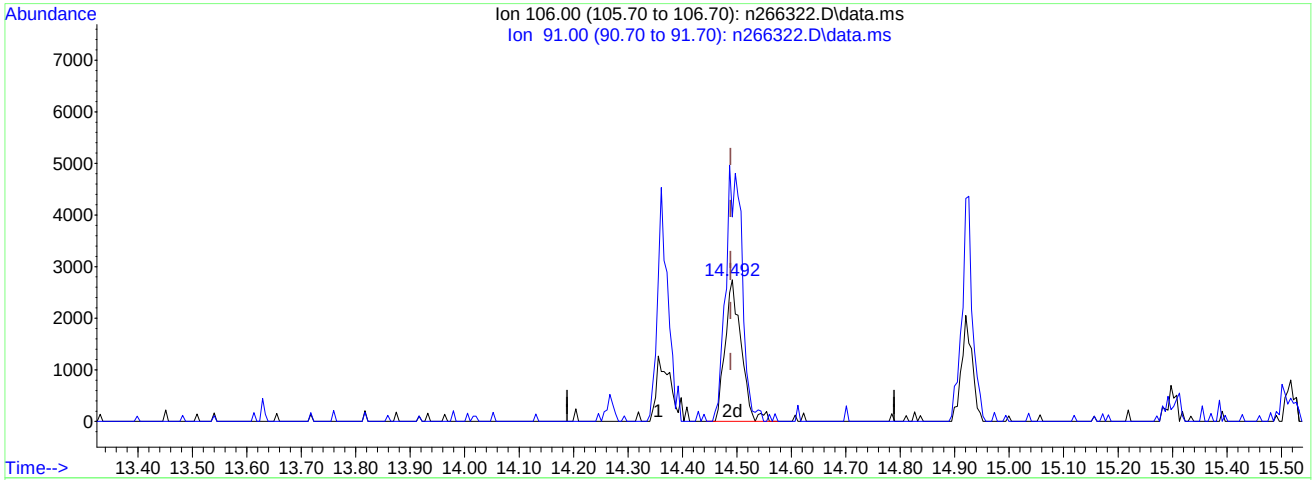
response 526

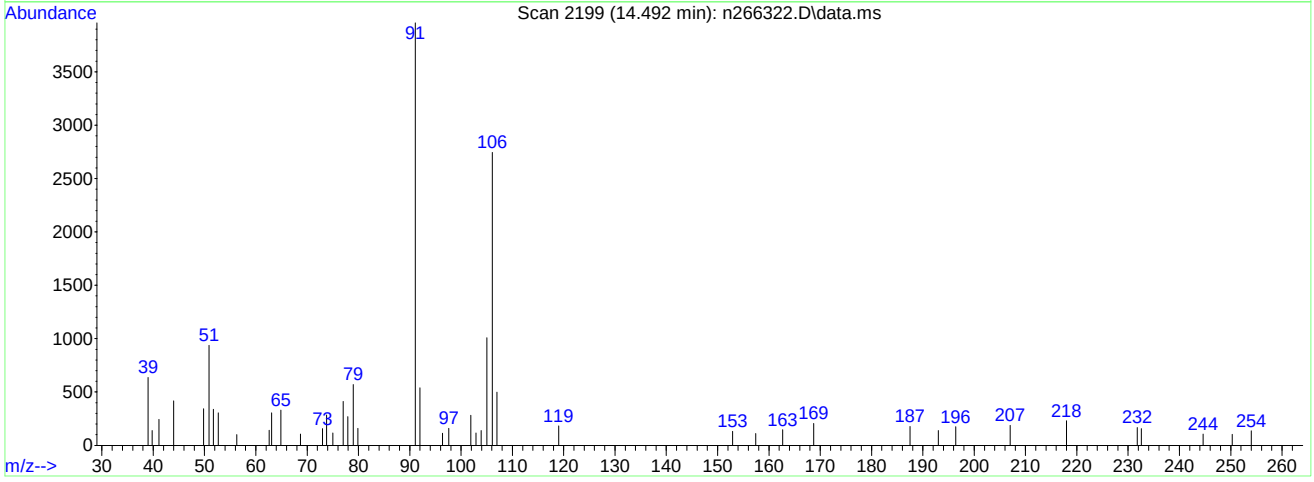
Ion	Exp%	Act%
72.00	100	100
57.00	25.90	51.73
43.00	327.20	176.30#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266322.D
Acq On : 30 Nov 2017 7:36 pm
Operator : CHELSEAS
Sample : ic11221-0.5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 01 16:07:25 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration





TIC: n266322.D\data.ms

(90) m,p-xylene (M)

14.492min (+0.003) 1.05ug/L m

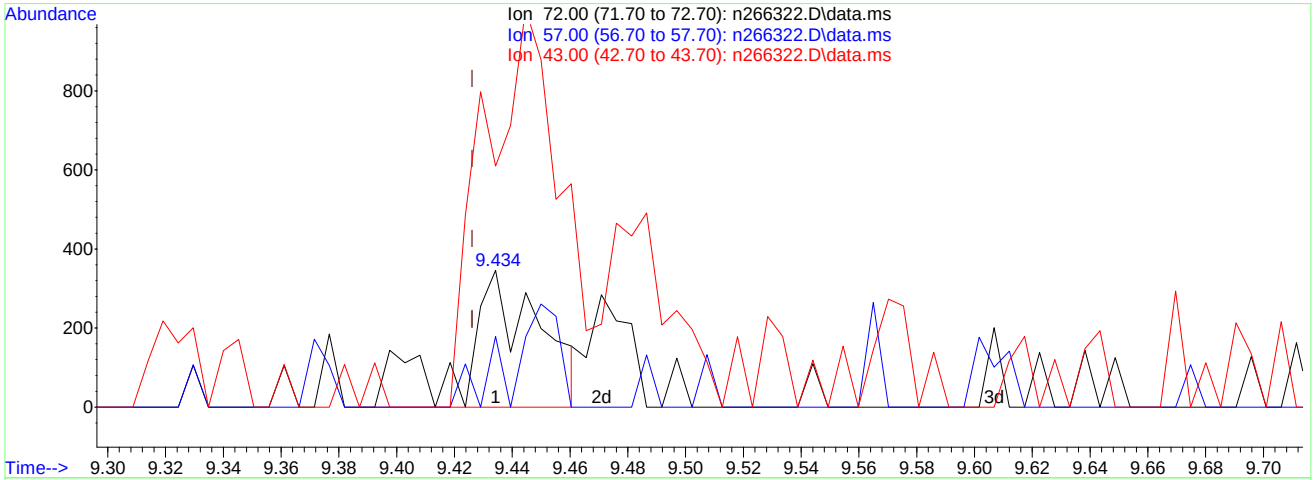
response 5611

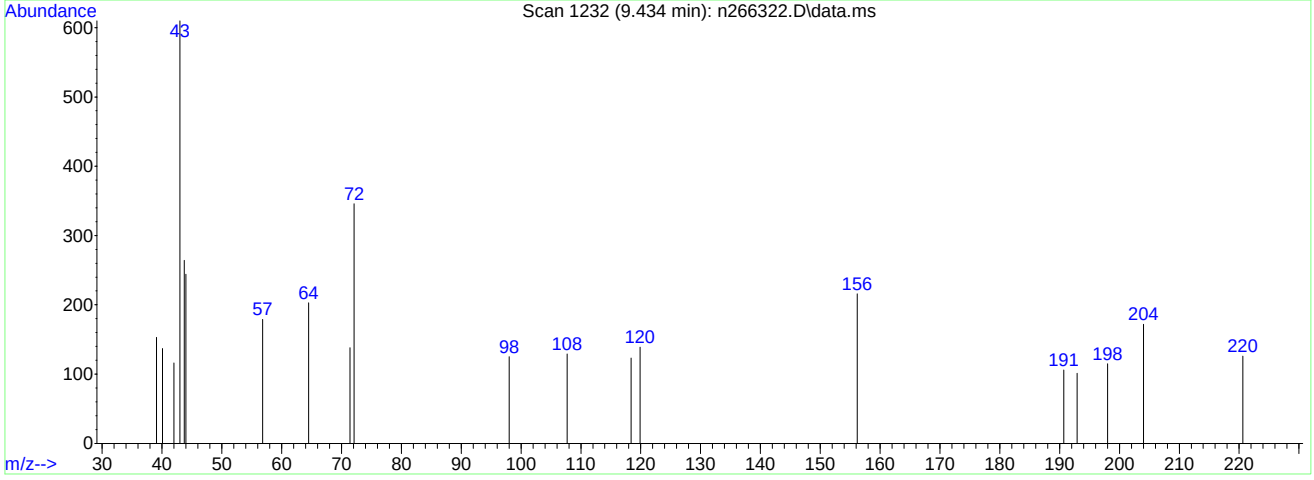
Ion	Exp%	Act%
106.00	100	100
91.00	191.30	144.21#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\Snapshot\
Data File : n266322.D
Acq On : 30 Nov 2017 7:36 pm
Operator : CHELSEAS
Sample : ic11221-0.5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 01 17:13:01 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration





TIC: n266322.D\data.ms

(36) 2-butanone

9.434min (+0.008) 2.04ug/L

response 644

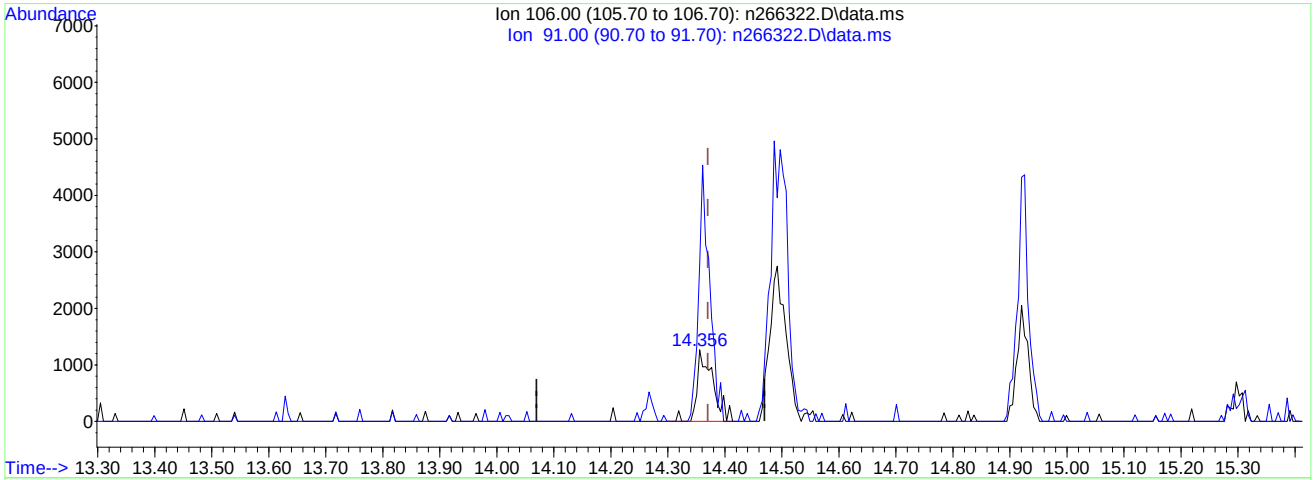
Ion	Exp%	Act%
72.00	100	100
57.00	25.90	51.73
43.00	327.20	252.60#
0.00	0.00	0.00

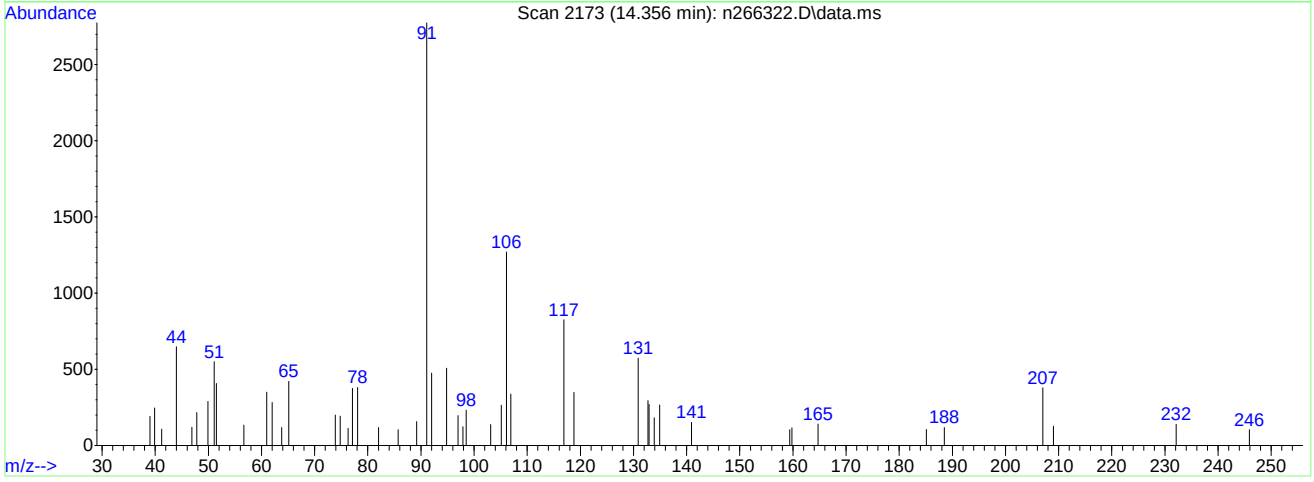
N266322.D edits: 2-butanone

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\Snapshot\
Data File : n266322.D
Acq On : 30 Nov 2017 7:36 pm
Operator : CHELSEAS
Sample : ic11221-0.5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 01 17:17:39 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 17:17:35 2017
Response via : Initial Calibration





TIC: n266322.D\data.ms

(90) m,p-xylene (M)

14.356min (-0.014) 0.44ug/L

response 2416

Ion	Exp%	Act%
106.00	100	100
91.00	32.00	218.50#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266323.D
Acq On : 30 Nov 2017 8:10 pm
Operator : CHELSEAS
Sample : ic11221-0.2
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 01 16:17:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

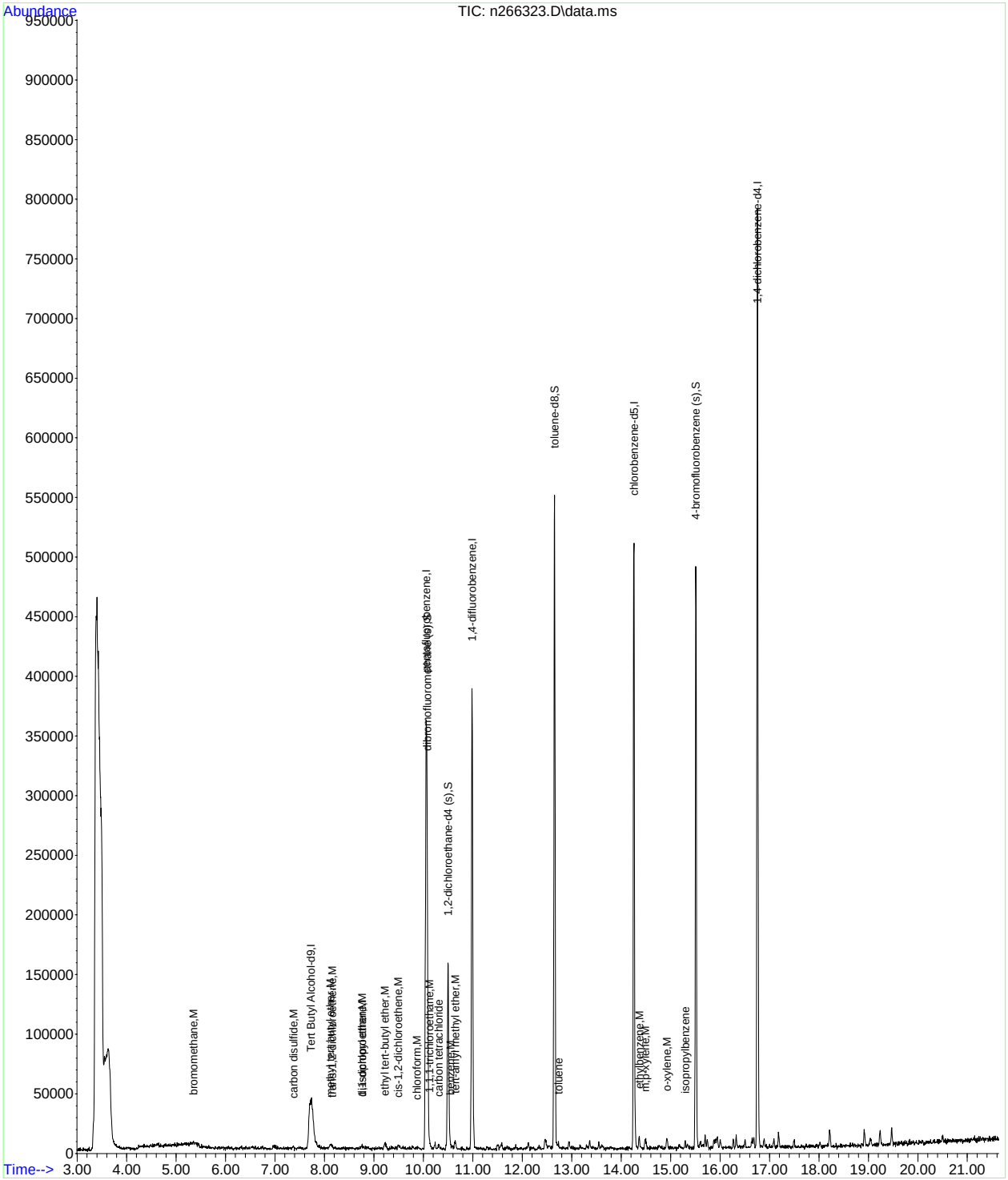
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.722	65	139061	300.00	ug/L		0.03
4) pentafluorobenzene	10.055	168	245213	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.986	114	315382	30.00	ug/L		0.00
74) chlorobenzene-d5	14.260	117	267195	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.755	152	203206	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.081	113	111727	28.68	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.60%				
54) 1,2-dichloroethane-d4 (s)	10.499	65	115260	29.76	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 99.20%				
75) toluene-d8	12.654	98	352915	30.09	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.30%				
97) 4-bromofluorobenzene (s)	15.510	95	140761	30.70	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.33%				
Target Compounds							Qvalue
12) bromomethane	5.342	94	1147	0.22	ug/L		82
24) carbon disulfide	7.377	76	2661	0.20	ug/L		84
27) methyl tert butyl ether	8.114	73	4649	0.38	ug/L		98
28) trans-1,2-dichloroethene	8.151	96	881	0.25	ug/L		83
31) di-isopropyl ether	8.768	45	2691	0.26	ug/L		86
32) 1,1-dichloroethane	8.758	63	1217	0.21	ug/L		85
35) ethyl tert-butyl ether	9.223	59	4244	0.36	ug/L		75
39) cis-1,2-dichloroethene	9.495	96	929	0.24	ug/L	#	57
44) chloroform	9.872	85	1031	0.26	ug/L	#	36
48) 1,1,1-trichloroethane	10.128	97	1606	0.22	ug/L	#	57
51) carbon tetrachloride	10.316	117	1444	0.21	ug/L		91
57) benzene	10.552	78	2188	0.18	ug/L		70
58) tert-amyl methyl ether	10.651	73	4674	0.43	ug/L		84
76) toluene	12.733	92	1732	0.25	ug/L		86
89) ethylbenzene	14.370	91	3328	0.25	ug/L		92
90) m,p-xylene	14.485	106	3148	0.58	ug/L	#	70
91) o-xylene	14.919	106	1490	0.25	ug/L	#	63
95) isopropylbenzene	15.295	105	3551	0.22	ug/L		82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266323.D
Acq On : 30 Nov 2017 8:10 pm
Operator : CHELSEAS
Sample : ic11221-0.2
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 01 16:17:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 12/04/17 01:45

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266324.D
Acq On : 30 Nov 2017 8:39 pm
Operator : CHELSEAS
Sample : ic11221-1
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 01 16:07:02 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.707	65	132387	300.00	ug/L		0.01
4) pentafluorobenzene	10.055	168	223746	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.986	114	296974	30.00	ug/L		0.00
74) chlorobenzene-d5	14.255	117	262737	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.755	152	201137	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.076	113	103729	29.18	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.27%				
54) 1,2-dichloroethane-d4 (s)	10.499	65	108321	29.70	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 99.00%				
75) toluene-d8	12.649	98	337930	29.30	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.67%				
97) 4-bromofluorobenzene (s)	15.510	95	140118	30.88	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.93%				
Target Compounds							Qvalue
5) freon 143a	3.664	69	6584	0.90	ug/L		99
6) freon 142b	4.239	65	5469	0.84	ug/L		84
7) chlorodifluoromethane	4.030	51	4927	0.97	ug/L		82
8) dichlorodifluoromethane	4.030	85	8436m	1.01	ug/L		
9) chloromethane	4.312	50	5694	0.99	ug/L		78
10) vinyl chloride	4.600	62	7672	1.00	ug/L		69
12) bromomethane	5.306	94	5003	1.07	ug/L		88
13) chloroethane	5.552	64	4504	1.11	ug/L		70
14) trichlorofluoromethane	6.049	101	8265m	0.93	ug/L		
16) freon 141b	6.551	81	5386	0.90	ug/L		90
17) ethyl ether	6.519	59	2094	0.93	ug/L		84
19) 1,1-dichloroethene	6.953	96	3679m	1.00	ug/L		
20) acetone	7.011	58	1699	4.86	ug/L	#	24
21) freon 113	6.995	101	4017	0.95	ug/L	#	57
23) iodomethane	7.225	142	6130	0.94	ug/L		96
24) carbon disulfide	7.361	76	11082	0.93	ug/L		87
25) methylene chloride	7.748	84	3393	0.95	ug/L	#	60
27) methyl tert butyl ether	8.125	73	21006	1.90	ug/L		86
28) trans-1,2-dichloroethene	8.135	96	3840	1.19	ug/L	#	55
31) di-isopropyl ether	8.758	45	8636	0.90	ug/L		93
32) 1,1-dichloroethane	8.758	63	5284	0.98	ug/L		77
33) chloroprene	8.857	53	3627	0.85	ug/L		62
35) ethyl tert-butyl ether	9.213	59	17972	1.68	ug/L		87
36) 2-butanone	9.443	72	1132	3.38	ug/L		90
38) 2,2-dichloropropane	9.511	77	5630	0.88	ug/L		92
39) cis-1,2-dichloroethene	9.490	96	4221	1.19	ug/L	#	48
41) propionitrile	9.527	54	3712	9.63	ug/L		80
42) bromochloromethane	9.799	128	1615	0.93	ug/L	#	57
43) tetrahydrofuran	9.799	71	336	1.02	ug/L	#	30
44) chloroform	9.882	85	3695	1.02	ug/L	#	64
47) methacrylonitrile	9.715	67	1337	1.28	ug/L		78
48) 1,1,1-trichloroethane	10.128	97	6569	0.99	ug/L		93
49) cyclohexane	10.227	84	5711	0.82	ug/L		84
50) 1,1-dichloropropene	10.295	75	4131	1.04	ug/L	#	66
51) carbon tetrachloride	10.322	117	5427	0.87	ug/L		88
56) 2,2,4-trimethylpentane	10.641	57	9760	0.75	ug/L		98
57) benzene	10.541	78	10476	0.91	ug/L		100
58) tert-amyl methyl ether	10.646	73	18717	1.83	ug/L		92
59) 1,2-dichloroethane	10.588	62	4049	1.04	ug/L		80
62) trichloroethene	11.289	95	2735	0.94	ug/L	#	56
63) methyl methacrylate	11.566	69	2295	0.73	ug/L	#	41
64) 1,2-dichloropropane	11.598	63	2398	0.83	ug/L		64
65) methylcyclohexane	11.582	83	5929	0.79	ug/L		78
66) dibromomethane	11.702	93	1763	1.03	ug/L	#	58
67) bromodichloromethane	11.854	83	3762	0.97	ug/L		98
69) 2-chloroethyl vinyl ether	12.121	63	5050	3.89	ug/L		86

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266324.D
Acq On : 30 Nov 2017 8:39 pm
Operator : CHELSEAS
Sample : ic11221-1
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 01 16:07:02 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

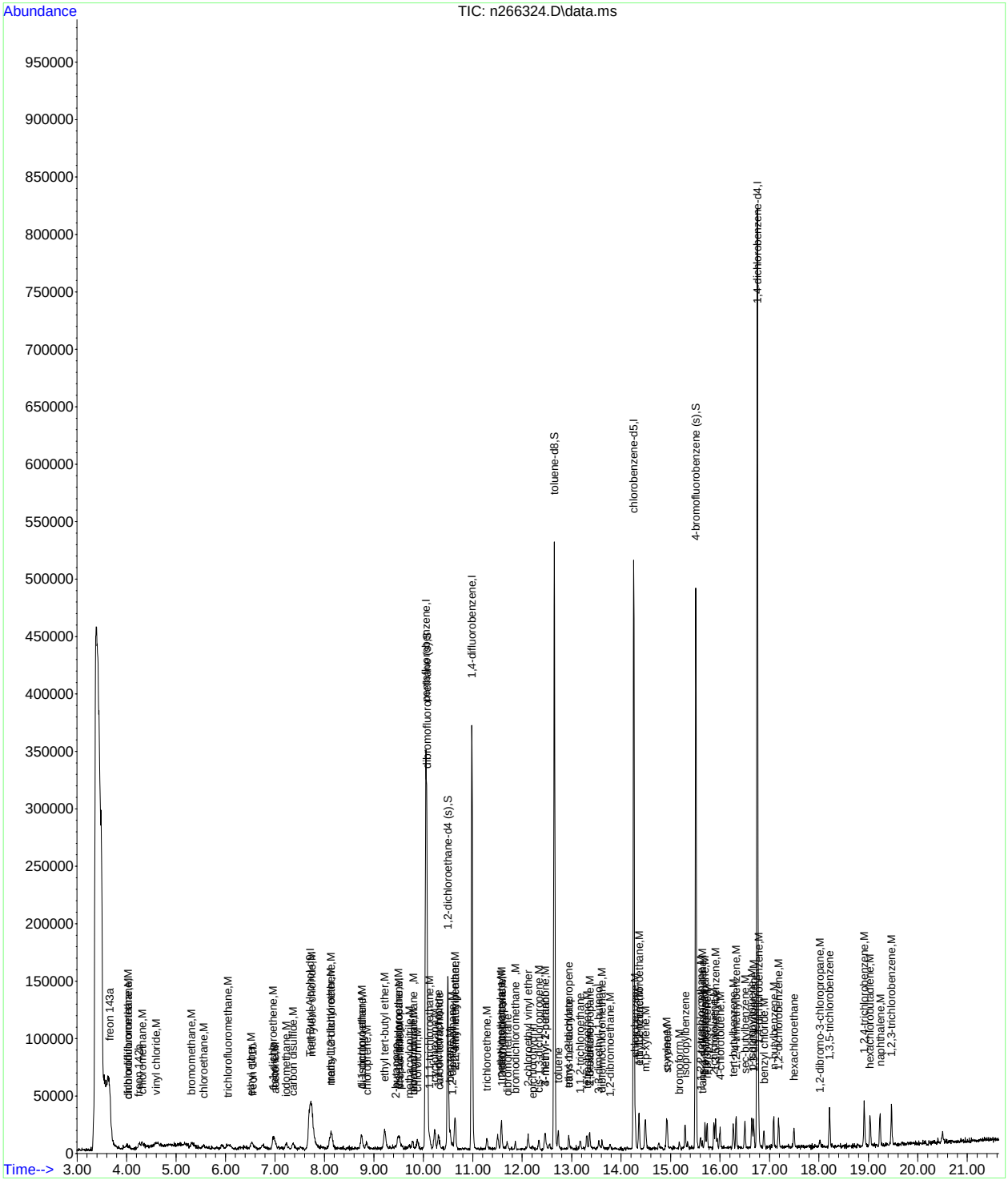
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
70) epichlorohydrin	12.204	57	1264	5.12	ug/L		87
71) cis-1,3-dichloropropene	12.340	75	4249	0.98	ug/L		73
72) 4-methyl-2-pentanone	12.461	58	2915	2.86	ug/L		86
73) 3-methyl-1-butanol	12.466	55	2896	20.00	ug/L		80
76) toluene	12.733	92	6203	0.91	ug/L		85
77) ethyl methacrylate	12.942	69	2850	0.95	ug/L		76
78) trans-1,3-dichloropropene	12.947	75	3101	0.81	ug/L		81
79) 1,1,2-trichloroethane	13.177	83	1695	0.89	ug/L	#	75
80) tetrachloroethene	13.313	164	2642	0.99	ug/L		83
81) 2-hexanone	13.355	58	2766	3.05	ug/L		92
82) 1,3-dichloropropane	13.360	76	4141	1.13	ug/L		74
84) 3,3-dimethyl-1-butanol	13.543	57	3555	10.60	ug/L		81
85) dibromochloromethane	13.611	129	2799	0.95	ug/L		88
86) 1,2-dibromoethane	13.773	107	1995	0.82	ug/L		79
87) chlorobenzene	14.286	112	7686	1.00	ug/L		88
88) 1,1,1,2-tetrachloroethane	14.364	131	3062	0.78	ug/L		92
89) ethylbenzene	14.359	91	11745	0.89	ug/L		96
90) m,p-xylene	14.495	106	9976	1.86	ug/L	#	61
91) o-xylene	14.914	106	4616	0.80	ug/L	#	77
92) styrene	14.935	104	7843	0.92	ug/L		89
94) bromoform	15.175	173	1933	0.86	ug/L		83
95) isopropylbenzene	15.295	105	12754	0.79	ug/L		95
98) bromobenzene	15.698	156	4139	1.00	ug/L	#	79
99) 1,1,2,2-tetrachloroethane	15.604	83	3375	0.93	ug/L		78
100) trans-1,4-dichloro-2-b...	15.646	53	927	1.07	ug/L	#	54
101) 1,2,3-trichloropropane	15.688	110	1237	1.14	ug/L		67
102) n-propylbenzene	15.730	120	4035	0.93	ug/L	#	23
103) 2-chlorotoluene	15.876	126	3879	0.95	ug/L	#	67
104) 4-chlorotoluene	16.002	126	3074	0.83	ug/L	#	81
105) 1,3,5-trimethylbenzene	15.907	105	12086	0.79	ug/L		90
106) tert-butylbenzene	16.263	134	2343	0.68	ug/L	#	76
107) 1,2,4-trimethylbenzene	16.326	105	13622	0.88	ug/L		96
108) sec-butylbenzene	16.504	105	15182	0.75	ug/L		95
109) 1,3-dichlorobenzene	16.681	146	9265	1.06	ug/L		89
110) p-isopropyltoluene	16.645	119	13567	0.76	ug/L		89
111) 1,4-dichlorobenzene	16.786	146	9915	1.08	ug/L		86
112) 1,2-dichlorobenzene	17.183	146	10543	1.10	ug/L		91
113) benzyl chloride	16.885	91	8638	0.97	ug/L		98
115) n-butylbenzene	17.089	92	7416	0.80	ug/L	#	72
116) hexachloroethane	17.503	201	2755	0.71	ug/L	#	65
117) 1,2-dibromo-3-chloropr...	18.020	157	1429	1.01	ug/L		78
119) 1,3,5-trichlorobenzene	18.219	180	9414	0.80	ug/L		83
120) 1,2,4-trichlorobenzene	18.920	180	11444	1.02	ug/L		85
121) hexachlorobutadiene	19.030	225	5701	0.91	ug/L		95
122) naphthalene	19.239	128	21156	0.92	ug/L		94
123) 1,2,3-trichlorobenzene	19.469	180	10053	0.91	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266324.D
Acq On : 30 Nov 2017 8:39 pm
Operator : CHELSEAS
Sample : ic11221-1
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 01 16:07:02 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration



Manual Integration Approval Summary

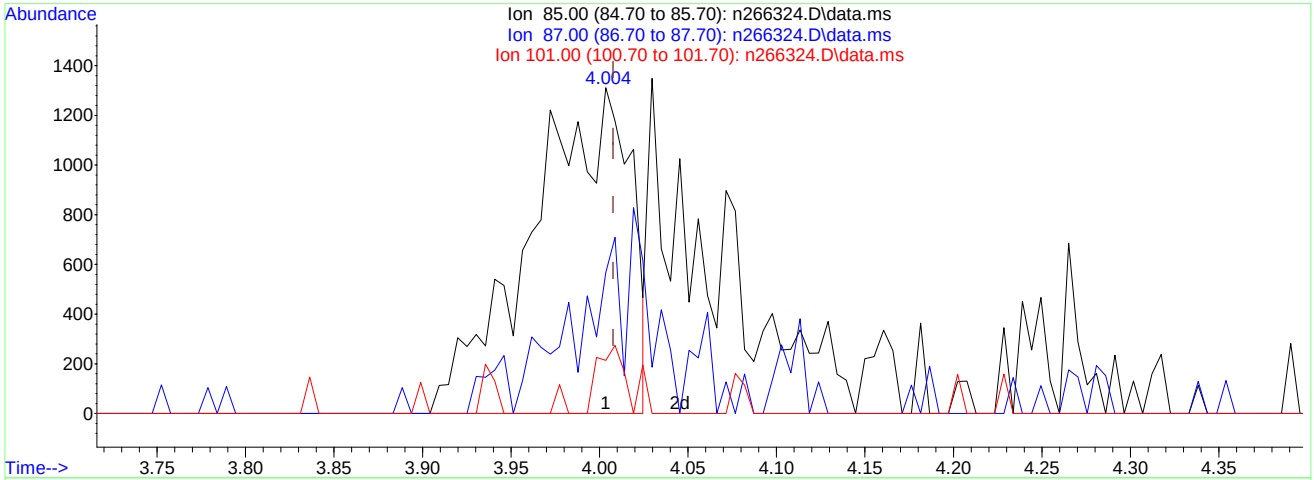
Sample Number: VN11221-IC11221 **Method:** EPA 624
Lab FileID: N266324.D **Analyst approved:** 12/01/17 16:54 Ying Li
Injection Time: 11/30/17 20:39 **Supervisor approved:** 12/04/17 01:45 Kanya Veerawat

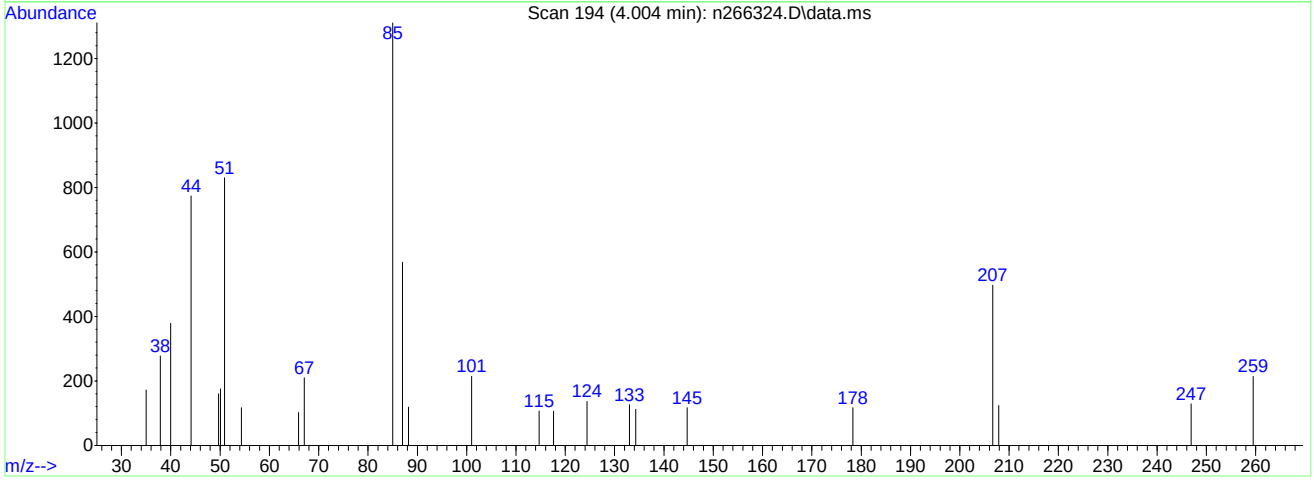
Parameter	CAS	Sig#	R.T. (min.)	Reason
Dichlorodifluoromethane	75-71-8		4.03	Split peak
Trichlorofluoromethane	75-69-4		6.05	Split peak
1,1-Dichloroethene	75-35-4		6.95	Split peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266324.D
Acq On : 30 Nov 2017 8:39 pm
Operator : CHELSEAS
Sample : ic11221-1
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 01 15:32:58 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:23:17 2017
Response via : Initial Calibration





TIC: n266324.D\data.ms

(8) dichlorodifluoromethane (M)

4.004min (-0.004) 0.62ug/L

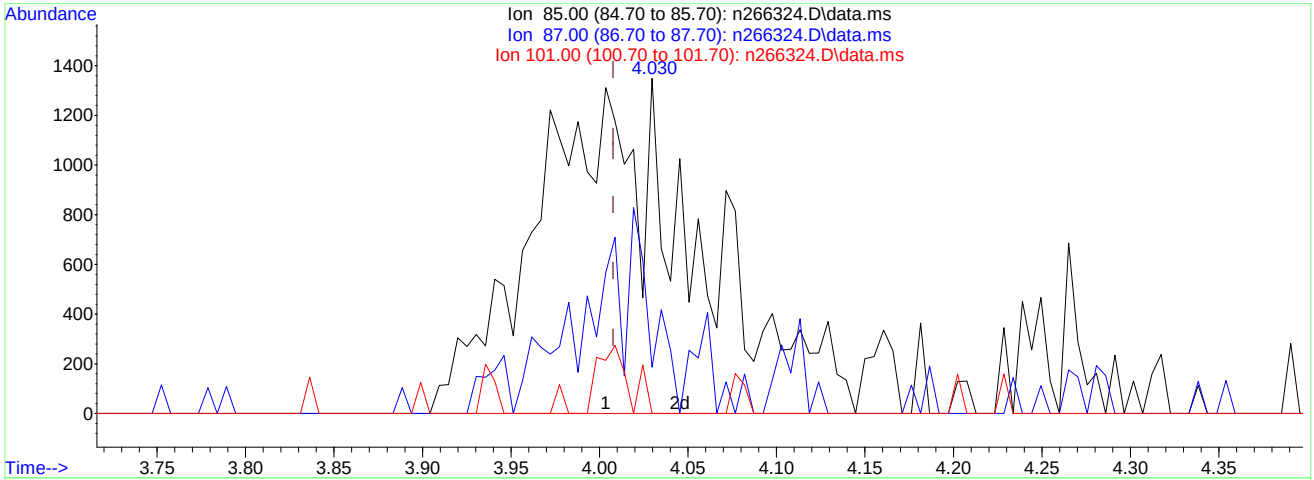
response 5131

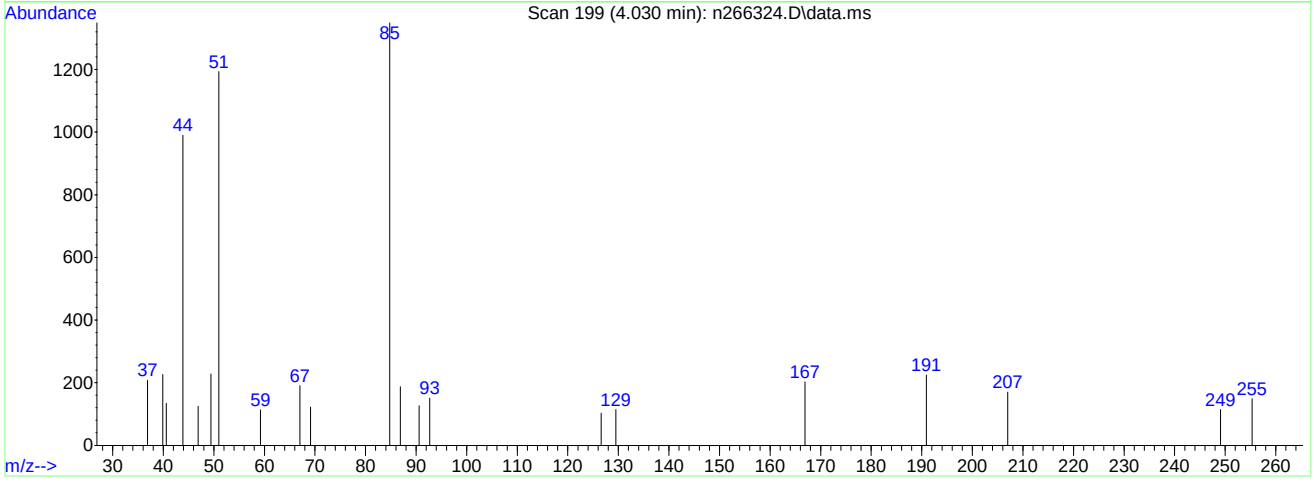
Ion	Exp%	Act%
85.00	100	100
87.00	30.00	35.39
101.00	11.10	16.32
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266324.D
Acq On : 30 Nov 2017 8:39 pm
Operator : CHELSEAS
Sample : ic11221-1
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 01 15:32:58 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:23:17 2017
Response via : Initial Calibration





TIC: n266324.D\data.ms

(8) dichlorodifluoromethane (M)

4.030min (+0.022) 1.01ug/L m

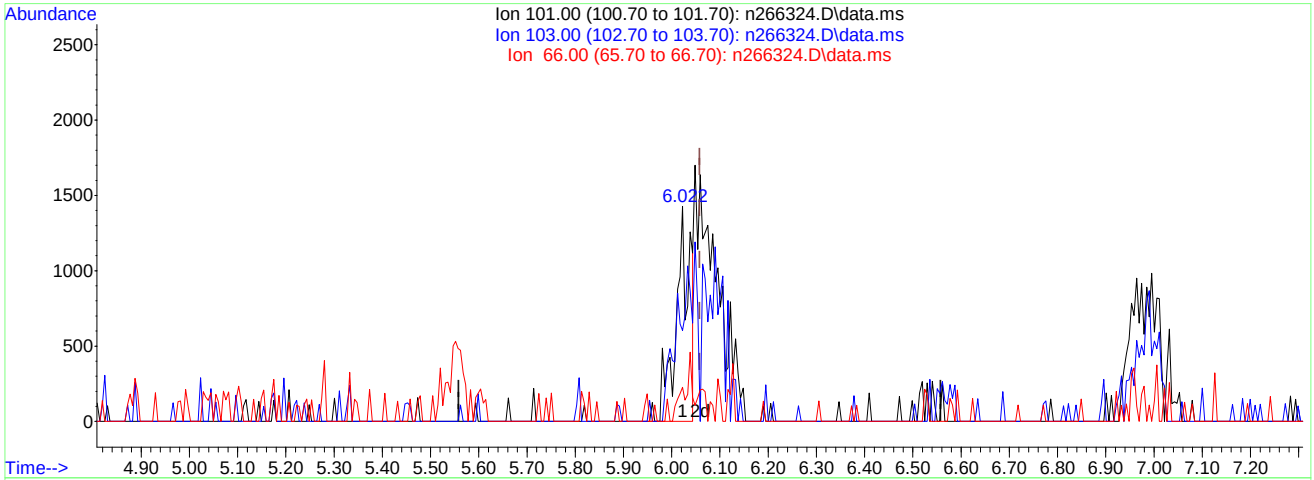
response 8436

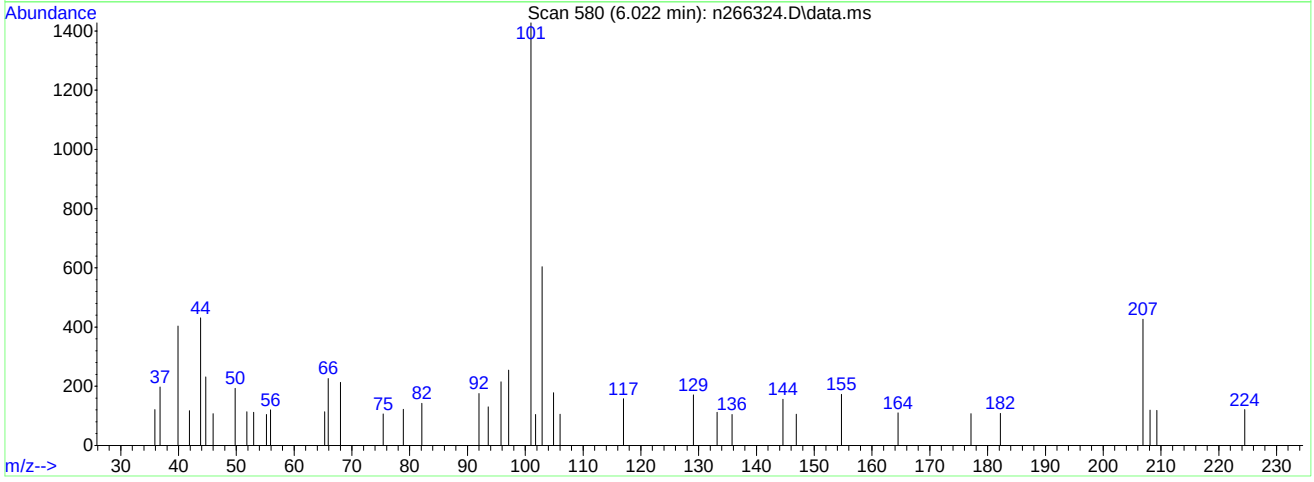
Ion	Exp%	Act%
85.00	100	100
87.00	30.00	13.86
101.00	11.10	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266324.D
Acq On : 30 Nov 2017 8:39 pm
Operator : CHELSEAS
Sample : ic11221-1
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 01 15:32:58 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:23:17 2017
Response via : Initial Calibration





TIC: n266324.D\data.ms

(14) trichlorofluoromethane (M)

6.022min (-0.035) 0.33ug/L

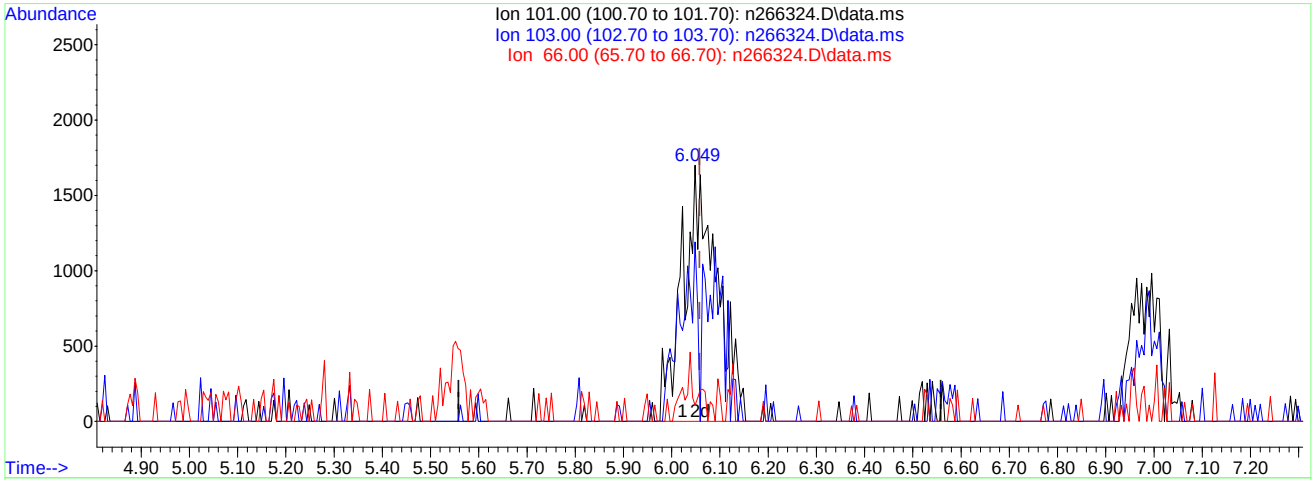
response 2927

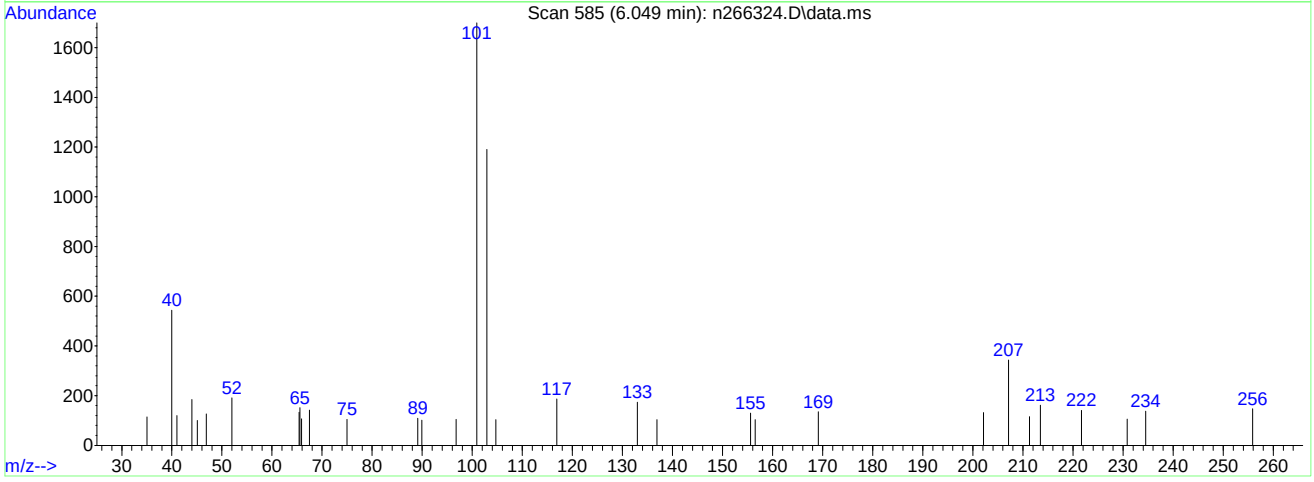
Ion	Exp%	Act%
101.00	100	100
103.00	60.50	42.30
66.00	10.50	15.83
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266324.D
Acq On : 30 Nov 2017 8:39 pm
Operator : CHELSEAS
Sample : ic11221-1
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 01 15:32:58 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:23:17 2017
Response via : Initial Calibration





TIC: n266324.D\data.ms

(14) trichlorofluoromethane (M)

6.049min (-0.009) 0.93ug/L m

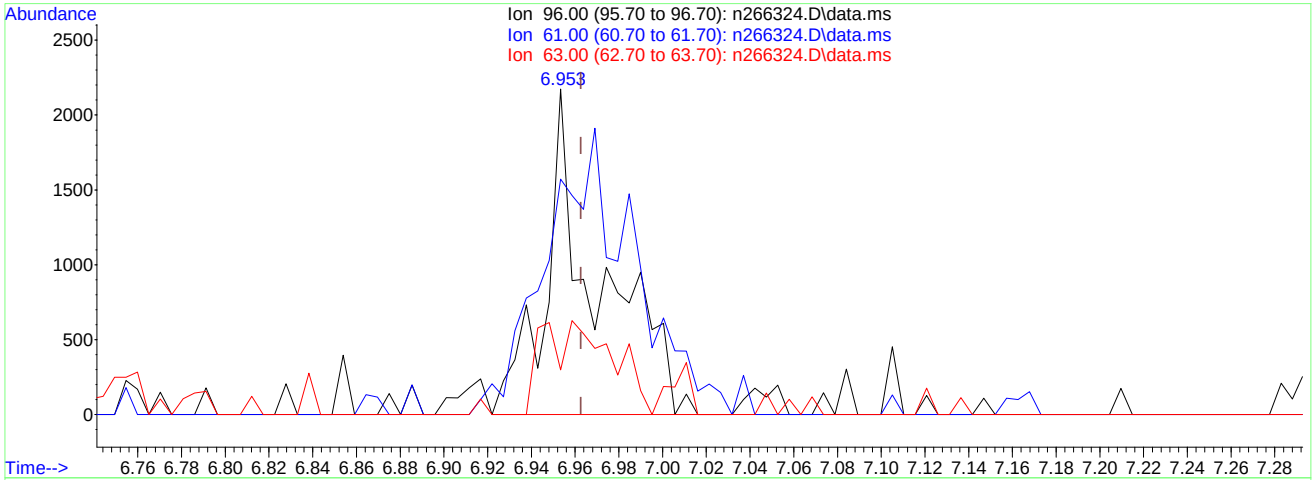
response 8265

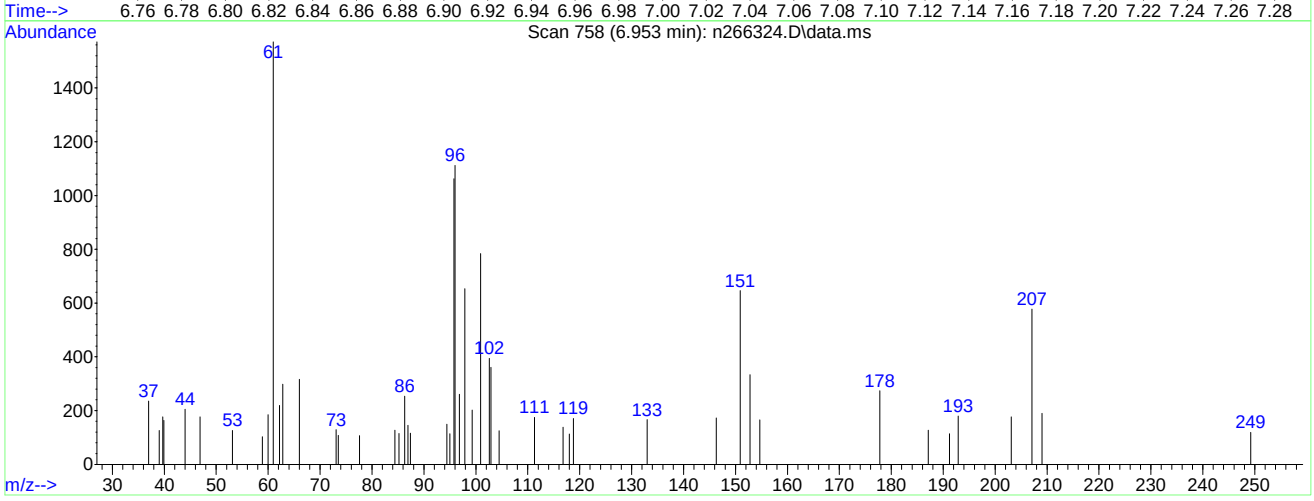
Ion	Exp%	Act%
101.00	100	100
103.00	60.50	70.06
66.00	10.50	6.29
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266324.D
Acq On : 30 Nov 2017 8:39 pm
Operator : CHELSEAS
Sample : ic11221-1
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 01 16:01:10 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration





TIC: n266324.D\data.ms

(19) 1,1-dichloroethene (M)

6.953min (-0.009) 1.00ug/L m

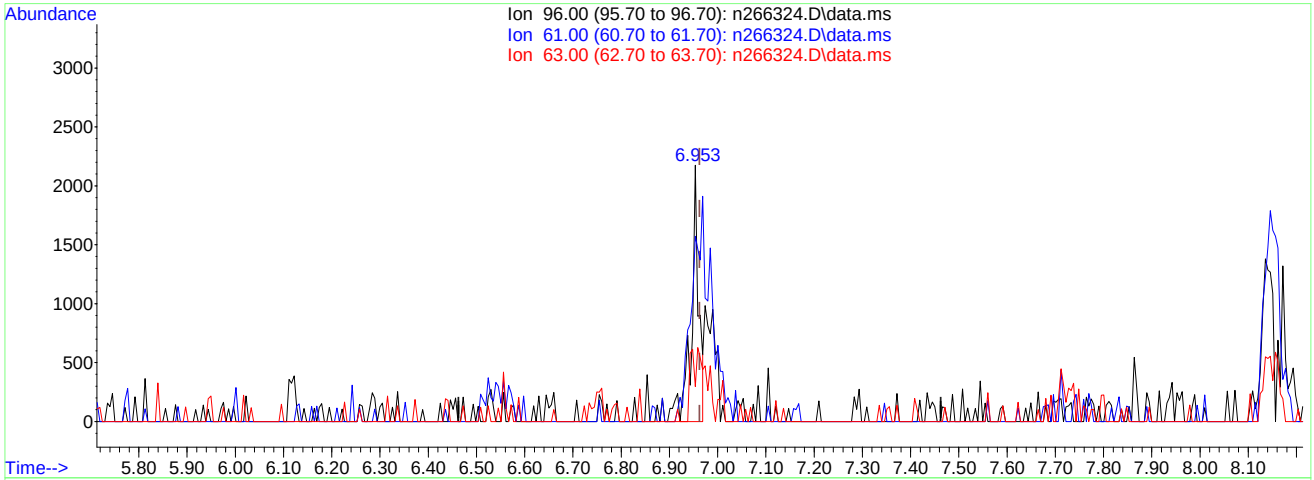
response 3679

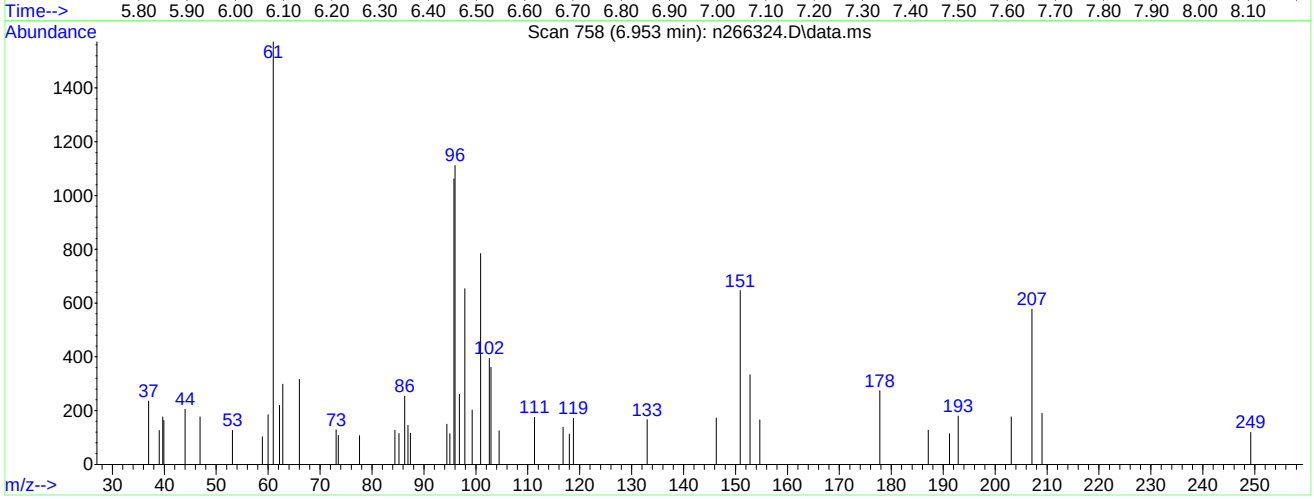
Ion	Exp%	Act%
96.00	100	100
61.00	151.90	141.37
63.00	48.10	26.80
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\Snapshot\
Data File : n266324.D
Acq On : 30 Nov 2017 8:39 pm
Operator : CHELSEAS
Sample : ic11221-1
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 01 17:20:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration





TIC: n266324.D\data.ms

(19) 1,1-dichloroethene (M)

6.953min (-0.009) 0.65ug/L

response 2372

Ion	Exp%	Act%
96.00	100	100
61.00	151.90	72.31#
63.00	48.10	13.71#
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 12/04/17 01:45

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266325.D
Acq On : 30 Nov 2017 9:08 pm
Operator : CHELSEAS
Sample : ic11221-2
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 01 16:34:38 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.730	65	134947	300.00	ug/L		0.03
4) pentafluorobenzene	10.052	168	232828	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.983	114	294330	30.00	ug/L		0.00
74) chlorobenzene-d5	14.257	117	261869	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.757	152	209514	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.078	113	107761	29.13	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.10%				
54) 1,2-dichloroethane-d4 (s)	10.497	65	113552	31.42	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 104.73%				
75) toluene-d8	12.651	98	337373	29.35	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.83%				
97) 4-bromofluorobenzene (s)	15.507	95	141684	29.97	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.90%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.871	59	4915	12.14	ug/L		84
3) 1,4-dioxane	11.663	88	1749	49.35	ug/L	#	45
5) freon 143a	3.671	69	12886	1.70	ug/L		70
6) freon 142b	4.278	65	11294	1.68	ug/L		93
7) chlorodifluoromethane	4.037	51	8934	1.69	ug/L		81
8) dichlorodifluoromethane	4.016	85	17548	2.02	ug/L		90
9) chloromethane	4.341	50	12668	2.12	ug/L		70
10) vinyl chloride	4.628	62	15492	1.94	ug/L		96
12) bromomethane	5.329	94	10388	2.14	ug/L		90
13) chloroethane	5.559	64	8806	2.08	ug/L		82
14) trichlorofluoromethane	6.072	101	18626	2.02	ug/L		96
16) freon 141b	6.564	81	11156	1.78	ug/L		87
17) ethyl ether	6.511	59	3884	1.66	ug/L	#	71
18) acrolein	6.773	56	1582	2.35	ug/L		73
19) 1,1-dichloroethene	6.977	96	7480	1.96	ug/L		90
20) acetone	6.998	58	3498	9.61	ug/L	#	73
21) freon 113	6.987	101	7215	1.64	ug/L		77
23) iodomethane	7.233	142	12640	1.87	ug/L		92
24) carbon disulfide	7.369	76	22063	1.79	ug/L		94
25) methylene chloride	7.746	84	7062	1.89	ug/L		82
26) methyl acetate	7.505	43	3927	1.88	ug/L		94
27) methyl tert butyl ether	8.127	73	40802	3.54	ug/L		94
28) trans-1,2-dichloroethene	8.148	96	6937	2.07	ug/L		85
29) acrylonitrile	8.080	53	2102	1.67	ug/L		89
31) di-isopropyl ether	8.750	45	18955	1.90	ug/L		88
32) 1,1-dichloroethane	8.750	63	10666	1.90	ug/L		90
33) chloroprene	8.849	53	7974	1.81	ug/L		91
35) ethyl tert-butyl ether	9.215	59	38186	3.44	ug/L		94
36) 2-butanone	9.445	72	2386	6.84	ug/L	#	48
38) 2,2-dichloropropane	9.519	77	11693	1.75	ug/L		90
39) cis-1,2-dichloroethene	9.492	96	7552	2.05	ug/L		77
40) methyl acrylate	9.529	85	671	1.63	ug/L	#	1
41) propionitrile	9.519	54	7536	18.78	ug/L		94
42) bromochloromethane	9.785	128	3818	2.11	ug/L	#	72
43) tetrahydrofuran	9.801	71	738	2.16	ug/L	#	55
44) chloroform	9.885	85	6964	1.84	ug/L	#	74
45) t-butyl formate	9.906	59	1421	1.62	ug/L	#	52
47) methacrylonitrile	9.712	67	1356	1.24	ug/L		75
48) 1,1,1-trichloroethane	10.130	97	13268	1.91	ug/L		92
49) cyclohexane	10.225	84	13284	1.82	ug/L		87
50) 1,1-dichloropropene	10.303	75	7555	1.83	ug/L		83
51) carbon tetrachloride	10.319	117	11050	1.70	ug/L		83
56) 2,2,4-trimethylpentane	10.643	57	18648	1.45	ug/L		89
57) benzene	10.549	78	22583	1.98	ug/L		98
58) tert-amyl methyl ether	10.638	73	36897	3.63	ug/L		97
59) 1,2-dichloroethane	10.591	62	7745	2.01	ug/L		89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266325.D
Acq On : 30 Nov 2017 9:08 pm
Operator : CHELSEAS
Sample : ic11221-2
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 01 16:34:38 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

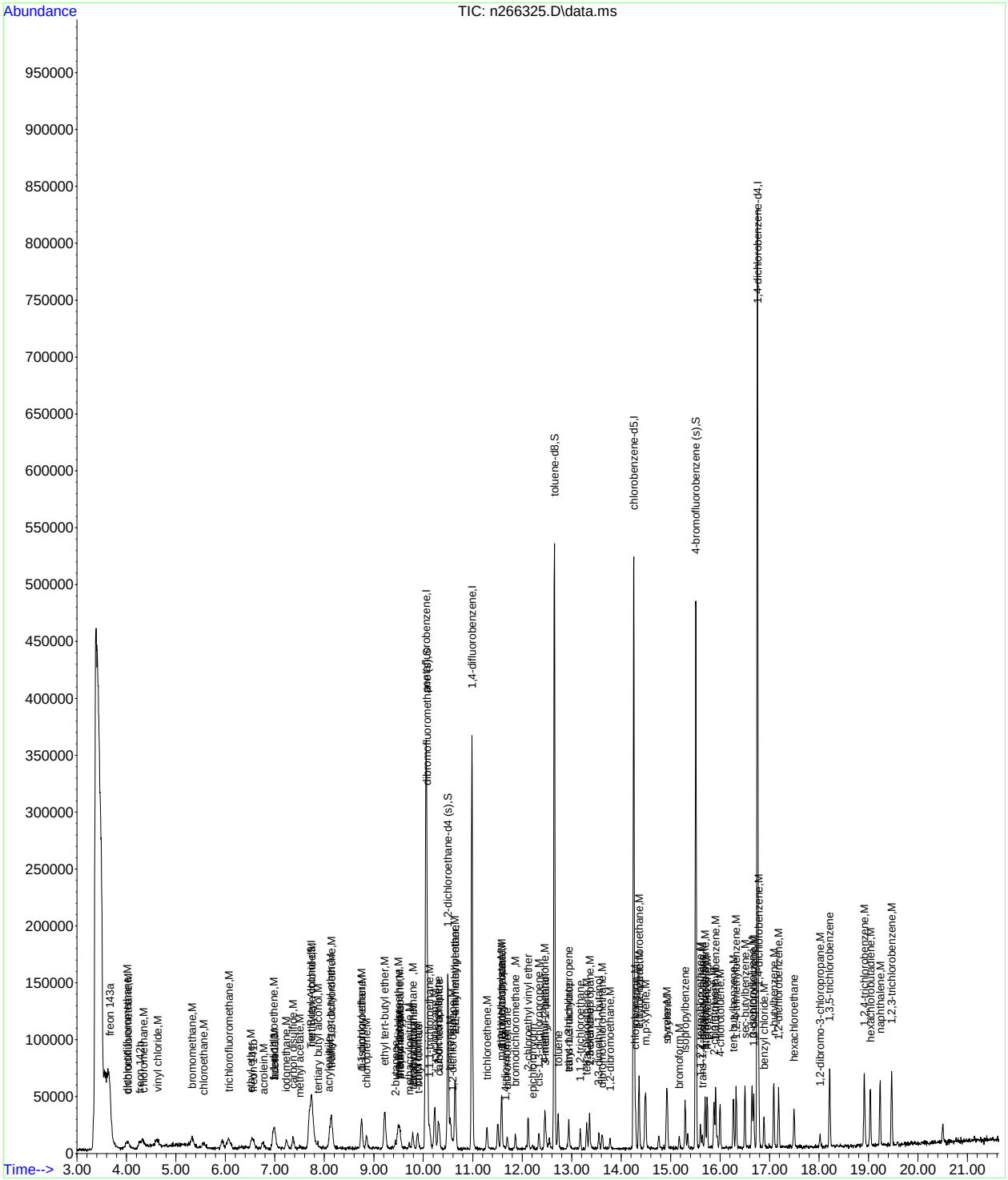
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
62) trichloroethene	11.286	95	5536	1.93 ug/L		92
63) methyl methacrylate	11.569	69	4863	1.56 ug/L	#	60
64) 1,2-dichloropropane	11.584	63	4867	1.70 ug/L		81
65) methylcyclohexane	11.584	83	12024	1.61 ug/L		86
66) dibromomethane	11.700	93	3463	2.05 ug/L	#	67
67) bromodichloromethane	11.862	83	7390	1.92 ug/L		89
69) 2-chloroethyl vinyl ether	12.118	63	10918	8.48 ug/L		99
70) epichlorohydrin	12.202	57	2244	9.17 ug/L		92
71) cis-1,3-dichloropropene	12.338	75	7026	1.63 ug/L		96
72) 4-methyl-2-pentanone	12.458	58	8903	8.81 ug/L	#	69
73) 3-methyl-1-butanol	12.468	55	6507	45.33 ug/L		70
76) toluene	12.730	92	11438	1.69 ug/L	#	65
77) ethyl methacrylate	12.939	69	5662	1.90 ug/L	#	70
78) trans-1,3-dichloropropene	12.939	75	7139	1.87 ug/L		91
79) 1,1,2-trichloroethane	13.174	83	3472	1.83 ug/L	#	76
80) tetrachloroethene	13.300	164	4599	1.73 ug/L	#	78
81) 2-hexanone	13.363	58	6800	7.53 ug/L		95
82) 1,3-dichloropropane	13.363	76	7830	2.14 ug/L		95
84) 3,3-dimethyl-1-butanol	13.546	57	6578m	19.67 ug/L		
85) dibromochloromethane	13.619	129	5846	1.99 ug/L		81
86) 1,2-dibromoethane	13.776	107	4747	1.97 ug/L		86
87) chlorobenzene	14.288	112	15068	1.96 ug/L		89
88) 1,1,1,2-tetrachloroethane	14.367	131	7057	1.81 ug/L	#	78
89) ethylbenzene	14.356	91	24233	1.84 ug/L		83
90) m,p-xylene	14.492	106	19880	3.71 ug/L		95
91) o-xylene	14.921	106	9326	1.62 ug/L		88
92) styrene	14.932	104	15871	1.86 ug/L		87
94) bromoform	15.172	173	4318	1.94 ug/L		84
95) isopropylbenzene	15.293	105	25749	1.61 ug/L		92
98) bromobenzene	15.701	156	7783	1.80 ug/L		93
99) 1,1,2,2-tetrachloroethane	15.606	83	7538	2.00 ug/L		91
100) trans-1,4-dichloro-2-b...	15.643	53	2004	2.22 ug/L		81
101) 1,2,3-trichloropropane	15.701	110	2868	2.55 ug/L		75
102) n-propylbenzene	15.737	120	8312	1.84 ug/L	#	86
103) 2-chlorotoluene	15.873	126	7005	1.64 ug/L		95
104) 4-chlorotoluene	15.999	126	7620	1.99 ug/L		85
105) 1,3,5-trimethylbenzene	15.910	105	25414	1.60 ug/L		97
106) tert-butylbenzene	16.271	134	5611	1.55 ug/L	#	65
107) 1,2,4-trimethylbenzene	16.323	105	26443	1.64 ug/L		89
108) sec-butylbenzene	16.501	105	32300	1.53 ug/L		91
109) 1,3-dichlorobenzene	16.684	146	18329	2.01 ug/L		99
110) p-isopropyltoluene	16.647	119	28894	1.55 ug/L		93
111) 1,4-dichlorobenzene	16.783	146	17333m	1.81 ug/L		
112) 1,2-dichlorobenzene	17.186	146	20140	2.01 ug/L		87
113) benzyl chloride	16.883	91	18921	2.05 ug/L		94
115) n-butylbenzene	17.087	92	16067	1.67 ug/L		94
116) hexachloroethane	17.489	201	6134	1.52 ug/L		89
117) 1,2-dibromo-3-chloropr...	18.018	157	3097	2.09 ug/L	#	65
119) 1,3,5-trichlorobenzene	18.211	180	22599	1.84 ug/L		93
120) 1,2,4-trichlorobenzene	18.912	180	20375	1.74 ug/L		82
121) hexachlorobutadiene	19.037	225	10988	1.69 ug/L		92
122) naphthalene	19.236	128	40540	1.69 ug/L		94
123) 1,2,3-trichlorobenzene	19.471	180	20048	1.74 ug/L		92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266325.D
Acq On : 30 Nov 2017 9:08 pm
Operator : CHELSEAS
Sample : ic11221-2
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 01 16:34:38 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration



Manual Integration Approval Summary

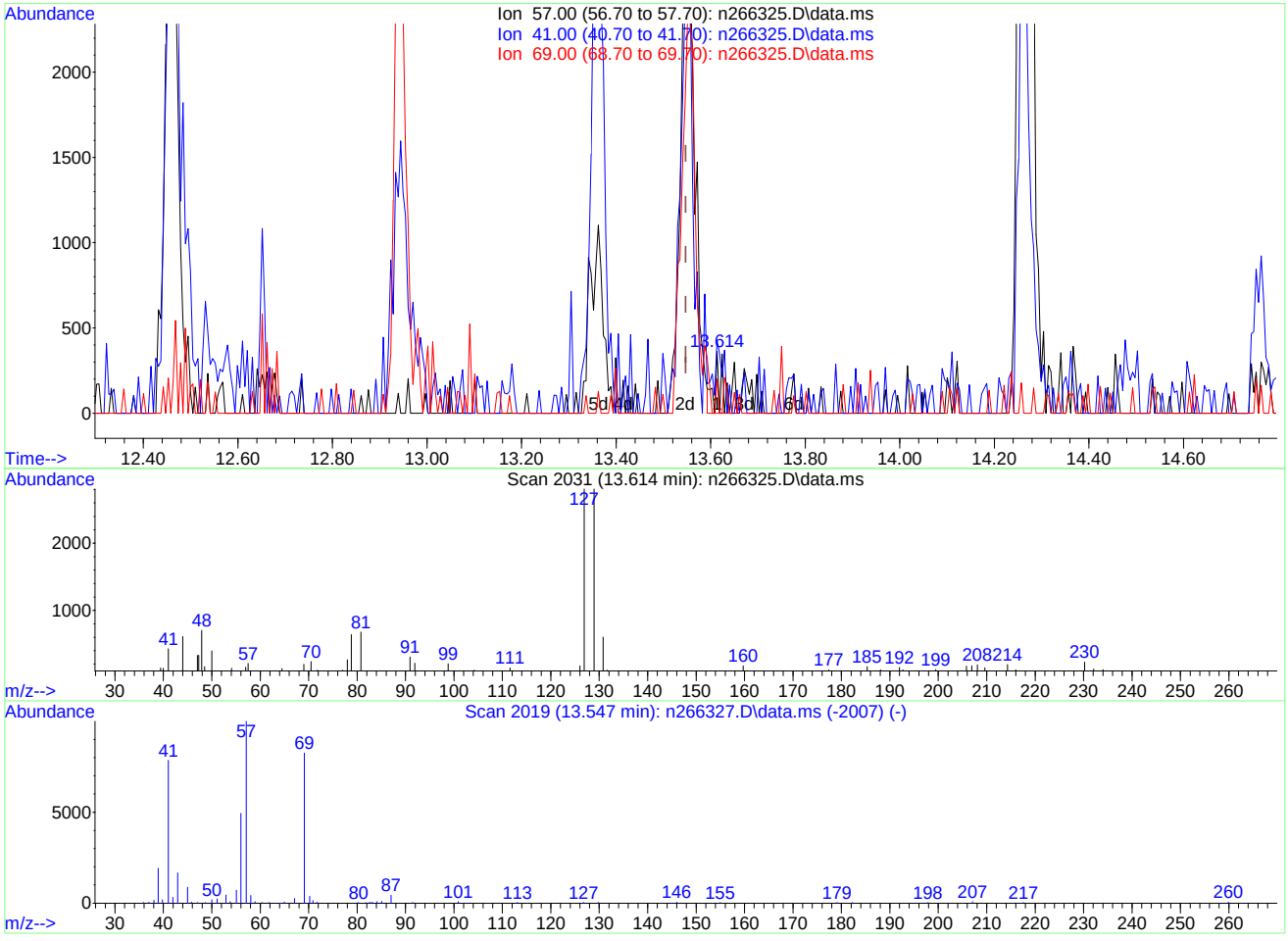
Sample Number:	VN11221-IC11221	**Method:**	EPA 624
Lab FileID:	N266325.D	**Analyst approved:**	12/01/17 16:54 Ying Li
Injection Time:	11/30/17 21:08	**Supervisor approved:**	12/04/17 01:45 Kanya Veerawat

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dichlorobenzene	106-46-7		16.78	Split peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266325.D
Acq On : 30 Nov 2017 9:08 pm
Operator : CHELSEAS
Sample : ic11221-2
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 01 15:26:50 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:23:17 2017
Response via : Initial Calibration



TIC: n266325.D\data.ms

(84) 3,3-dimethyl-1-butanol

13.614min (+0.066) 1.51ug/L

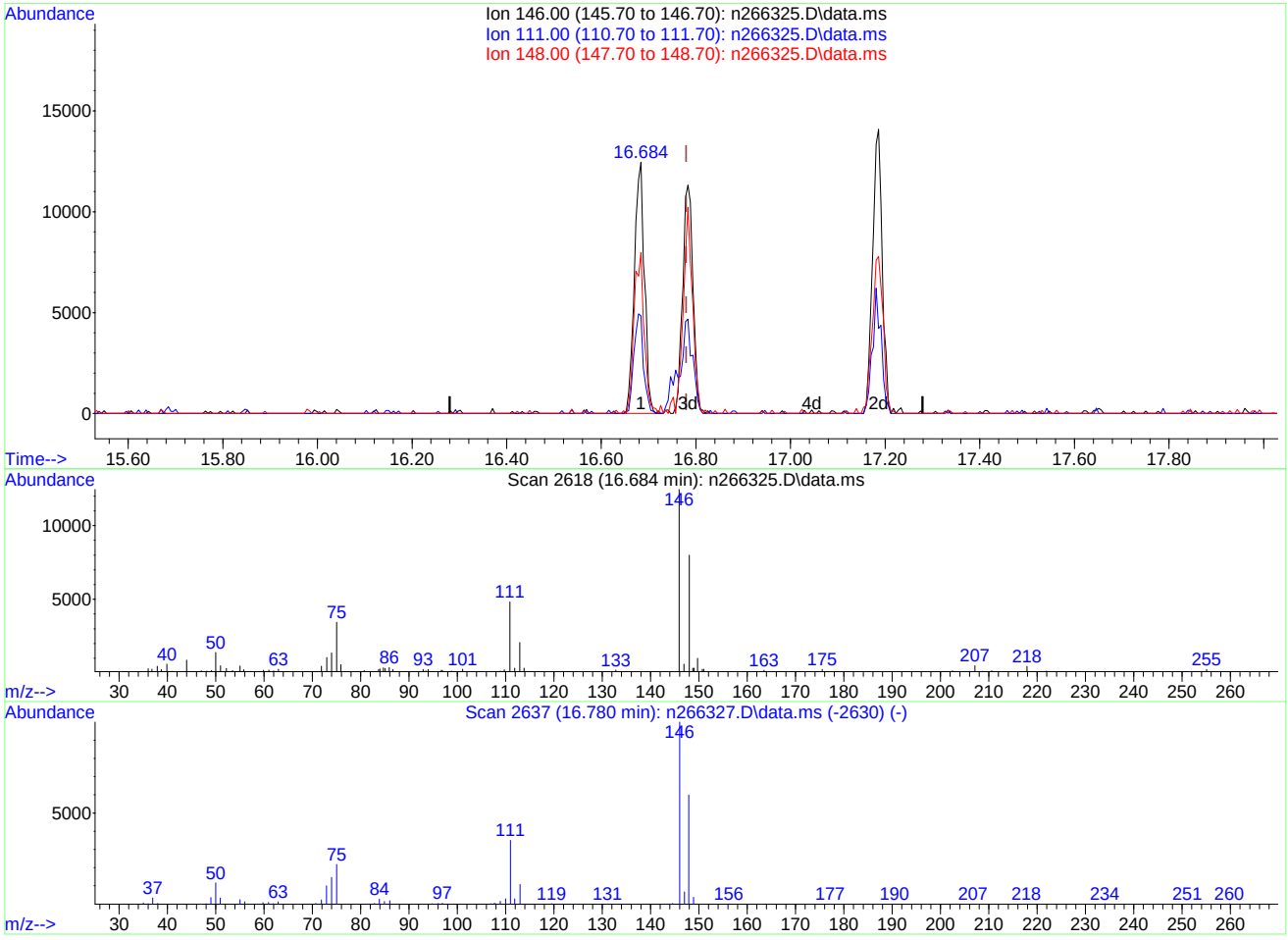
response 506

Ion	Exp%	Act%
57.00	100	100
41.00	78.30	80.44
69.00	82.10	54.82
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266325.D
Acq On : 30 Nov 2017 9:08 pm
Operator : CHELSEAS
Sample : ic11221-2
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 01 15:26:50 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:23:17 2017
Response via : Initial Calibration



TIC: n266325.D\data.ms

(111) 1,4-dichlorobenzene (M)

16.684min (-0.096) 1.92ug/L

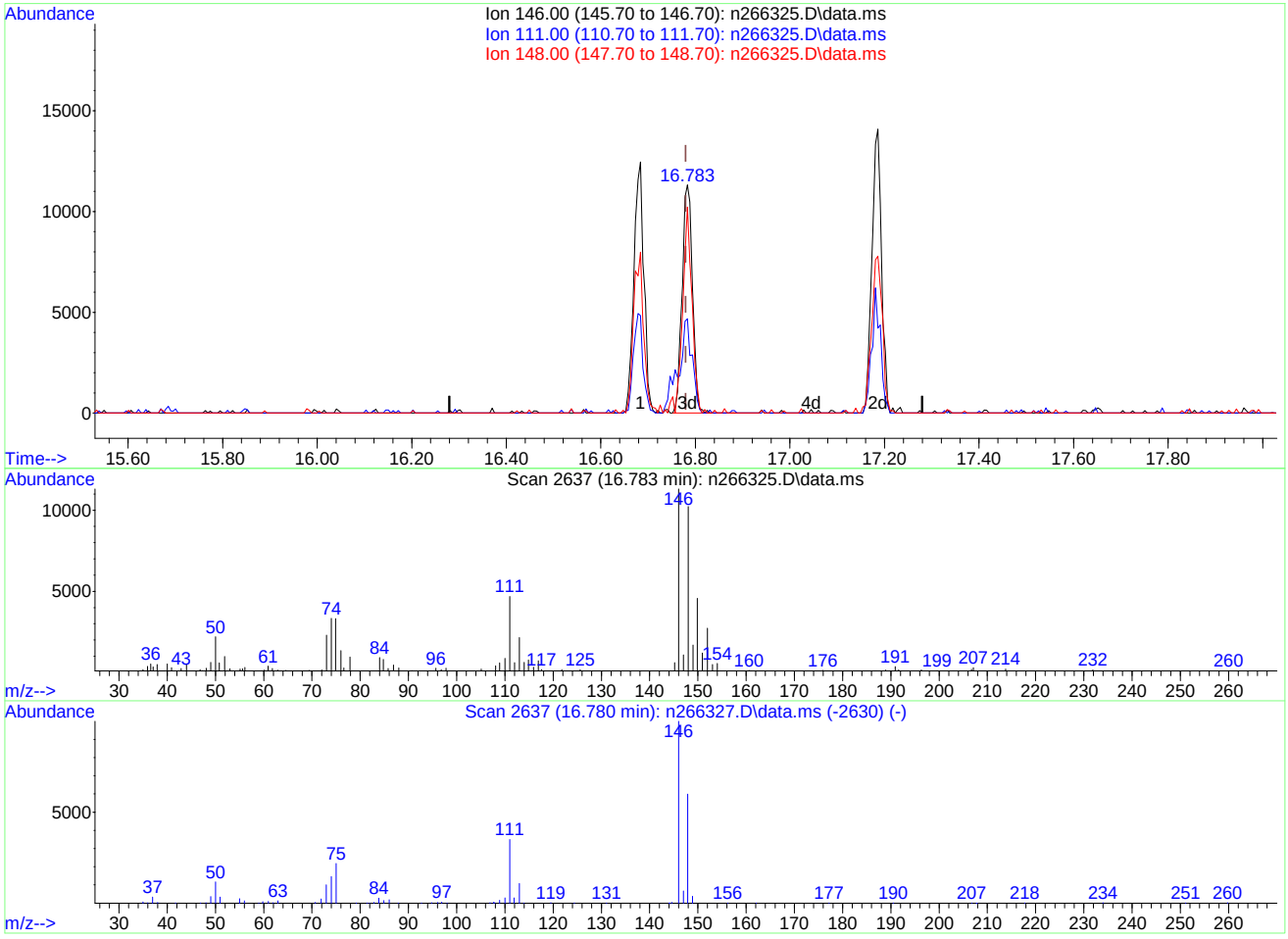
response 18332

Ion	Exp%	Act%
146.00	100	100
111.00	35.30	38.78
148.00	59.90	66.76
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266325.D
Acq On : 30 Nov 2017 9:08 pm
Operator : CHELSEAS
Sample : ic11221-2
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 01 15:26:50 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:23:17 2017
Response via : Initial Calibration



TIC: n266325.D\data.ms

(111) 1,4-dichlorobenzene (M)

16.783min (+0.004) 1.81ug/L m

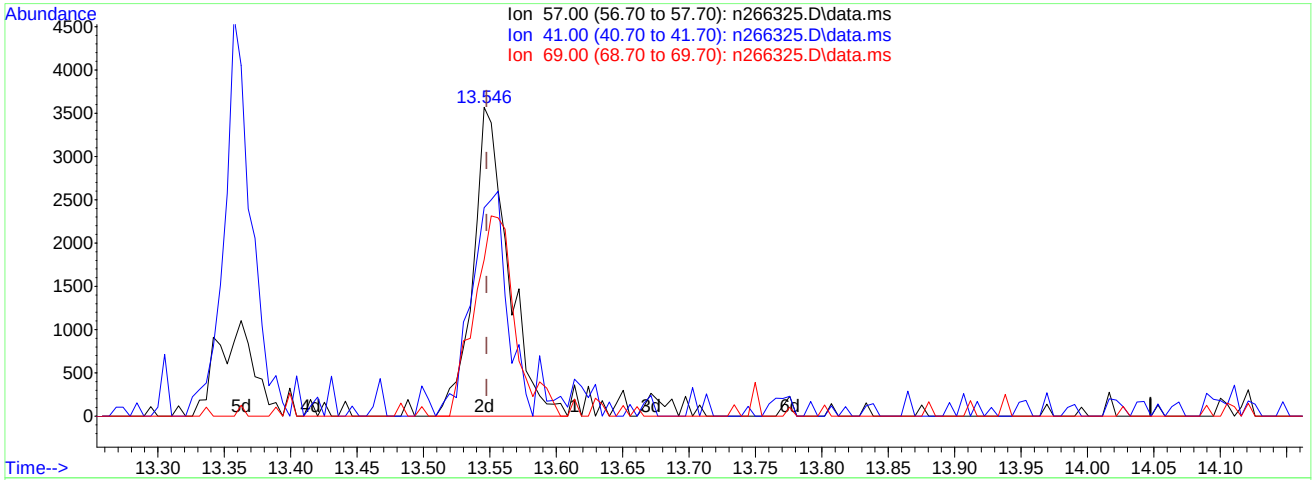
response 17332

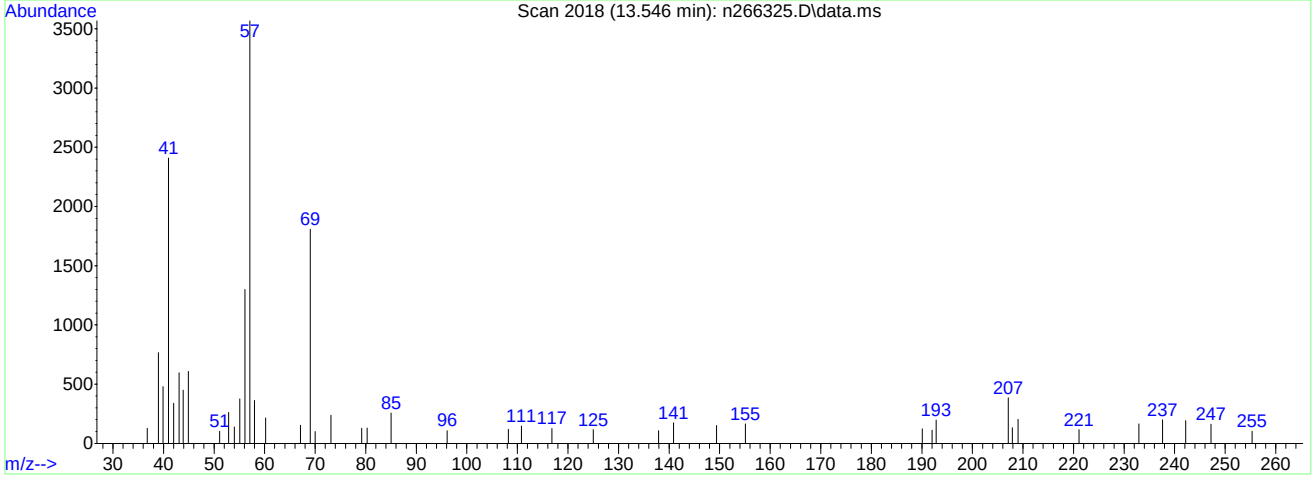
Ion	Exp%	Act%
146.00	100	100
111.00	35.30	41.35
148.00	59.90	90.30#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266325.D
Acq On : 30 Nov 2017 9:08 pm
Operator : CHELSEAS
Sample : ic11221-2
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 01 15:57:00 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration





TIC: n266325.D\data.ms

(84) 3,3-dimethyl-1-butanol

13.546min (-0.002) 19.67ug/L m

response 6578

Ion	Exp%	Act%
57.00	100	100
41.00	78.30	67.52
69.00	82.10	50.67#
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 12/04/17 01:45

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266326.D
Acq On : 30 Nov 2017 9:38 pm
Operator : CHELSEAS
Sample : ic11221-5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 01 15:56:39 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.713	65	134521	300.00	ug/L		0.02
4) pentafluorobenzene	10.056	168	227336	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.987	114	296980	30.00	ug/L		0.00
74) chlorobenzene-d5	14.255	117	262350	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.755	152	200285	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.077	113	107261	29.69	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.97%				
54) 1,2-dichloroethane-d4 (s)	10.495	65	109745	30.09	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 100.30%				
75) toluene-d8	12.650	98	344032	29.88	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.60%				
97) 4-bromofluorobenzene (s)	15.505	95	139612	30.90	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.00%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.875	59	10917	27.05	ug/L		88
3) 1,4-dioxane	11.640	88	3952	111.86	ug/L	#	56
5) freon 143a	3.675	69	35524	4.80	ug/L		85
6) freon 142b	4.261	65	31864	4.84	ug/L		98
7) chlorodifluoromethane	4.020	51	24085	4.68	ug/L		94
8) dichlorodifluoromethane	3.999	85	37717	4.45	ug/L		97
9) chloromethane	4.318	50	26907	4.62	ug/L		88
10) vinyl chloride	4.606	62	34502	4.43	ug/L		90
12) bromomethane	5.343	94	22502	4.76	ug/L		91
13) chloroethane	5.547	64	19967	4.84	ug/L		95
14) trichlorofluoromethane	6.060	101	39781	4.43	ug/L		98
16) freon 141b	6.546	81	32980	5.39	ug/L		90
17) ethyl ether	6.510	59	10800	4.73	ug/L		83
18) acrolein	6.776	56	2607	3.97	ug/L		68
19) 1,1-dichloroethene	6.965	96	16661	4.46	ug/L		90
20) acetone	6.991	58	7764	21.85	ug/L	#	44
21) freon 113	6.970	101	19195	4.48	ug/L		80
23) iodomethane	7.221	142	30083	4.56	ug/L		79
24) carbon disulfide	7.362	76	56327	4.67	ug/L		95
25) methylene chloride	7.733	84	17285	4.74	ug/L		97
26) methyl acetate	7.493	43	9487	4.64	ug/L		89
27) methyl tert butyl ether	8.126	73	101672	9.05	ug/L		96
28) trans-1,2-dichloroethene	8.141	96	16940	5.17	ug/L		86
29) acrylonitrile	8.084	53	5808	4.73	ug/L	#	69
31) di-isopropyl ether	8.753	45	45907	4.71	ug/L		87
32) 1,1-dichloroethane	8.753	63	26520	4.85	ug/L		97
33) chloroprene	8.842	53	20570	4.77	ug/L		91
35) ethyl tert-butyl ether	9.224	59	95762	8.82	ug/L		96
36) 2-butanone	9.433	72	5869	17.24	ug/L	#	76
38) 2,2-dichloropropane	9.512	77	29378	4.50	ug/L		98
39) cis-1,2-dichloroethene	9.491	96	17991	5.00	ug/L		96
40) methyl acrylate	9.522	85	1680	4.18	ug/L	#	51
41) propionitrile	9.527	54	19312	49.29	ug/L		91
42) bromochloromethane	9.789	128	7730	4.37	ug/L		78
43) tetrahydrofuran	9.810	71	2065	6.18	ug/L	#	55
44) chloroform	9.883	85	17306	4.69	ug/L		91
45) t-butyl formate	9.904	59	3070	3.59	ug/L	#	59
47) methacrylonitrile	9.710	67	4891	4.59	ug/L		78
48) 1,1,1-trichloroethane	10.124	97	32616	4.82	ug/L		83
49) cyclohexane	10.228	84	35745	5.03	ug/L		89
50) 1,1-dichloropropene	10.296	75	18128	4.49	ug/L		88
51) carbon tetrachloride	10.317	117	29834	4.71	ug/L		96
56) 2,2,4-trimethylpentane	10.647	57	54558	4.20	ug/L		98
57) benzene	10.547	78	56011	4.86	ug/L		96
58) tert-amyl methyl ether	10.641	73	91695	8.94	ug/L		100
59) 1,2-dichloroethane	10.589	62	18775	4.83	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266326.D
Acq On : 30 Nov 2017 9:38 pm
Operator : CHELSEAS
Sample : ic11221-5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 01 15:56:39 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

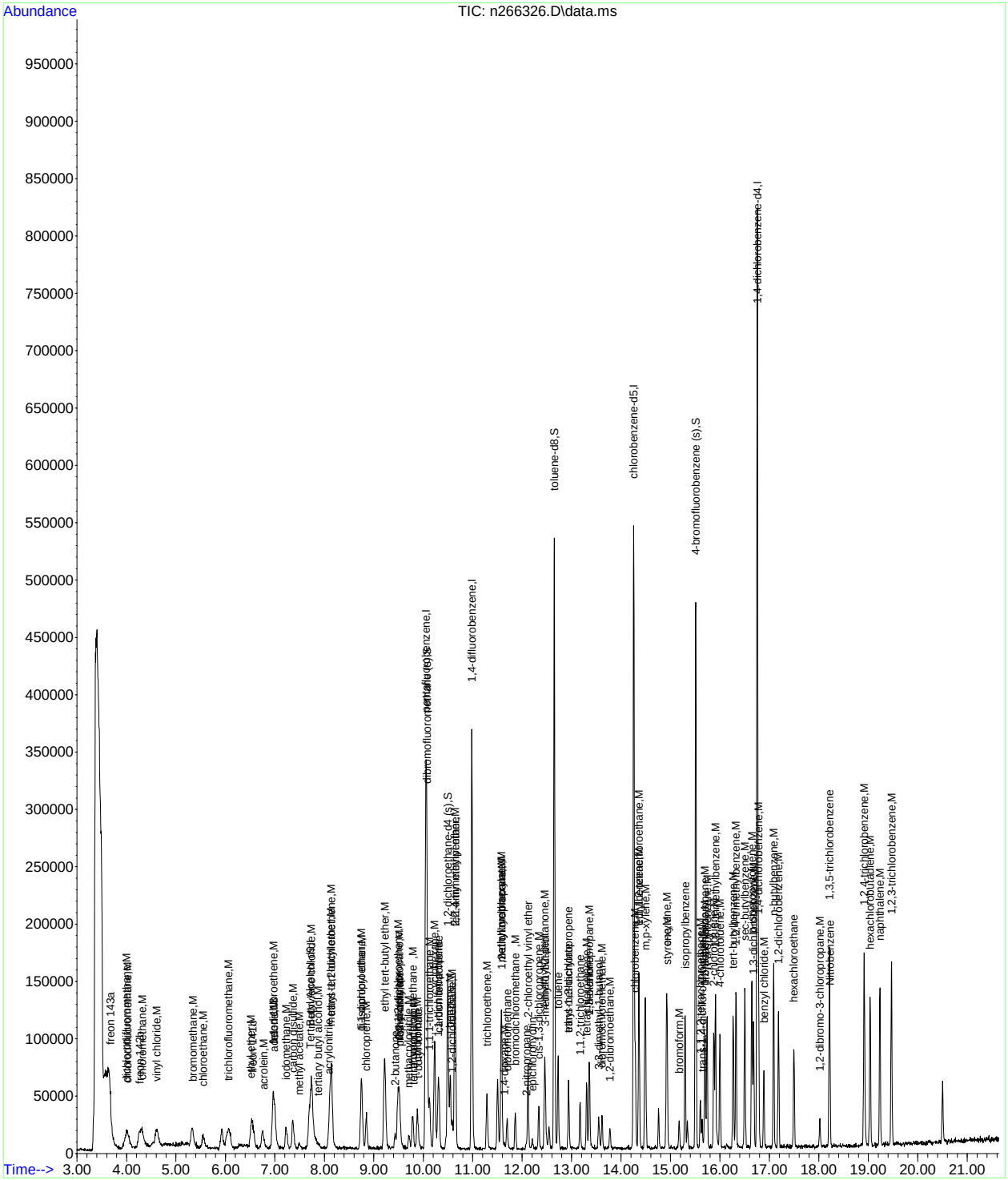
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
62) trichloroethene	11.285	95	14675	5.06 ug/L	#	82
63) methyl methacrylate	11.572	69	13962	4.44 ug/L		87
64) 1,2-dichloropropane	11.588	63	14357	4.98 ug/L		78
65) methylcyclohexane	11.578	83	34003	4.50 ug/L		97
66) dibromomethane	11.693	93	8769	5.14 ug/L	#	68
67) bromodichloromethane	11.860	83	19085	4.91 ug/L		91
68) 2-nitropropane	12.080	41	2456m	2.87 ug/L		
69) 2-chloroethyl vinyl ether	12.122	63	28505	21.94 ug/L		97
70) epichlorohydrin	12.205	57	5964	24.15 ug/L		92
71) cis-1,3-dichloropropene	12.331	75	20092	4.61 ug/L		80
72) 4-methyl-2-pentanone	12.456	58	17204	16.87 ug/L		97
73) 3-methyl-1-butanol	12.472	55	11928	82.36 ug/L		95
76) toluene	12.728	92	32273	4.75 ug/L		88
77) ethyl methacrylate	12.937	69	13077	4.38 ug/L		93
78) trans-1,3-dichloropropene	12.937	75	17805	4.67 ug/L		93
79) 1,1,2-trichloroethane	13.173	83	8595	4.52 ug/L	#	72
80) tetrachloroethene	13.304	164	13132	4.93 ug/L		88
81) 2-hexanone	13.356	58	15791	17.46 ug/L		99
82) 1,3-dichloropropane	13.356	76	19336	5.27 ug/L		84
84) 3,3-dimethyl-1-butanol	13.549	57	13244	39.53 ug/L		88
85) dibromochloromethane	13.617	129	12766	4.34 ug/L		96
86) 1,2-dibromoethane	13.780	107	11251	4.66 ug/L		85
87) chlorobenzene	14.287	112	36936	4.80 ug/L		93
88) 1,1,1,2-tetrachloroethane	14.365	131	21010	5.37 ug/L		97
89) ethylbenzene	14.355	91	61006	4.63 ug/L		100
90) m,p-xylene	14.496	106	51451	9.60 ug/L		88
91) o-xylene	14.920	106	26431	4.59 ug/L		95
92) styrene	14.935	104	38702	4.52 ug/L		94
94) bromoform	15.176	173	10011	4.48 ug/L		97
95) isopropylbenzene	15.296	105	74229	4.62 ug/L		97
98) bromobenzene	15.699	156	20267	4.92 ug/L		95
99) 1,1,2,2-tetrachloroethane	15.605	83	17353	4.81 ug/L		88
100) trans-1,4-dichloro-2-b...	15.641	53	4217	4.90 ug/L	#	85
101) 1,2,3-trichloropropane	15.694	110	6381	5.93 ug/L		95
102) n-propylbenzene	15.741	120	20087	4.64 ug/L		89
103) 2-chlorotoluene	15.877	126	19781	4.85 ug/L		91
104) 4-chlorotoluene	15.997	126	19182	5.23 ug/L		96
105) 1,3,5-trimethylbenzene	15.908	105	65564	4.31 ug/L		90
106) tert-butylbenzene	16.269	134	14558	4.21 ug/L		91
107) 1,2,4-trimethylbenzene	16.321	105	72834	4.73 ug/L		98
108) sec-butylbenzene	16.499	105	92224	4.58 ug/L		99
109) 1,3-dichlorobenzene	16.677	146	42886	4.93 ug/L		99
110) p-isopropyltoluene	16.646	119	80913	4.53 ug/L		94
111) 1,4-dichlorobenzene	16.782	146	44355	4.85 ug/L		87
112) 1,2-dichlorobenzene	17.184	146	47026	4.91 ug/L		88
113) benzyl chloride	16.886	91	42781	4.85 ug/L		94
115) n-butylbenzene	17.085	92	43399	4.73 ug/L		95
116) hexachloroethane	17.498	201	16819	4.35 ug/L		93
117) 1,2-dibromo-3-chloropr...	18.016	157	7096	5.02 ug/L		89
118) Nitrobenzene	18.230	77	2168	5.04 ug/L	#	83
119) 1,3,5-trichlorobenzene	18.215	180	56087	4.79 ug/L		98
120) 1,2,4-trichlorobenzene	18.916	180	52902	4.73 ug/L		88
121) hexachlorobutadiene	19.036	225	29103	4.67 ug/L		97
122) naphthalene	19.235	128	101092	4.40 ug/L		97
123) 1,2,3-trichlorobenzene	19.470	180	49423	4.49 ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266326.D
Acq On : 30 Nov 2017 9:38 pm
Operator : CHELSEAS
Sample : ic11221-5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 01 15:56:39 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration



Manual Integration Approval Summary

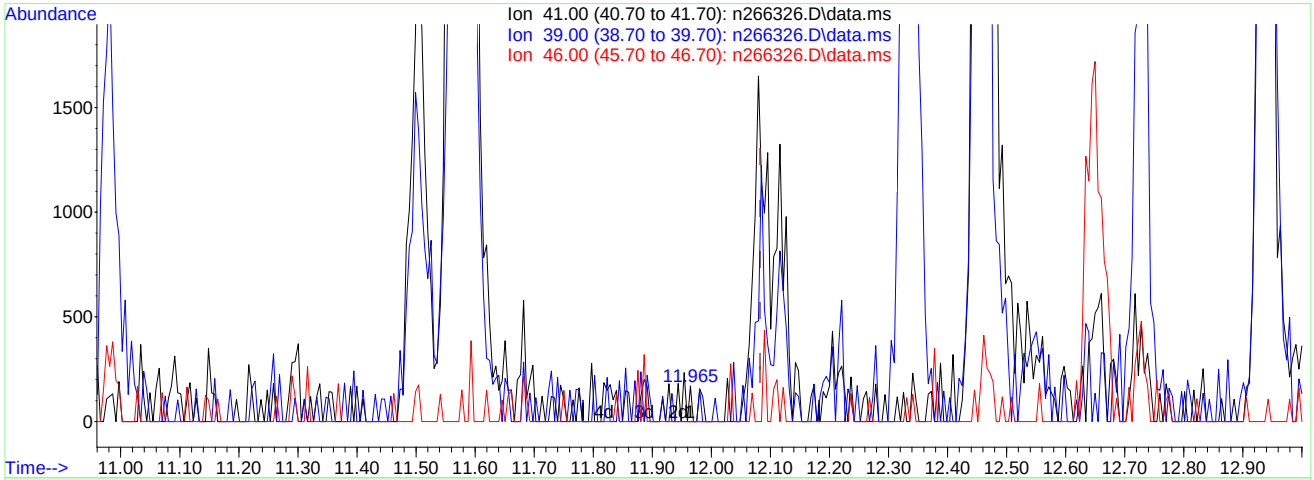
Sample Number:	VN11221-IC11221	**Method:**	EPA 624
Lab FileID:	N266326.D	**Analyst approved:**	12/01/17 16:54 Ying Li
Injection Time:	11/30/17 21:38	**Supervisor approved:**	12/04/17 01:45 Kanya Veerawat

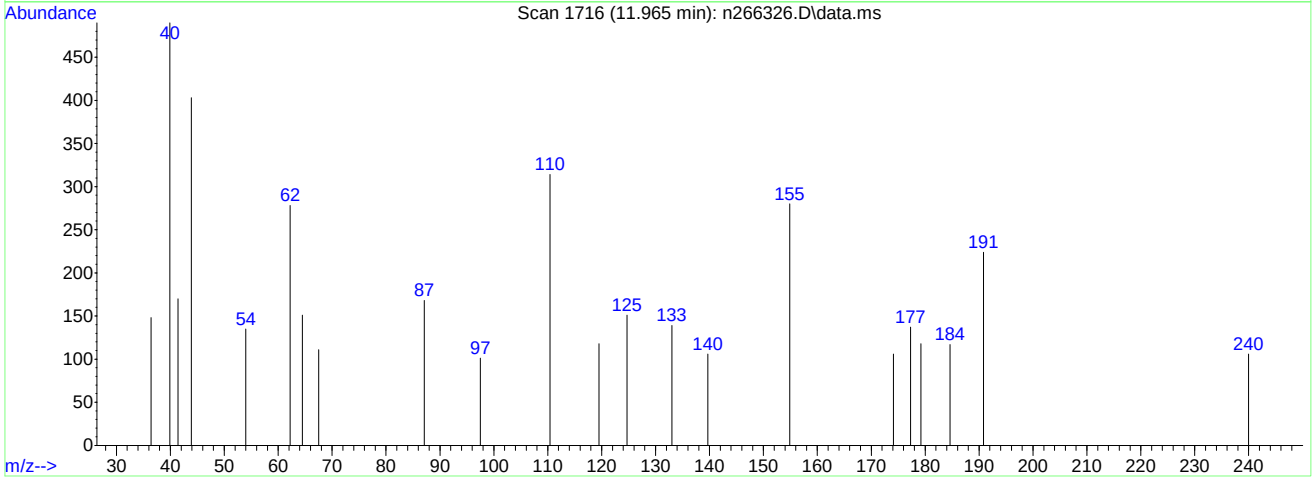
Parameter	CAS	Sig#	R.T. (min.)	Reason
2-Nitropropane	79-46-9		12.08	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266326.D
Acq On : 30 Nov 2017 9:38 pm
Operator : CHELSEAS
Sample : ic11221-5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 01 15:23:37 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:23:17 2017
Response via : Initial Calibration





TIC: n266326.D\data.ms

(68) 2-nitropropane

11.965min (-0.118) 0.24ug/L

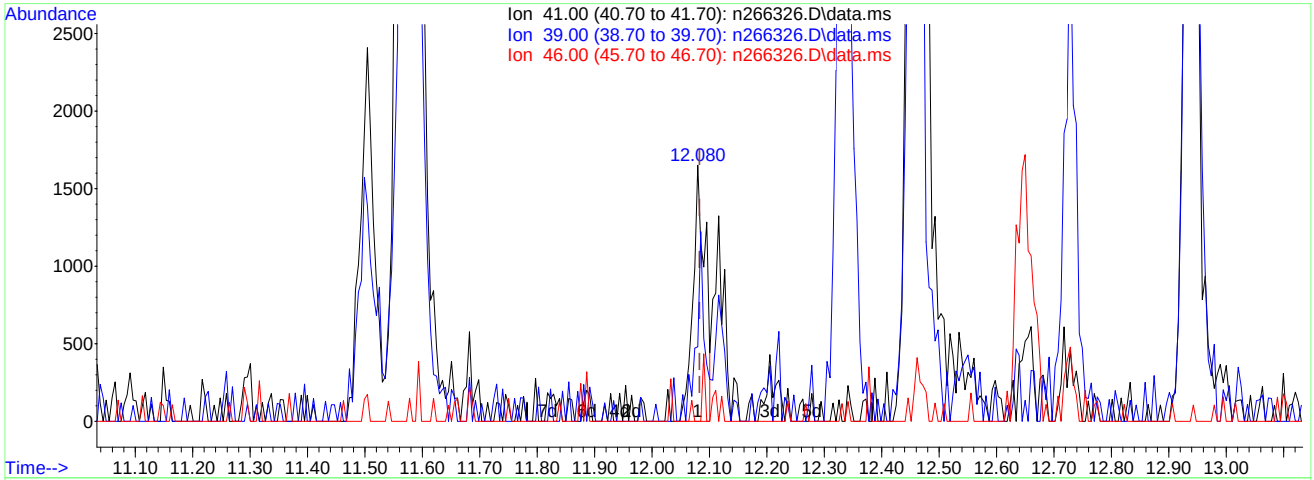
response 140

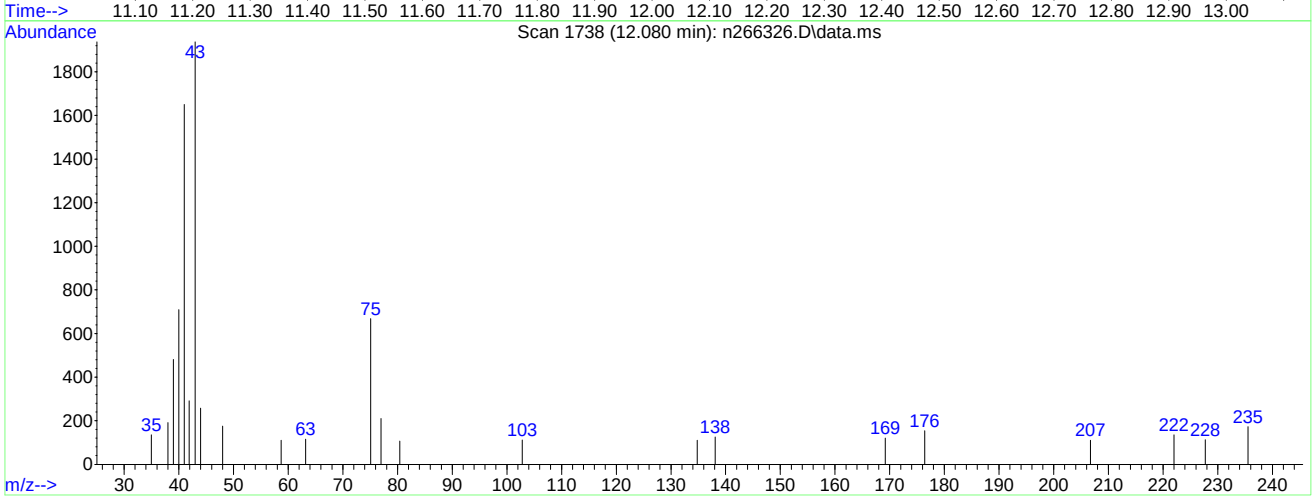
Ion	Exp%	Act%
41.00	100	100
39.00	33.10	0.00#
46.00	5.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266326.D
Acq On : 30 Nov 2017 9:38 pm
Operator : CHELSEAS
Sample : ic11221-5
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 01 15:56:39 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration





TIC: n266326.D\data.ms

(68) 2-nitropropane

12.080min (-0.003) 2.87ug/L m

response 2456

Ion	Exp%	Act%
41.00	100	100
39.00	31.10	29.13
46.00	5.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 12/04/17 01:45

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266327.D
Acq On : 30 Nov 2017 10:07 pm
Operator : CHELSEAS
Sample : icc11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 01 15:50:01 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:47:55 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.695	65	132424	300.00	ug/L	0.00
4) pentafluorobenzene	10.048	168	221089	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.985	114	296682	30.00	ug/L	0.00
74) chlorobenzene-d5	14.254	117	267592	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.753	152	205064	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	105388	30.00	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.00%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	109291	30.00	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 100.00%			
75) toluene-d8	12.648	98	352349	30.00	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.00%			
97) 4-bromofluorobenzene (s)	15.509	95	138802	30.00	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.00%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.831	59	39732	100.00	ug/L	100
3) 1,4-dioxane	11.638	88	17390	500.00	ug/L	100
5) freon 143a	3.668	69	144004	20.00	ug/L	100
6) freon 142b	4.264	65	127953	20.00	ug/L	100
7) chlorodifluoromethane	4.018	51	100112	20.00	ug/L	100
8) dichlorodifluoromethane	4.008	85	164736	20.00	ug/L	100
9) chloromethane	4.332	50	113335	20.00	ug/L	100
10) vinyl chloride	4.630	62	151482	20.00	ug/L	100
12) bromomethane	5.326	94	92023	20.00	ug/L	100
13) chloroethane	5.540	64	80240	20.00	ug/L	100
14) trichlorofluoromethane	6.058	101	174735	20.00	ug/L	100
16) freon 141b	6.544	81	118912	20.00	ug/L	100
17) ethyl ether	6.518	59	44391	20.00	ug/L	100
18) acrolein	6.769	56	12784	20.00	ug/L	100
19) 1,1-dichloroethene	6.963	96	72595	20.00	ug/L	100
20) acetone	6.989	58	27647	80.00	ug/L	100
21) freon 113	6.984	101	83375	20.00	ug/L	100
23) iodomethane	7.229	142	128329	20.00	ug/L	100
24) carbon disulfide	7.360	76	234375	20.00	ug/L	100
25) methylene chloride	7.742	84	70856	20.00	ug/L	100
26) methyl acetate	7.486	43	39766	20.00	ug/L	100
27) methyl tert butyl ether	8.129	73	437205	40.00	ug/L	100
28) trans-1,2-dichloroethene	8.145	96	63710	20.00	ug/L	100
29) acrylonitrile	8.066	53	23907	20.00	ug/L	100
31) di-isopropyl ether	8.751	45	189462	20.00	ug/L	100
32) 1,1-dichloroethane	8.751	63	106355	20.00	ug/L	100
33) chloroprene	8.851	53	83849	20.00	ug/L	100
35) ethyl tert-butyl ether	9.217	59	422187	40.00	ug/L	100
36) 2-butanone	9.426	72	26486	80.00	ug/L	100
38) 2,2-dichloropropane	9.510	77	126893	20.00	ug/L	100
39) cis-1,2-dichloroethene	9.478	96	69934	20.00	ug/L	100
40) methyl acrylate	9.531	85	7813	20.00	ug/L	100
41) propionitrile	9.515	54	76212	200.00	ug/L	100
42) bromochloromethane	9.787	128	34403	20.00	ug/L	100
43) tetrahydrofuran	9.797	71	6502	20.00	ug/L	100
44) chloroform	9.876	85	71696	20.00	ug/L	100
45) t-butyl formate	9.918	59	16616	20.00	ug/L	100
47) methacrylonitrile	9.714	67	20713	20.00	ug/L	100
48) 1,1,1-trichloroethane	10.122	97	131750	20.00	ug/L	100
49) cyclohexane	10.226	84	138273	20.00	ug/L	100
50) 1,1-dichloropropene	10.300	75	78565	20.00	ug/L	100
51) carbon tetrachloride	10.315	117	123201	20.00	ug/L	100
56) 2,2,4-trimethylpentane	10.645	57	259302	20.00	ug/L	100
57) benzene	10.551	78	230322	20.00	ug/L	100
58) tert-amyl methyl ether	10.645	73	409699	40.00	ug/L	100
59) 1,2-dichloroethane	10.592	62	77587	20.00	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266327.D
Acq On : 30 Nov 2017 10:07 pm
Operator : CHELSEAS
Sample : icc11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 01 15:50:01 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:47:55 2017
Response via : Initial Calibration

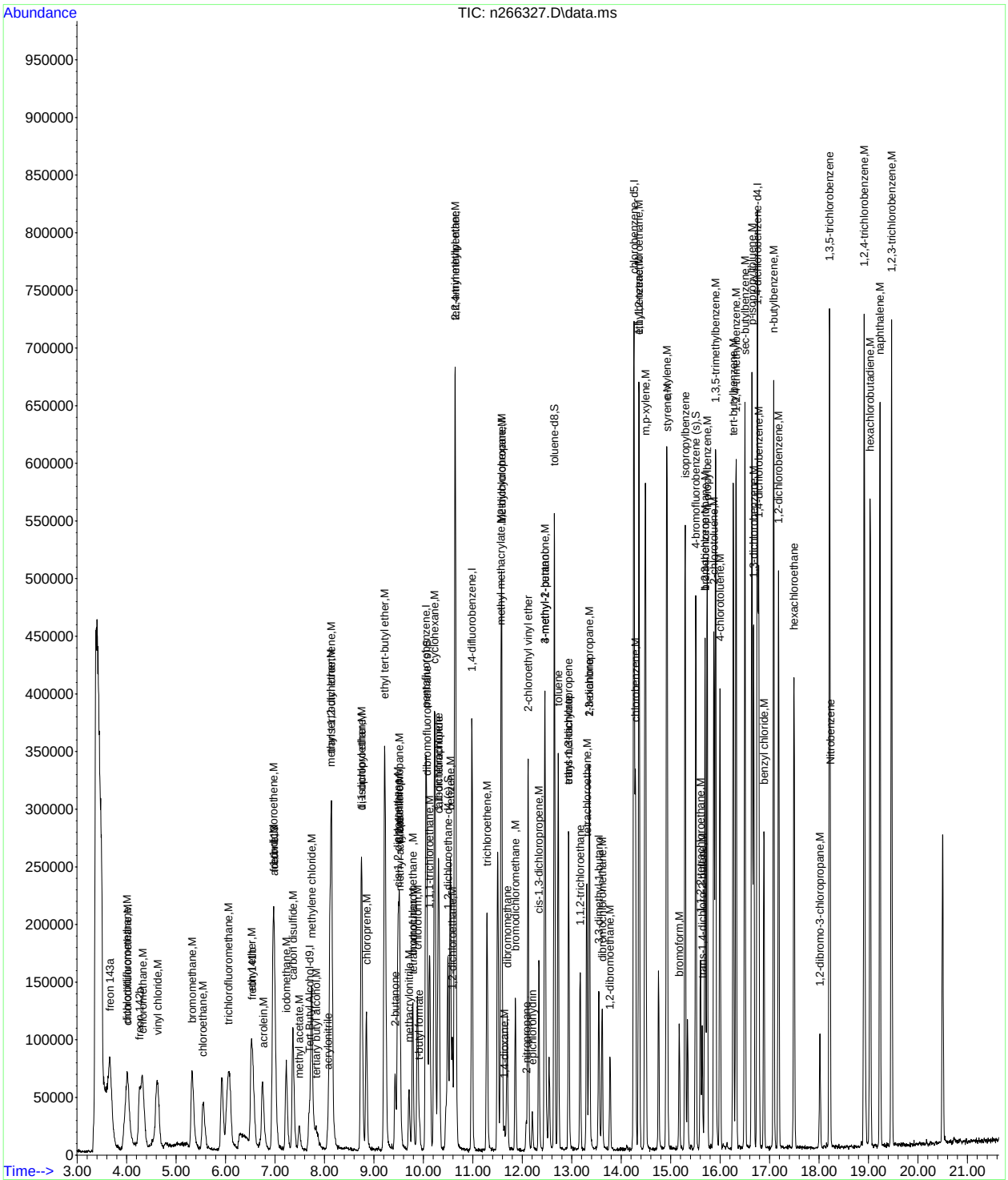
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
62) trichloroethene	11.283	95	57917	20.00	ug/L	100
63) methyl methacrylate	11.565	69	62855	20.00	ug/L	100
64) 1,2-dichloropropane	11.586	63	57642	20.00	ug/L	100
65) methylcyclohexane	11.576	83	150861	20.00	ug/L	100
66) dibromomethane	11.696	93	34076	20.00	ug/L	100
67) bromodichloromethane	11.863	83	77686	20.00	ug/L	100
68) 2-nitropropane	12.083	41	11475m	13.44	ug/L	
69) 2-chloroethyl vinyl ether	12.120	63	129786	100.00	ug/L	100
70) epichlorohydrin	12.203	57	24675	100.00	ug/L	100
71) cis-1,3-dichloropropene	12.334	75	87005	20.00	ug/L	100
72) 4-methyl-2-pentanone	12.454	58	81503	80.00	ug/L	100
73) 3-methyl-1-butanol	12.465	55	57872	400.00	ug/L	100
76) toluene	12.726	92	138673	20.00	ug/L	100
77) ethyl methacrylate	12.936	69	60947	20.00	ug/L	100
78) trans-1,3-dichloropropene	12.941	75	77823	20.00	ug/L	100
79) 1,1,2-trichloroethane	13.171	83	38818	20.00	ug/L	100
80) tetrachloroethene	13.302	164	54382	20.00	ug/L	100
81) 2-hexanone	13.354	58	73818	80.00	ug/L	100
82) 1,3-dichloropropane	13.359	76	74820	20.00	ug/L	100
84) 3,3-dimethyl-1-butanol	13.547	57	68344	200.00	ug/L	100
85) dibromochloromethane	13.615	129	59945	20.00	ug/L	100
86) 1,2-dibromoethane	13.772	107	49284	20.00	ug/L	100
87) chlorobenzene	14.290	112	157062	20.00	ug/L	100
88) 1,1,1,2-tetrachloroethane	14.363	131	79812	20.00	ug/L	100
89) ethylbenzene	14.358	91	268800	20.00	ug/L	100
90) m,p-xylene	14.489	106	218737	40.00	ug/L	100
91) o-xylene	14.918	106	117377	20.00	ug/L	100
92) styrene	14.933	104	174529	20.00	ug/L	100
94) bromoform	15.174	173	45578	20.00	ug/L	100
95) isopropylbenzene	15.294	105	327815	20.00	ug/L	100
98) bromobenzene	15.697	156	84437	20.00	ug/L	100
99) 1,1,2,2-tetrachloroethane	15.603	83	73924	20.00	ug/L	100
100) trans-1,4-dichloro-2-b...	15.639	53	17631	20.00	ug/L	100
101) 1,2,3-trichloropropane	15.692	110	22039	20.00	ug/L	100
102) n-propylbenzene	15.739	120	88638	20.00	ug/L	100
103) 2-chlorotoluene	15.875	126	83499	20.00	ug/L	100
104) 4-chlorotoluene	16.000	126	75103	20.00	ug/L	100
105) 1,3,5-trimethylbenzene	15.911	105	311671	20.00	ug/L	100
106) tert-butylbenzene	16.272	134	70731	20.00	ug/L	100
107) 1,2,4-trimethylbenzene	16.325	105	315114	20.00	ug/L	100
108) sec-butylbenzene	16.502	105	412480	20.00	ug/L	100
109) 1,3-dichlorobenzene	16.680	146	178214	20.00	ug/L	100
110) p-isopropyltoluene	16.644	119	365745	20.00	ug/L	100
111) 1,4-dichlorobenzene	16.780	146	187213	20.00	ug/L	100
112) 1,2-dichlorobenzene	17.182	146	196180	20.00	ug/L	100
113) benzyl chloride	16.884	91	180772	20.00	ug/L	100
115) n-butylbenzene	17.083	92	187910	20.00	ug/L	100
116) hexachloroethane	17.496	201	79134	20.00	ug/L	100
117) 1,2-dibromo-3-chloropr...	18.019	157	28960	20.00	ug/L	100
118) Nitrobenzene	18.234	77	8812	20.00	ug/L	100
119) 1,3,5-trichlorobenzene	18.213	180	239952	20.00	ug/L	100
120) 1,2,4-trichlorobenzene	18.914	180	229170	20.00	ug/L	100
121) hexachlorobutadiene	19.034	225	127562	20.00	ug/L	100
122) naphthalene	19.233	128	470264	20.00	ug/L	100
123) 1,2,3-trichlorobenzene	19.468	180	225187	20.00	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266327.D
Acq On : 30 Nov 2017 10:07 pm
Operator : CHELSEAS
Sample : icc11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 01 15:50:01 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:47:55 2017
Response via : Initial Calibration



Manual Integration Approval Summary

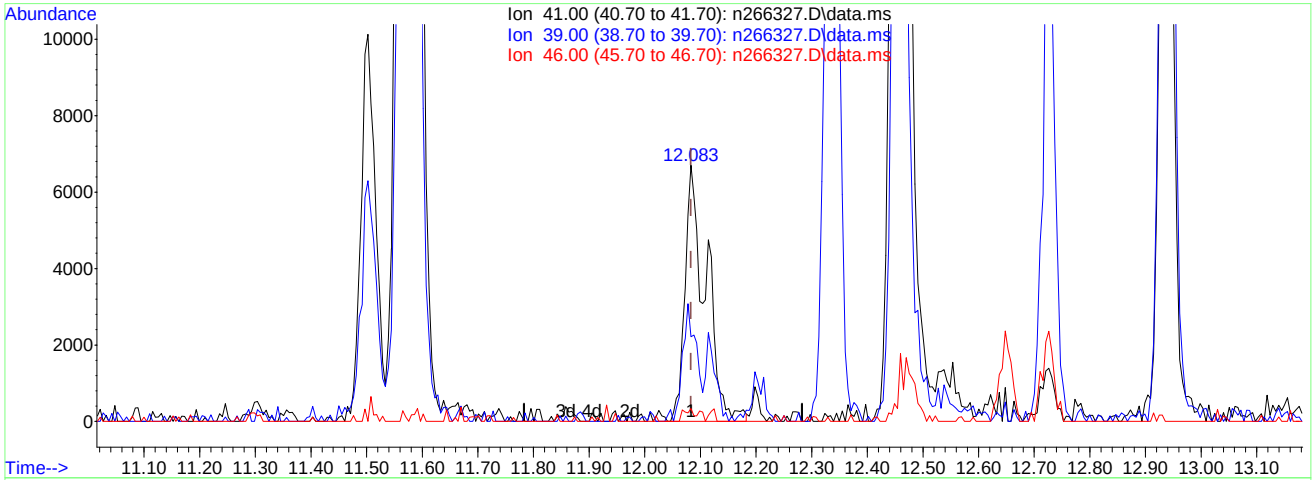
Sample Number:	VN11221-ICC11221	**Method:**	EPA 624
Lab FileID:	N266327.D	**Analyst approved:**	12/01/17 16:54 Ying Li
Injection Time:	11/30/17 22:07	**Supervisor approved:**	12/04/17 01:45 Kanya Veerawat

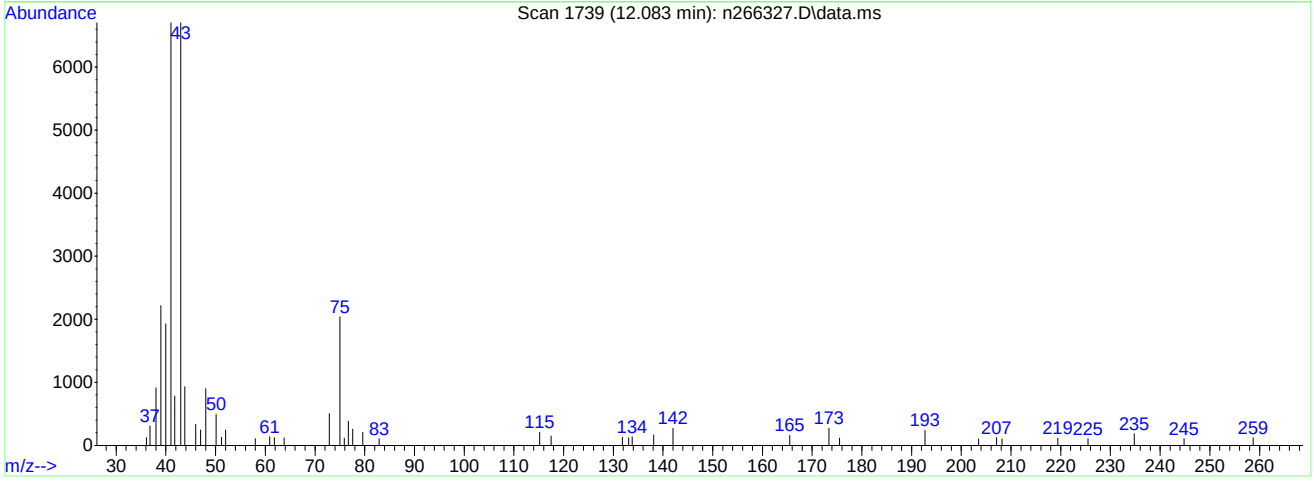
Parameter	CAS	Sig#	R.T. (min.)	Reason
2-Nitropropane	79-46-9		12.08	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266327.D
Acq On : 30 Nov 2017 10:07 pm
Operator : CHELSEAS
Sample : icc11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 01 15:12:38 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:10:07 2017
Response via : Initial Calibration





TIC: n266327.D\data.ms

(68) 2-nitropropane

12.083min (0.000) 33.13ug/L

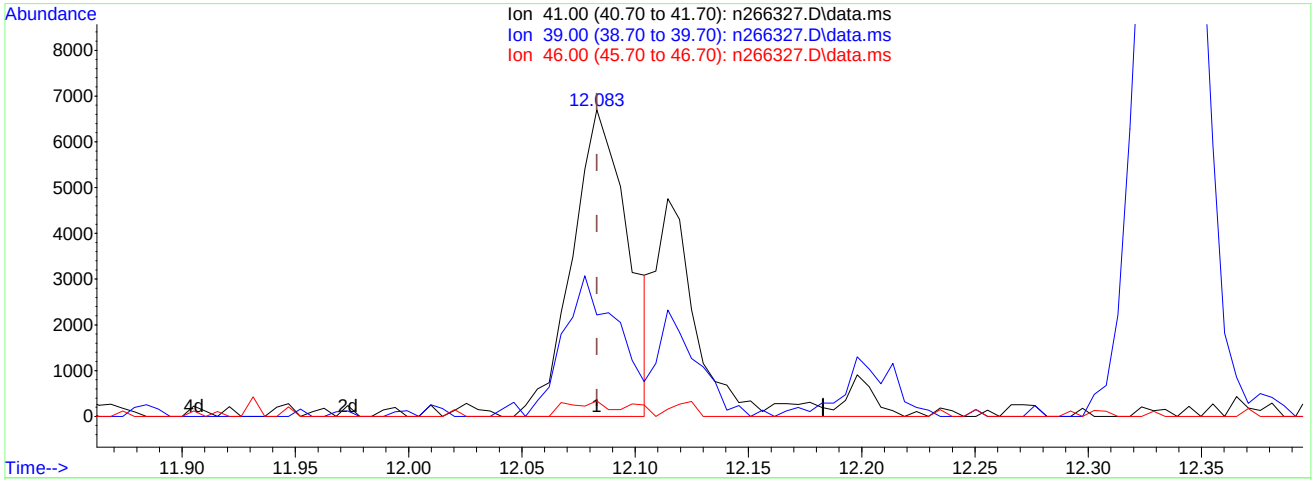
response 17728

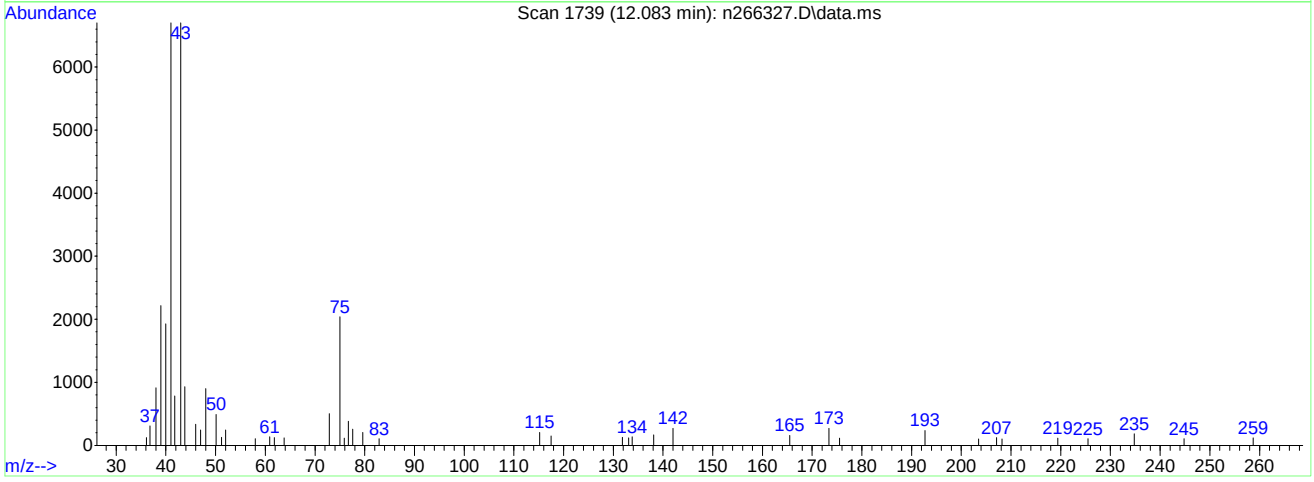
Ion	Exp%	Act%
41.00	100	100
39.00	33.10	30.52
46.00	5.00	5.01
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266327.D
Acq On : 30 Nov 2017 10:07 pm
Operator : CHELSEAS
Sample : icc11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 01 15:48:34 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:47:55 2017
Response via : Initial Calibration





TIC: n266327.D\data.ms

(68) 2-nitropropane

12.083min (0.000) 13.44ug/L m

response 11475

Ion	Exp%	Act%
41.00	100	100
39.00	31.10	33.08
46.00	5.00	5.01
0.00	0.00	0.00

N266328.D

Manual Integrations APPROVED (compounds with "m" flag)

Kanya Veerawat 12/04/17 01:45

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266328.D
Acq On : 30 Nov 2017 10:36 pm
Operator : CHELSEAS
Sample : ic11221-50
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 01 15:53:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.722	65	141139	300.00	ug/L		0.03
4) pentafluorobenzene	10.055	168	248191	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.986	114	328251	30.00	ug/L		0.00
74) chlorobenzene-d5	14.255	117	290202	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.755	152	217275	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.076	113	115243	29.22	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.40%				
54) 1,2-dichloroethane-d4 (s)	10.494	65	121793	30.22	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 100.73%				
75) toluene-d8	12.649	98	386233	30.32	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.07%				
97) 4-bromofluorobenzene (s)	15.510	95	148569	30.31	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.03%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.843	59	123330	291.24	ug/L		92
3) 1,4-dioxane	11.634	88	54710	1475.90	ug/L		93
5) freon 143a	3.679	69	368520	45.59	ug/L		95
6) freon 142b	4.276	65	350312	48.78	ug/L		95
7) chlorodifluoromethane	4.025	51	270386	48.12	ug/L		96
8) dichlorodifluoromethane	3.998	85	421658	45.60	ug/L		98
9) chloromethane	4.333	50	305564	48.03	ug/L		88
10) vinyl chloride	4.626	62	394133	46.35	ug/L		96
12) bromomethane	5.327	94	250138	48.43	ug/L		92
13) chloroethane	5.547	64	208907	46.38	ug/L		95
14) trichlorofluoromethane	6.054	101	436898	44.55	ug/L		98
16) freon 141b	6.556	81	329363	49.35	ug/L		94
17) ethyl ether	6.514	59	120191	48.24	ug/L		88
18) acrolein	6.770	56	34239	47.72	ug/L		73
19) 1,1-dichloroethene	6.964	96	184687	45.33	ug/L		98
20) acetone	6.990	58	82918	213.73	ug/L	#	81
21) freon 113	6.974	101	226091	48.31	ug/L		84
23) iodomethane	7.225	142	343273	47.66	ug/L		96
24) carbon disulfide	7.361	76	622439	47.31	ug/L		98
25) methylene chloride	7.738	84	187238	47.08	ug/L		93
26) methyl acetate	7.482	43	105258	47.16	ug/L		83
27) methyl tert butyl ether	8.125	73	1165471	94.99	ug/L		97
28) trans-1,2-dichloroethene	8.151	96	174559	48.81	ug/L		96
29) acrylonitrile	8.062	53	66304	49.41	ug/L		91
31) di-isopropyl ether	8.753	45	530386	49.87	ug/L		94
32) 1,1-dichloroethane	8.753	63	295431	49.49	ug/L		97
33) chloroprene	8.852	53	231531	49.20	ug/L		92
35) ethyl tert-butyl ether	9.223	59	1137556	96.01	ug/L		97
36) 2-butanone	9.427	72	72055	193.87	ug/L	#	81
38) 2,2-dichloropropane	9.511	77	341666	47.97	ug/L		94
39) cis-1,2-dichloroethene	9.485	96	196588	50.08	ug/L		98
40) methyl acrylate	9.532	85	22474	51.25	ug/L	#	61
41) propionitrile	9.516	54	224221	524.16	ug/L		87
42) bromochloromethane	9.783	128	100806	52.20	ug/L		85
43) tetrahydrofuran	9.804	71	18370	50.34	ug/L	#	59
44) chloroform	9.882	85	198063	49.22	ug/L		99
45) t-butyl formate	9.914	59	52969	56.79	ug/L		91
47) methacrylonitrile	9.710	67	56921	48.96	ug/L		82
48) 1,1,1-trichloroethane	10.128	97	369410	49.95	ug/L		93
49) cyclohexane	10.233	84	361501	46.58	ug/L		82
50) 1,1-dichloropropene	10.301	75	221365	50.20	ug/L		95
51) carbon tetrachloride	10.316	117	340810	49.28	ug/L		98
56) 2,2,4-trimethylpentane	10.646	57	734855	51.23	ug/L		96
57) benzene	10.547	78	629348	49.39	ug/L		91
58) tert-amyl methyl ether	10.641	73	1121183	98.94	ug/L		100
59) 1,2-dichloroethane	10.583	62	204294	47.60	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266328.D
Acq On : 30 Nov 2017 10:36 pm
Operator : CHELSEAS
Sample : ic11221-50
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 01 15:53:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration

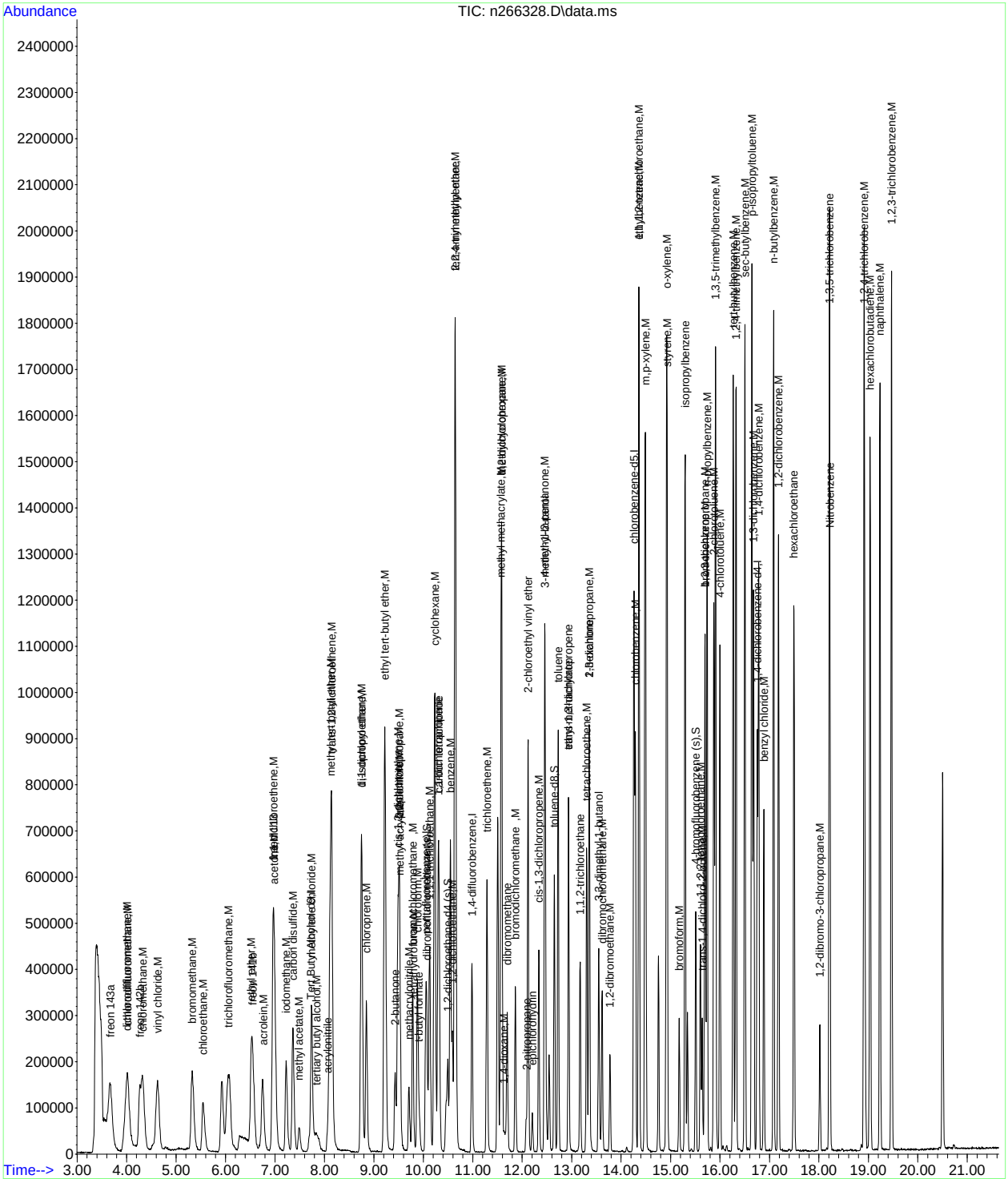
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
62) trichloroethene	11.284	95	162699	50.78 ug/L		97
63) methyl methacrylate	11.566	69	171499	49.32 ug/L		92
64) 1,2-dichloropropane	11.587	63	160412	50.31 ug/L		98
65) methylcyclohexane	11.577	83	404580	48.48 ug/L		95
66) dibromomethane	11.697	93	97640	51.80 ug/L		91
67) bromodichloromethane	11.859	83	218692	50.89 ug/L		89
68) 2-nitropropane	12.084	41	34769m	36.80 ug/L		
69) 2-chloroethyl vinyl ether	12.121	63	360734	251.21 ug/L		99
70) epichlorohydrin	12.205	57	69696	255.29 ug/L		95
71) cis-1,3-dichloropropene	12.335	75	241155	50.10 ug/L		98
72) 4-methyl-2-pentanone	12.456	58	233249	206.93 ug/L		97
73) 3-methyl-1-butanol	12.466	55	173122	1081.51 ug/L		92
76) toluene	12.728	92	382550	50.87 ug/L		98
77) ethyl methacrylate	12.937	69	174428	52.78 ug/L		98
78) trans-1,3-dichloropropene	12.942	75	211507	50.12 ug/L		95
79) 1,1,2-trichloroethane	13.172	83	102271	48.59 ug/L		96
80) tetrachloroethene	13.303	164	147857	50.14 ug/L		93
81) 2-hexanone	13.350	58	205447	205.31 ug/L		98
82) 1,3-dichloropropane	13.360	76	201865	49.76 ug/L		92
84) 3,3-dimethyl-1-butanol	13.549	57	207762	560.62 ug/L		90
85) dibromochloromethane	13.617	129	166371	51.18 ug/L		98
86) 1,2-dibromoethane	13.774	107	130163	48.71 ug/L		98
87) chlorobenzene	14.286	112	420521	49.38 ug/L		98
88) 1,1,1,2-tetrachloroethane	14.365	131	233575	53.97 ug/L		91
89) ethylbenzene	14.359	91	722482	49.57 ug/L		98
90) m,p-xylene	14.490	106	593194	100.02 ug/L		95
91) o-xylene	14.919	106	330032	51.85 ug/L		99
92) styrene	14.935	104	480627	50.79 ug/L		99
94) bromoform	15.175	173	124003	50.17 ug/L		96
95) isopropylbenzene	15.296	105	918527	51.67 ug/L		96
98) bromobenzene	15.698	156	218700	48.89 ug/L		98
99) 1,1,2,2-tetrachloroethane	15.604	83	193000	49.28 ug/L		94
100) trans-1,4-dichloro-2-b...	15.641	53	48178	51.58 ug/L		83
101) 1,2,3-trichloropropane	15.693	110	58892	50.44 ug/L		96
102) n-propylbenzene	15.740	120	252125	53.69 ug/L	#	85
103) 2-chlorotoluene	15.876	126	221159	50.00 ug/L		94
104) 4-chlorotoluene	16.002	126	211106	53.06 ug/L		92
105) 1,3,5-trimethylbenzene	15.907	105	871699	52.79 ug/L		95
106) tert-butylbenzene	16.268	134	203380	54.28 ug/L		99
107) 1,2,4-trimethylbenzene	16.326	105	848701	50.84 ug/L		95
108) sec-butylbenzene	16.504	105	1140515	52.19 ug/L		96
109) 1,3-dichlorobenzene	16.682	146	476543	50.47 ug/L		99
110) p-isopropyltoluene	16.645	119	1013829	52.32 ug/L		97
111) 1,4-dichlorobenzene	16.781	146	490913	49.50 ug/L		93
112) 1,2-dichlorobenzene	17.184	146	520584	50.09 ug/L		97
113) benzyl chloride	16.885	91	481850	50.31 ug/L		99
115) n-butylbenzene	17.084	92	515090	51.74 ug/L		92
116) hexachloroethane	17.497	201	237655	56.69 ug/L		94
117) 1,2-dibromo-3-chloropr...	18.020	157	79554	51.85 ug/L		93
118) Nitrobenzene	18.230	77	25803	55.27 ug/L		98
119) 1,3,5-trichlorobenzene	18.214	180	633573	49.84 ug/L		94
120) 1,2,4-trichlorobenzene	18.915	180	617965	50.90 ug/L		99
121) hexachlorobutadiene	19.035	225	342501	50.68 ug/L		98
122) naphthalene	19.234	128	1217284	48.86 ug/L		95
123) 1,2,3-trichlorobenzene	19.469	180	595187	49.89 ug/L		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266328.D
Acq On : 30 Nov 2017 10:36 pm
Operator : CHELSEAS
Sample : ic11221-50
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 01 15:53:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration



Manual Integration Approval Summary

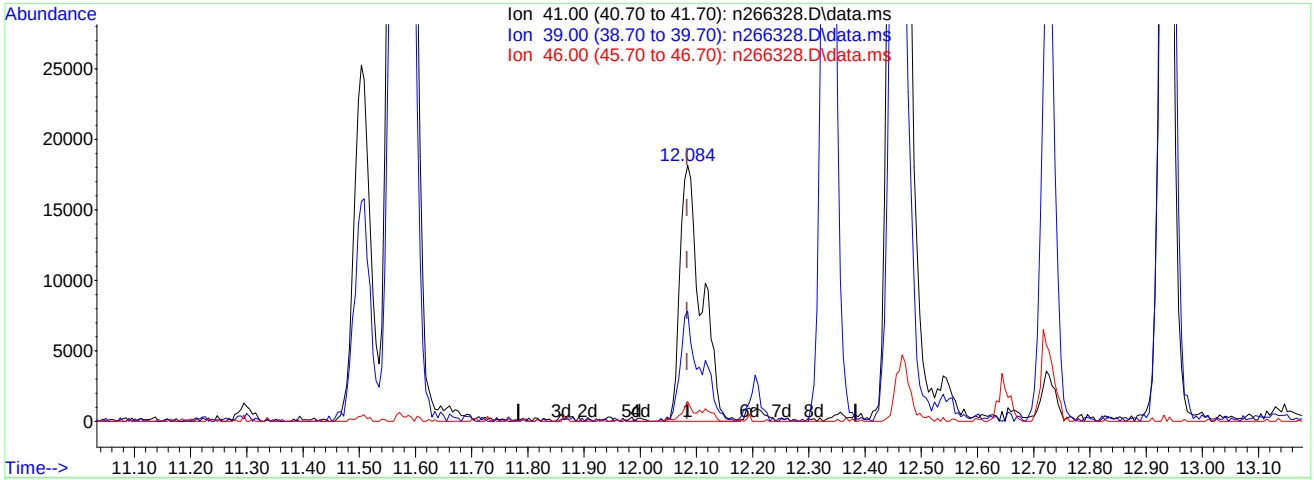
Sample Number: VN11221-IC11221
Lab FileID: N266328.D
Injection Time: 11/30/17 22:36
Method: EPA 624
Analyst approved: 12/01/17 16:54 Ying Li
Supervisor approved: 12/04/17 01:45 Kanya Veerawat

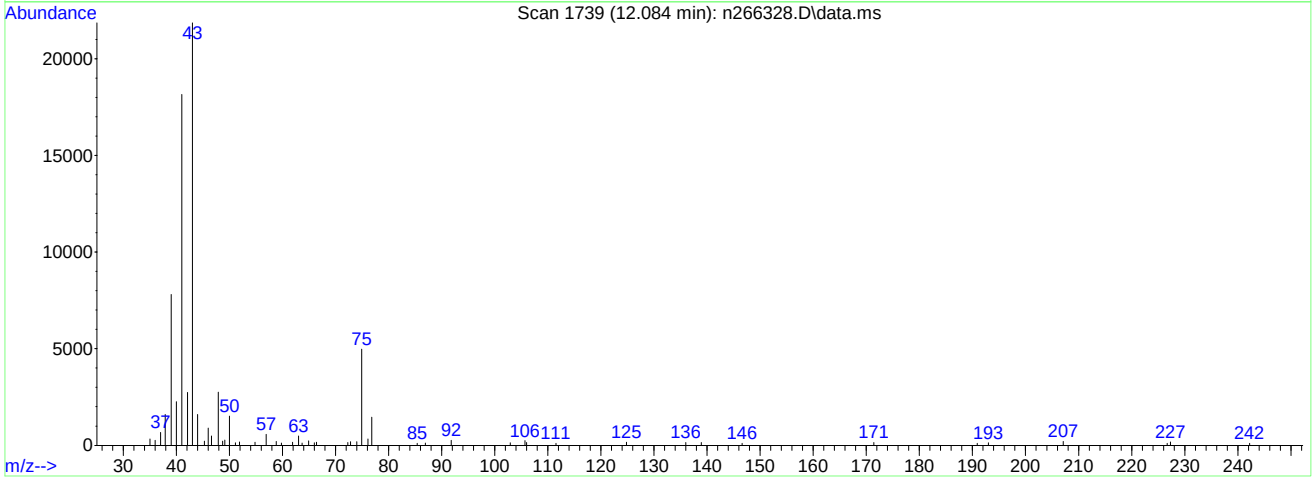
Parameter	CAS	Sig#	R.T. (min.)	Reason
2-Nitropropane	79-46-9		12.08	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266328.D
Acq On : 30 Nov 2017 10:36 pm
Operator : CHELSEAS
Sample : ic11221-50
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 01 15:52:51 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration





TIC: n266328.D\data.ms

(68) 2-nitropropane

12.084min (+0.001) 51.11ug/L

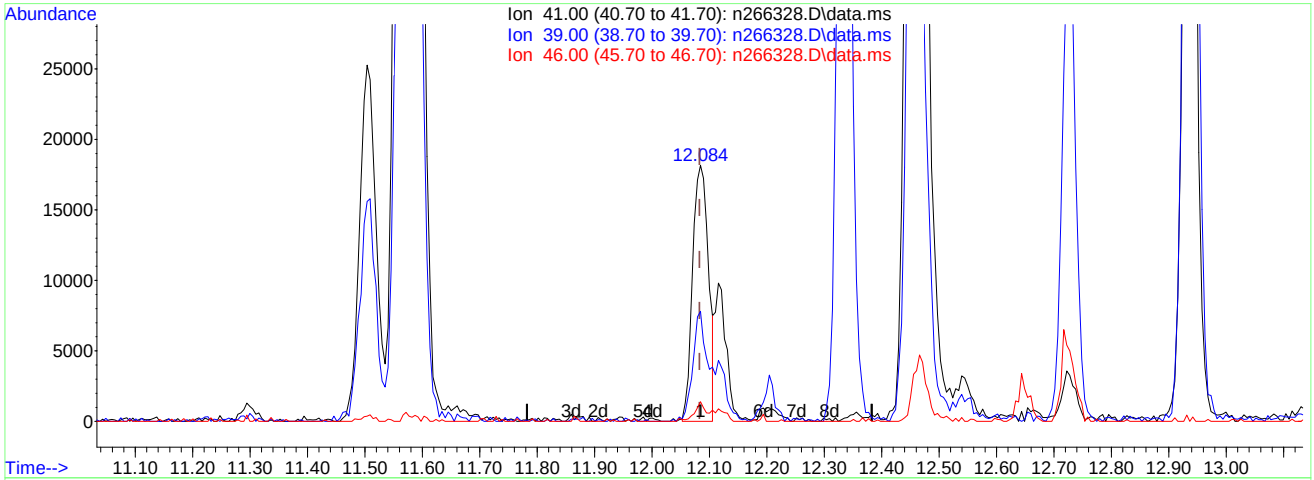
response 48288

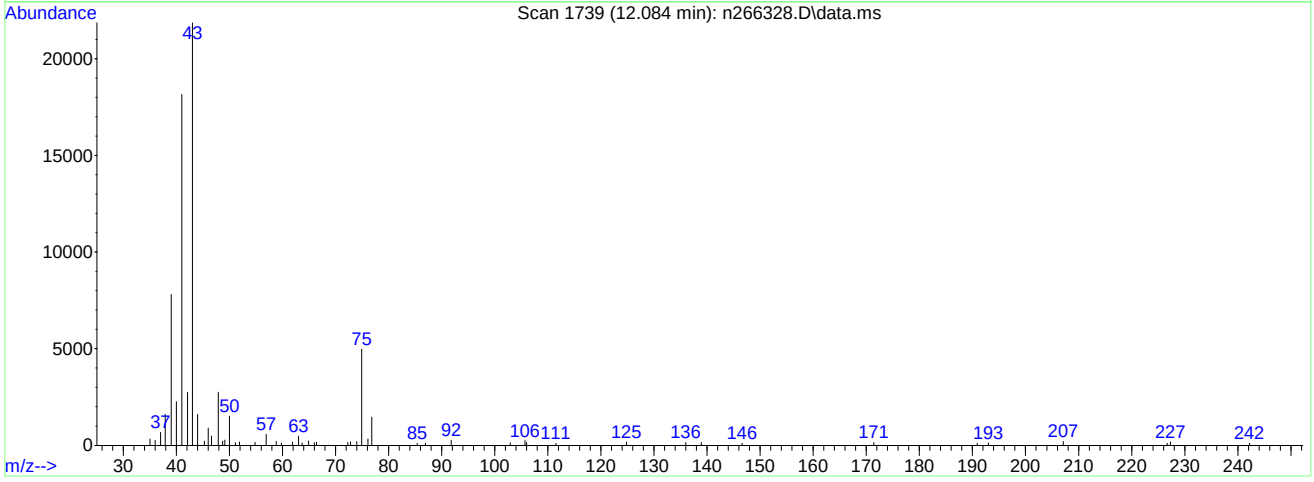
Ion	Exp%	Act%
41.00	100	100
39.00	31.10	42.96
46.00	5.00	7.68
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266328.D
Acq On : 30 Nov 2017 10:36 pm
Operator : CHELSEAS
Sample : ic11221-50
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 01 15:53:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:52:48 2017
Response via : Initial Calibration





TIC: n266328.D\data.ms

(68) 2-nitropropane

12.084min (+0.001) 36.80ug/L m

response 34769

Ion	Exp%	Act%
41.00	100	100
39.00	31.10	42.96
46.00	5.00	4.96
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 12/04/17 01:45

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266329.D
Acq On : 30 Nov 2017 11:06 pm
Operator : CHELSEAS
Sample : ic11221-100
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 01 15:51:51 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:47:55 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.721	65	156594	300.00	ug/L		0.03
4) pentafluorobenzene	10.054	168	261236	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.985	114	361279	30.00	ug/L		0.00
74) chlorobenzene-d5	14.253	117	319564	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.759	152	223761	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.075	113	122983	29.63	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.77%				
54) 1,2-dichloroethane-d4 (s)	10.498	65	131692	29.69	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 98.97%				
75) toluene-d8	12.653	98	426449	30.40	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.33%				
97) 4-bromofluorobenzene (s)	15.509	95	162043	32.10	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 107.00%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.852	59	279673	595.25	ug/L		96
3) 1,4-dioxane	11.638	88	125119	3042.18	ug/L		95
5) freon 143a	3.673	69	741427	87.15	ug/L		97
6) freon 142b	4.290	65	755473	99.94	ug/L		98
7) chlorodifluoromethane	4.023	51	578200	97.76	ug/L		99
8) dichlorodifluoromethane	3.992	85	898471	92.32	ug/L		98
9) chloromethane	4.348	50	679306	101.45	ug/L		92
10) vinyl chloride	4.630	62	878815	98.20	ug/L		98
12) bromomethane	5.331	94	546291	100.48	ug/L		88
13) chloroethane	5.545	64	453416	95.65	ug/L		93
14) trichlorofluoromethane	6.068	101	943469	91.39	ug/L		93
16) freon 141b	6.544	81	690968	98.35	ug/L		85
17) ethyl ether	6.523	59	261465	99.70	ug/L		91
18) acrolein	6.774	56	73270	97.01	ug/L		76
19) 1,1-dichloroethene	6.963	96	378421	88.23	ug/L		98
20) acetone	6.999	58	180423	441.84	ug/L		90
21) freon 113	6.978	101	480809	97.61	ug/L		92
23) iodomethane	7.224	142	728182	96.05	ug/L		96
24) carbon disulfide	7.360	76	1272857	91.92	ug/L		100
25) methylene chloride	7.742	84	395242	94.42	ug/L		96
26) methyl acetate	7.496	43	249504	106.20	ug/L		83
27) methyl tert butyl ether	8.124	73	2437224	188.71	ug/L		96
28) trans-1,2-dichloroethene	8.150	96	371616	98.73	ug/L		96
29) acrylonitrile	8.071	53	149619	105.93	ug/L		95
31) di-isopropyl ether	8.751	45	1131548	101.09	ug/L		94
32) 1,1-dichloroethane	8.751	63	615031	97.88	ug/L		97
33) chloroprene	8.851	53	511597	103.27	ug/L		85
35) ethyl tert-butyl ether	9.222	59	2387185	191.41	ug/L		91
36) 2-butanone	9.431	72	168069	429.63	ug/L		94
38) 2,2-dichloropropane	9.515	77	726414	96.90	ug/L		97
39) cis-1,2-dichloroethene	9.484	96	417581	101.07	ug/L		98
40) methyl acrylate	9.536	85	48977	106.11	ug/L	#	85
41) propionitrile	9.520	54	501220	1113.19	ug/L		82
42) bromochloromethane	9.787	128	214902	105.73	ug/L		88
43) tetrahydrofuran	9.803	71	43797	114.01	ug/L	#	61
44) chloroform	9.881	85	431846	101.95	ug/L		99
45) t-butyl formate	9.918	59	146822	149.56	ug/L		96
47) methacrylonitrile	9.714	67	136467	111.52	ug/L		75
48) 1,1,1-trichloroethane	10.127	97	770606	99.00	ug/L		98
49) cyclohexane	10.226	84	774145	94.77	ug/L		97
50) 1,1-dichloropropene	10.299	75	483494	104.17	ug/L		95
51) carbon tetrachloride	10.320	117	717523	98.58	ug/L		95
56) 2,2,4-trimethylpentane	10.650	57	1698840	107.60	ug/L		98
57) benzene	10.550	78	1372716	97.89	ug/L		88
58) tert-amyl methyl ether	10.645	73	2351410	188.53	ug/L		94
59) 1,2-dichloroethane	10.587	62	464588	98.35	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266329.D
Acq On : 30 Nov 2017 11:06 pm
Operator : CHELSEAS
Sample : ic11221-100
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 01 15:51:51 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:47:55 2017
Response via : Initial Calibration

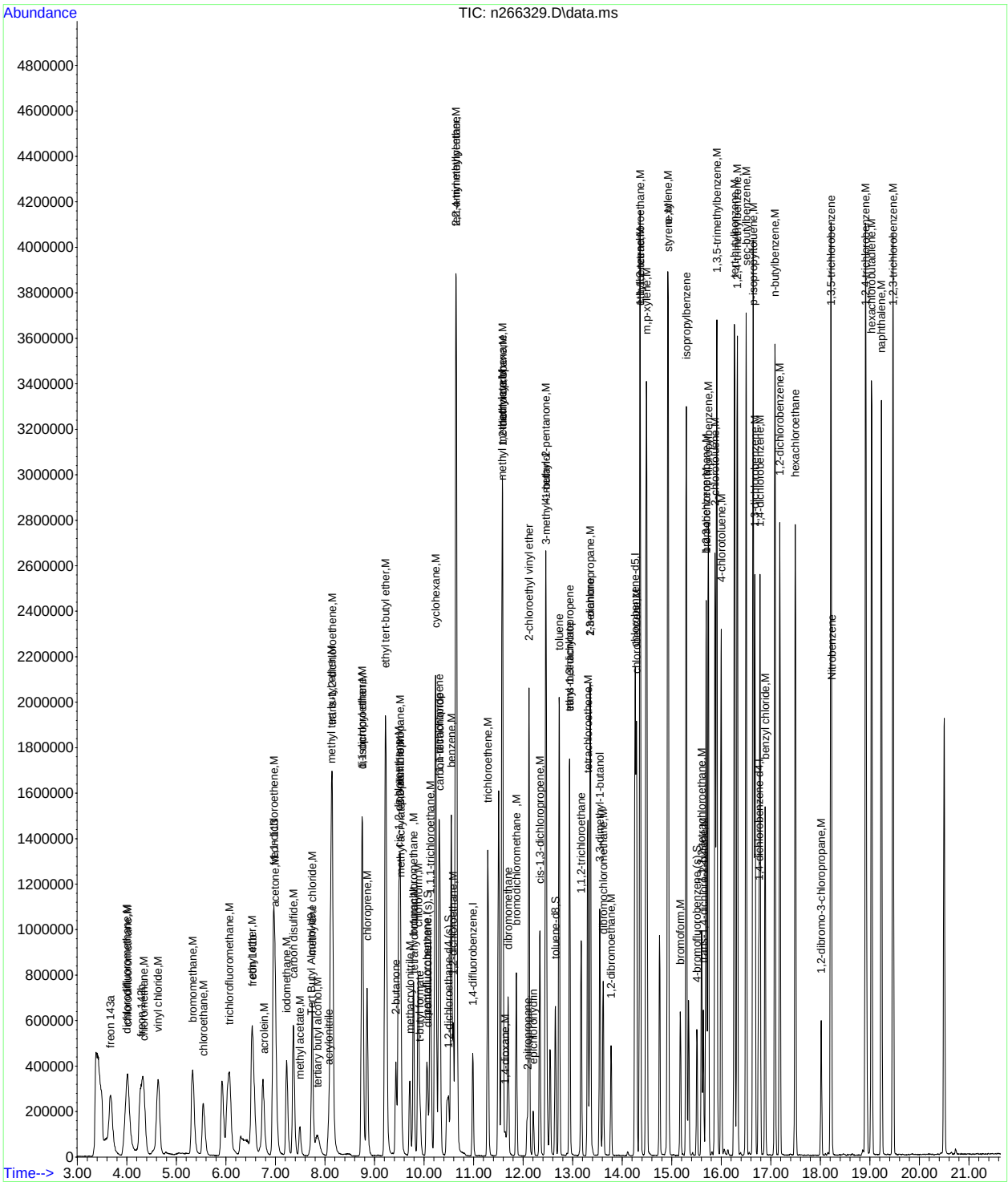
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
62) trichloroethene	11.288	95	368071	104.38 ug/L		94
63) methyl methacrylate	11.570	69	389864	101.87 ug/L		90
64) 1,2-dichloropropane	11.591	63	354837	101.10 ug/L		95
65) methylcyclohexane	11.581	83	894749	97.41 ug/L		98
66) dibromomethane	11.696	93	219443	105.77 ug/L		94
67) bromodichloromethane	11.863	83	493085	104.25 ug/L		87
68) 2-nitropropane	12.083	41	85357m	82.08 ug/L		
69) 2-chloroethyl vinyl ether	12.120	63	816470	516.61 ug/L		98
70) epichlorohydrin	12.203	57	165246	549.95 ug/L		95
71) cis-1,3-dichloropropene	12.339	75	536152	101.21 ug/L		97
72) 4-methyl-2-pentanone	12.454	58	546653	440.63 ug/L		93
73) 3-methyl-1-butanol	12.470	55	410039	2327.37 ug/L		96
76) toluene	12.726	92	852264	102.93 ug/L		99
77) ethyl methacrylate	12.935	69	412880	113.45 ug/L		96
78) trans-1,3-dichloropropene	12.941	75	471845	101.54 ug/L		93
79) 1,1,2-trichloroethane	13.171	83	231998	100.09 ug/L		90
80) tetrachloroethene	13.307	164	337461	103.92 ug/L		92
81) 2-hexanone	13.354	58	468502	425.16 ug/L		95
82) 1,3-dichloropropane	13.359	76	461139	103.22 ug/L		96
84) 3,3-dimethyl-1-butanol	13.547	57	492286	1206.32 ug/L		92
85) dibromochloromethane	13.615	129	374158	104.53 ug/L		97
86) 1,2-dibromoethane	13.777	107	291867	99.18 ug/L		99
87) chlorobenzene	14.290	112	916271	97.70 ug/L		98
88) 1,1,1,2-tetrachloroethane	14.363	131	530387	111.29 ug/L		90
89) ethylbenzene	14.358	91	1534079	95.58 ug/L		91
90) m,p-xylene	14.494	106	1303023	199.53 ug/L		87
91) o-xylene	14.918	106	743444	106.07 ug/L		91
92) styrene	14.933	104	1034651	99.28 ug/L		93
94) bromoform	15.174	173	274770	100.96 ug/L		97
95) isopropylbenzene	15.294	105	1906406	97.39 ug/L		89
98) bromobenzene	15.697	156	475309	103.18 ug/L		97
99) 1,1,2,2-tetrachloroethane	15.603	83	437736	108.53 ug/L		98
100) trans-1,4-dichloro-2-b...	15.639	53	111454	115.87 ug/L		94
101) 1,2,3-trichloropropane	15.692	110	130339	108.40 ug/L		94
102) n-propylbenzene	15.739	120	550379	113.81 ug/L	#	66
103) 2-chlorotoluene	15.875	126	501804	110.15 ug/L		86
104) 4-chlorotoluene	16.000	126	445880	108.82 ug/L		90
105) 1,3,5-trimethylbenzene	15.911	105	1794640	105.54 ug/L		85
106) tert-butylbenzene	16.267	134	470955	122.04 ug/L	#	90
107) 1,2,4-trimethylbenzene	16.325	105	1743453	101.41 ug/L		88
108) sec-butylbenzene	16.502	105	2255728	100.23 ug/L		85
109) 1,3-dichlorobenzene	16.680	146	984910	101.30 ug/L		99
110) p-isopropyltoluene	16.644	119	2013497	100.90 ug/L		89
111) 1,4-dichlorobenzene	16.785	146	989105	96.84 ug/L		93
112) 1,2-dichlorobenzene	17.182	146	1067638	99.75 ug/L		94
113) benzyl chloride	16.884	91	1006065	102.01 ug/L		95
115) n-butylbenzene	17.083	92	1074267	104.78 ug/L		86
116) hexachloroethane	17.496	201	537833	124.57 ug/L		95
117) 1,2-dibromo-3-chloropr...	18.019	157	170590	107.97 ug/L		93
118) Nitrobenzene	18.234	77	60051	124.91 ug/L		97
119) 1,3,5-trichlorobenzene	18.218	180	1293739	98.82 ug/L		94
120) 1,2,4-trichlorobenzene	18.919	180	1261612	100.90 ug/L		98
121) hexachlorobutadiene	19.039	225	755514	108.56 ug/L		98
122) naphthalene	19.233	128	2306382	89.89 ug/L		87
123) 1,2,3-trichlorobenzene	19.468	180	1252837	101.97 ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266329.D
Acq On : 30 Nov 2017 11:06 pm
Operator : CHELSEAS
Sample : ic11221-100
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 01 15:51:51 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:47:55 2017
Response via : Initial Calibration



Manual Integration Approval Summary

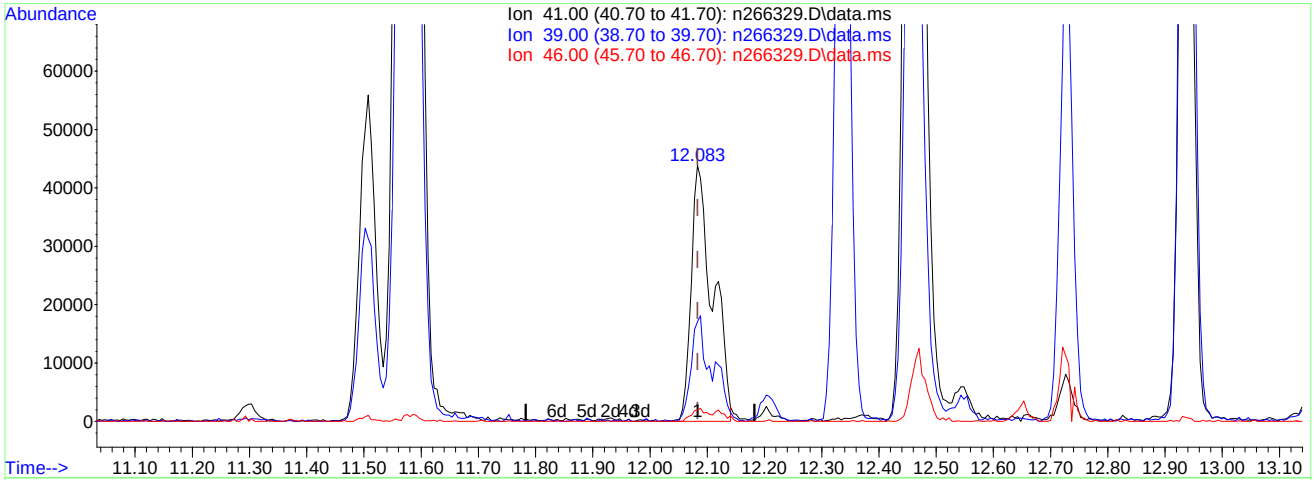
Sample Number:	VN11221-IC11221	**Method:**	EPA 624
Lab FileID:	N266329.D	**Analyst approved:**	12/01/17 16:54 Ying Li
Injection Time:	11/30/17 23:06	**Supervisor approved:**	12/04/17 01:45 Kanya Veerawat

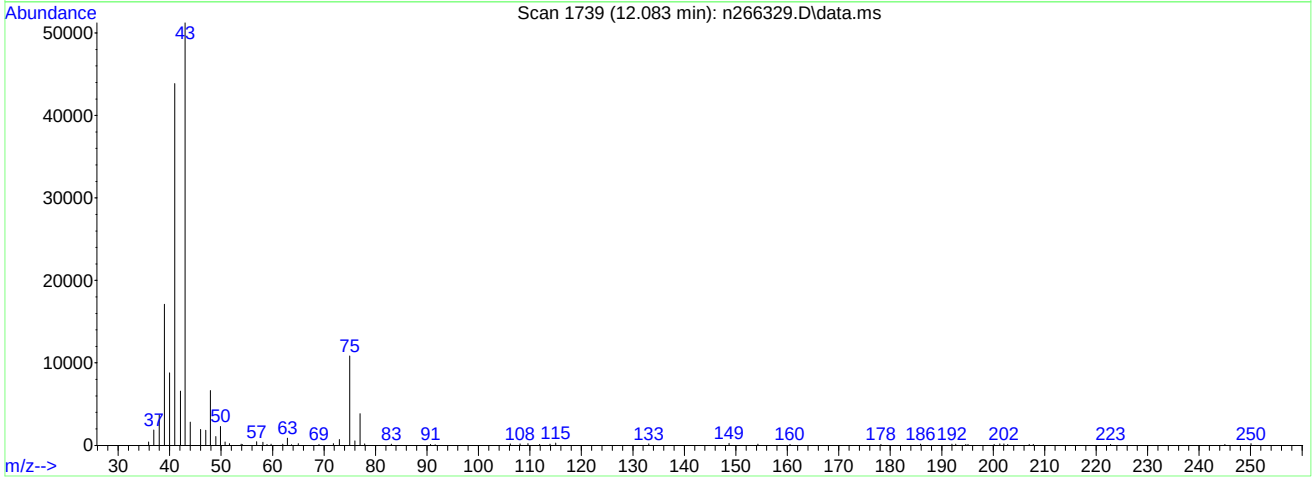
Parameter	CAS	Sig#	R.T. (min.)	Reason
2-Nitropropane	79-46-9		12.08	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266329.D
Acq On : 30 Nov 2017 11:06 pm
Operator : CHELSEAS
Sample : ic11221-100
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 01 15:20:23 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:17:24 2017
Response via : Initial Calibration





TIC: n266329.D\data.ms

(68) 2-nitropropane

12.083min (-0.000) 163.22ug/L

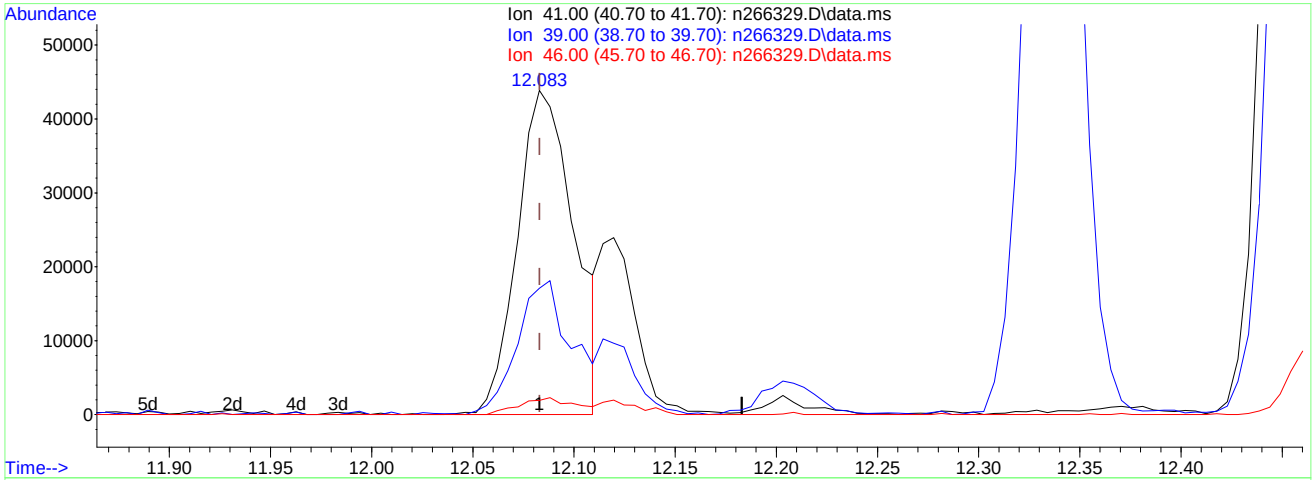
response 114049

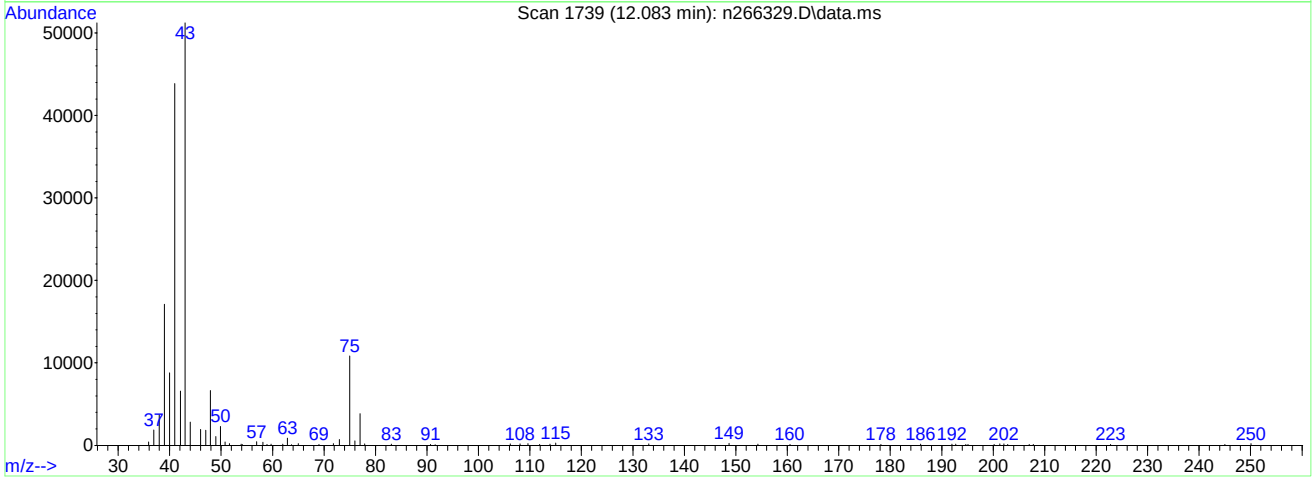
Ion	Exp%	Act%
41.00	100	100
39.00	33.10	38.67
46.00	5.00	4.39
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266329.D
Acq On : 30 Nov 2017 11:06 pm
Operator : CHELSEAS
Sample : ic11221-100
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 01 15:51:09 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:47:55 2017
Response via : Initial Calibration





TIC: n266329.D\data.ms

(68) 2-nitropropane

12.083min (-0.000) 82.08ug/L m

response 85357

Ion	Exp%	Act%
41.00	100	100
39.00	31.10	38.98
46.00	5.00	4.39
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 12/05/17 12:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266330.D
Acq On : 30 Nov 2017 11:36 pm
Operator : CHELSEAS
Sample : ic11221-200
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 05 08:21:27 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:22:05 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.725	65	172548	300.00	ug/L		0.03
4) pentafluorobenzene	10.052	168	279614	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.983	114	410660	30.00	ug/L		0.00
74) chlorobenzene-d5	14.257	117	368468	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.757	152	262030	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.078	113	131360	30.22	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.73%				
54) 1,2-dichloroethane-d4 (s)	10.497	65	147090	29.12	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 97.07%				
75) toluene-d8	12.652	98	485356	30.20	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.67%				
97) 4-bromofluorobenzene (s)	15.507	95	186803	30.78	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.60%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.845	59	581452	994.74	ug/L		92
3) 1,4-dioxane	11.642	88	263966	5423.10	ug/L		89
5) freon 143a	3.687	69	1547913	183.34	ug/L		97
6) freon 142b	4.299	65	1656160	213.46	ug/L		93
7) chlorodifluoromethane	4.017	51	1160197	188.32	ug/L		95
8) dichlorodifluoromethane	4.012	85	1843949	186.76	ug/L		96
9) chloromethane	4.357	50	1545676	213.70	ug/L		90
10) vinyl chloride	4.644	62	1906370	203.87	ug/L		98
12) bromomethane	5.330	94	1172712	196.55	ug/L		86
13) chloroethane	5.544	64	946691	183.72	ug/L		90
14) trichlorofluoromethane	6.077	101	2070839	197.31	ug/L		93
16) freon 141b	6.548	81	1494032	196.69	ug/L		89
17) ethyl ether	6.522	59	536594	201.29	ug/L		87
18) acrolein	6.778	56	155030	196.63	ug/L	#	63
19) 1,1-dichloroethene	6.961	96	857110	187.55	ug/L		98
20) acetone	6.998	58	360506	727.81	ug/L		95
21) freon 113	6.982	101	1012141	205.39	ug/L		94
23) iodomethane	7.228	142	1603308	203.80	ug/L		95
24) carbon disulfide	7.364	76	2705681	189.90	ug/L		97
25) methylene chloride	7.746	84	844203	193.21	ug/L		95
26) methyl acetate	7.495	43	483470	197.79	ug/L		79
27) methyl tert butyl ether	8.128	73	4756136	361.70	ug/L		87
28) trans-1,2-dichloroethene	8.149	96	766149	177.86	ug/L		95
29) acrylonitrile	8.070	53	295988	202.31	ug/L		95
31) di-isopropyl ether	8.755	45	2269339	188.93	ug/L		94
32) 1,1-dichloroethane	8.755	63	1235965	182.91	ug/L		97
33) chloroprene	8.849	53	1059469	201.39	ug/L		84
35) ethyl tert-butyl ether	9.226	59	4571440	377.61	ug/L		82
36) 2-butanone	9.430	72	352404	906.08	ug/L		97
38) 2,2-dichloropropane	9.514	77	1493944	196.64	ug/L		94
39) cis-1,2-dichloroethene	9.482	96	847540	181.37	ug/L		98
40) methyl acrylate	9.535	85	104060	218.22	ug/L	#	78
41) propionitrile	9.519	54	989897	2032.02	ug/L		87
42) bromochloromethane	9.786	128	432275	194.14	ug/L		92
43) tetrahydrofuran	9.801	71	92586	207.21	ug/L	#	56
44) chloroform	9.880	85	867631	183.96	ug/L		99
45) t-butyl formate	9.916	59	333549	282.19	ug/L		93
47) methacrylonitrile	9.712	67	278569	213.48	ug/L		78
48) 1,1,1-trichloroethane	10.131	97	1591520	185.80	ug/L		99
49) cyclohexane	10.230	84	1624879	202.30	ug/L		94
50) 1,1-dichloropropene	10.298	75	1013259	208.07	ug/L		96
51) carbon tetrachloride	10.319	117	1485054	195.49	ug/L		96
56) 2,2,4-trimethylpentane	10.654	57	3412074	209.63	ug/L		90
57) benzene	10.549	78	2594608	169.45	ug/L		80
58) tert-amyl methyl ether	10.649	73	4323597	321.66	ug/L		79
59) 1,2-dichloroethane	10.591	62	952643	175.59	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266330.D
Acq On : 30 Nov 2017 11:36 pm
Operator : CHELSEAS
Sample : ic11221-200
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 05 08:21:27 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:22:05 2017
Response via : Initial Calibration

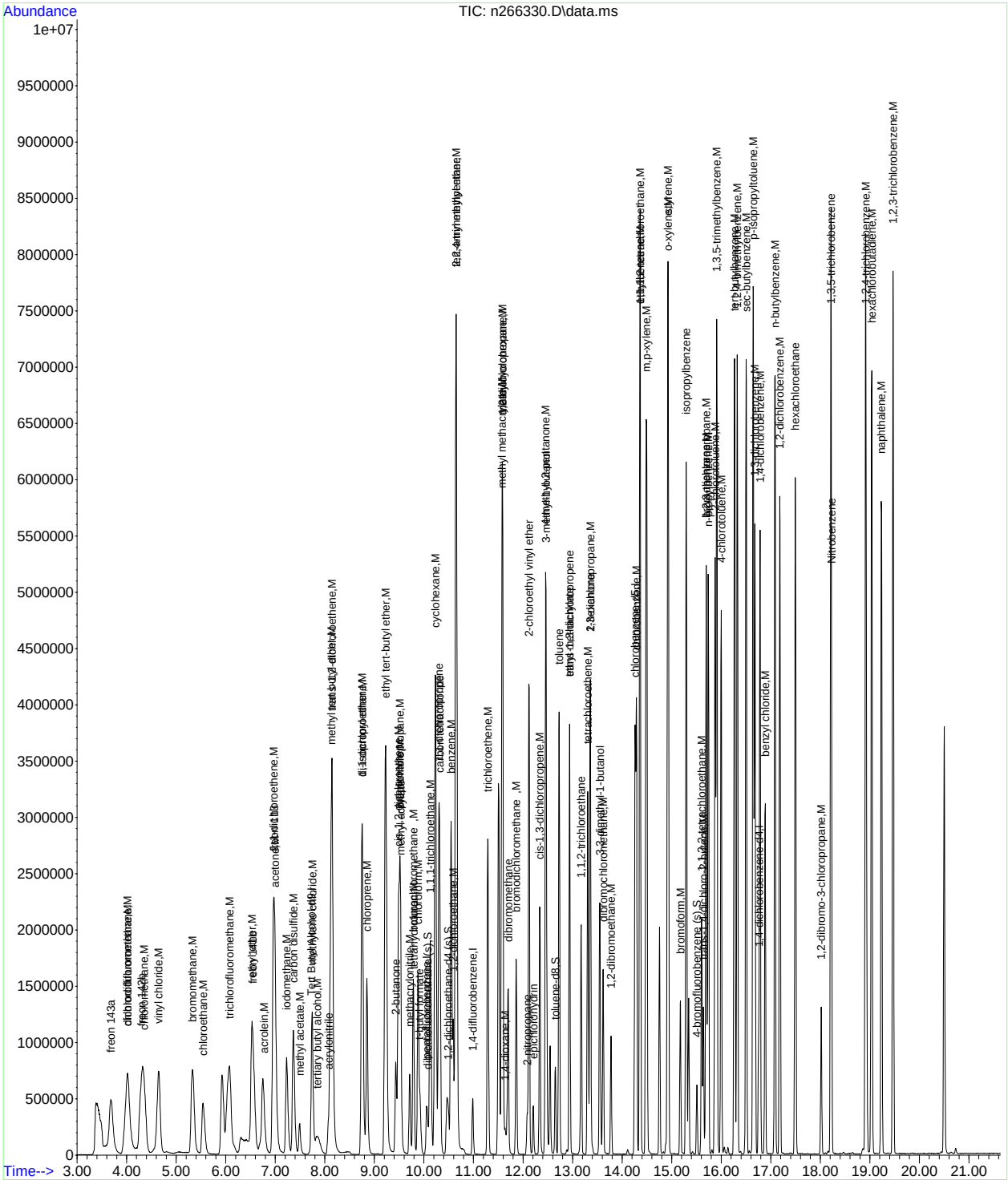
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
62) trichloroethene	11.287	95	772457	197.62	ug/L		92
63) methyl methacrylate	11.569	69	837898	209.28	ug/L		91
64) 1,2-dichloropropane	11.590	63	738387	192.78	ug/L		100
65) methylcyclohexane	11.580	83	1838859	192.43	ug/L		94
66) dibromomethane	11.700	93	465185	190.42	ug/L		93
67) bromodichloromethane	11.862	83	1019355	190.10	ug/L		86
68) 2-nitropropane	12.087	41	172323m	206.35	ug/L		
69) 2-chloroethyl vinyl ether	12.118	63	1647605	1004.00	ug/L		93
70) epichlorohydrin	12.207	57	356455	1033.21	ug/L		96
71) cis-1,3-dichloropropene	12.338	75	1145308	194.82	ug/L		99
72) 4-methyl-2-pentanone	12.458	58	1082294	805.26	ug/L	#	82
73) 3-methyl-1-butanol	12.469	55	854691	4105.11	ug/L		94
76) toluene	12.730	92	1733124	181.72	ug/L	#	85
77) ethyl methacrylate	12.939	69	853259	203.81	ug/L		99
78) trans-1,3-dichloropropene	12.939	75	1005034	193.23	ug/L		93
79) 1,1,2-trichloroethane	13.175	83	495418	198.00	ug/L		91
80) tetrachloroethene	13.305	164	728218	189.80	ug/L		93
81) 2-hexanone	13.353	58	948883	792.04	ug/L		93
82) 1,3-dichloropropane	13.363	76	974617	182.41	ug/L		88
84) 3,3-dimethyl-1-butanol	13.546	57	1048148	2022.29	ug/L		94
85) dibromochloromethane	13.619	129	814141	198.23	ug/L		98
86) 1,2-dibromoethane	13.776	107	634248	193.29	ug/L		99
87) chlorobenzene	14.289	112	1878985	175.36	ug/L		92
88) 1,1,1,2-tetrachloroethane	14.367	131	1092920	197.87	ug/L		88
89) ethylbenzene	14.362	91	2797089	158.05	ug/L		75
90) m,p-xylene	14.493	106	2599805	357.84	ug/L		98
91) o-xylene	14.916	106	1528855	192.95	ug/L	#	74
92) styrene	14.932	104	2074649	184.00	ug/L		81
94) bromoform	15.178	173	597515	199.14	ug/L		98
95) isopropylbenzene	15.293	105	3260729	157.43	ug/L		69
98) bromobenzene	15.701	156	1020445	187.84	ug/L		89
99) 1,1,2,2-tetrachloroethane	15.602	83	911100	194.27	ug/L		93
100) trans-1,4-dichloro-2-b...	15.638	53	227050	191.65	ug/L		98
101) 1,2,3-trichloropropane	15.690	110	283240	182.81	ug/L		96
102) n-propylbenzene	15.737	120	1168615	207.00	ug/L	#	35
103) 2-chlorotoluene	15.879	126	1087441	209.02	ug/L	#	64
104) 4-chlorotoluene	15.999	126	978637	204.40	ug/L	#	70
105) 1,3,5-trimethylbenzene	15.910	105	3144056	175.61	ug/L		66
106) tert-butylbenzene	16.271	134	1041918	240.94	ug/L	#	57
107) 1,2,4-trimethylbenzene	16.323	105	3119668	167.66	ug/L		68
108) sec-butylbenzene	16.501	105	3731309	161.24	ug/L		58
109) 1,3-dichlorobenzene	16.679	146	2007073	172.55	ug/L		88
110) p-isopropyltoluene	16.648	119	3460574	166.19	ug/L		63
111) 1,4-dichlorobenzene	16.784	146	2004575	167.73	ug/L		82
112) 1,2-dichlorobenzene	17.186	146	2148865	168.90	ug/L		86
113) benzyl chloride	16.888	91	1977500	173.32	ug/L		87
115) n-butylbenzene	17.087	92	2136135	188.61	ug/L	#	71
116) hexachloroethane	17.500	201	1183867	237.32	ug/L		95
117) 1,2-dibromo-3-chloropr...	18.023	157	381843	183.61	ug/L		89
118) Nitrobenzene	18.232	77	141000	223.04	ug/L		95
119) 1,3,5-trichlorobenzene	18.217	180	2450856	167.30	ug/L		90
120) 1,2,4-trichlorobenzene	18.917	180	2345806	161.23	ug/L		95
121) hexachlorobutadiene	19.038	225	1516196	191.97	ug/L		95
122) naphthalene	19.236	128	3693689	134.62	ug/L		70
123) 1,2,3-trichlorobenzene	19.467	180	2308675	166.92	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266330.D
Acq On : 30 Nov 2017 11:36 pm
Operator : CHELSEAS
Sample : ic11221-200
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 05 08:21:27 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:22:05 2017
Response via : Initial Calibration



Manual Integration Approval Summary

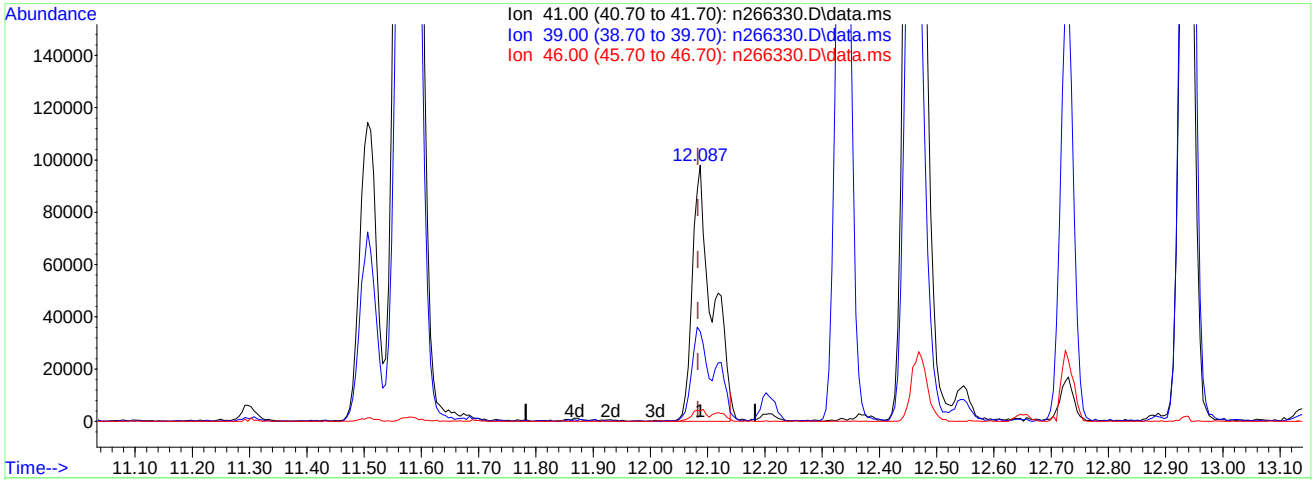
Sample Number:	VN11221-IC11221	**Method:**	EPA 624
Lab FileID:	N266330.D	**Analyst approved:**	12/05/17 08:38 Ying Li
Injection Time:	11/30/17 23:36	**Supervisor approved:**	12/05/17 12:48 Kanya Veerawat

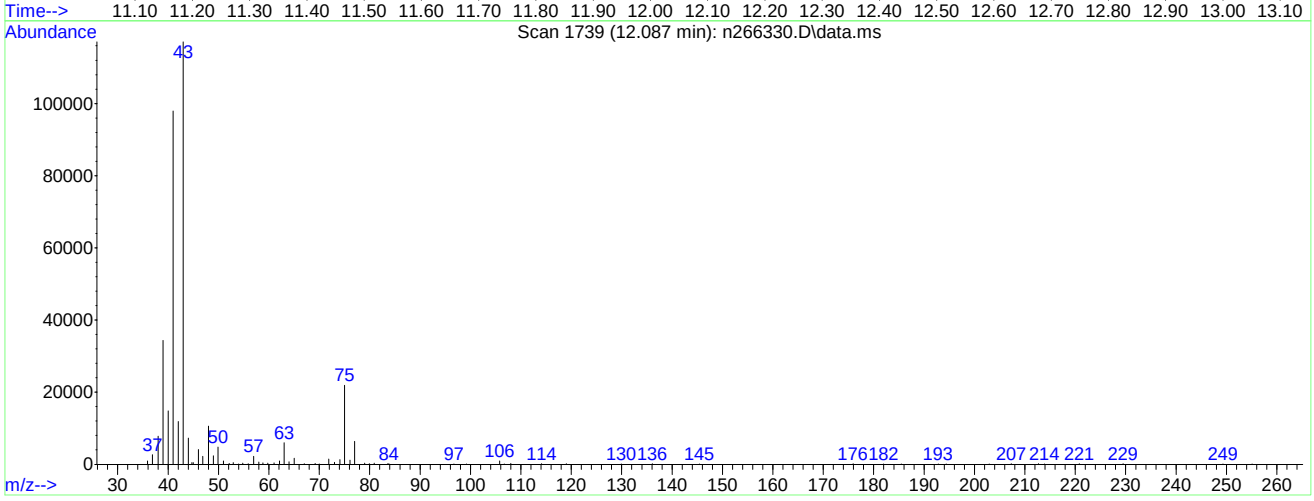
Parameter	CAS	Sig#	R.T. (min.)	Reason
2-Nitropropane	79-46-9		12.09	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266330.D
Acq On : 30 Nov 2017 11:36 pm
Operator : CHELSEAS
Sample : ic11221-200
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 01 15:20:42 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 15:17:24 2017
Response via : Initial Calibration





TIC: n266330.D\data.ms

(68) 2-nitropropane

12.087min (+0.004) 300.53ug/L

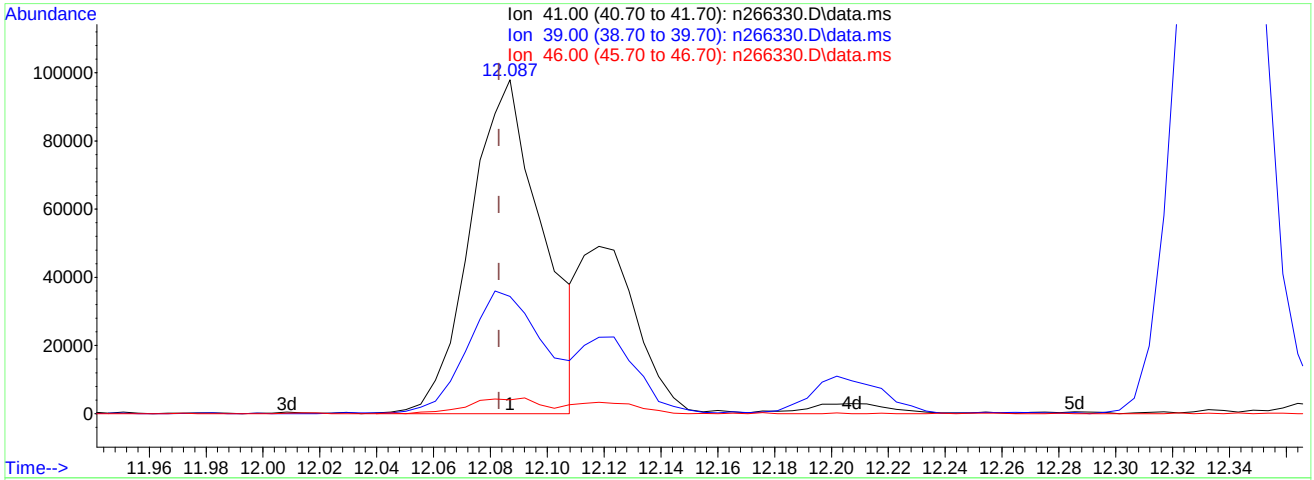
response 238694

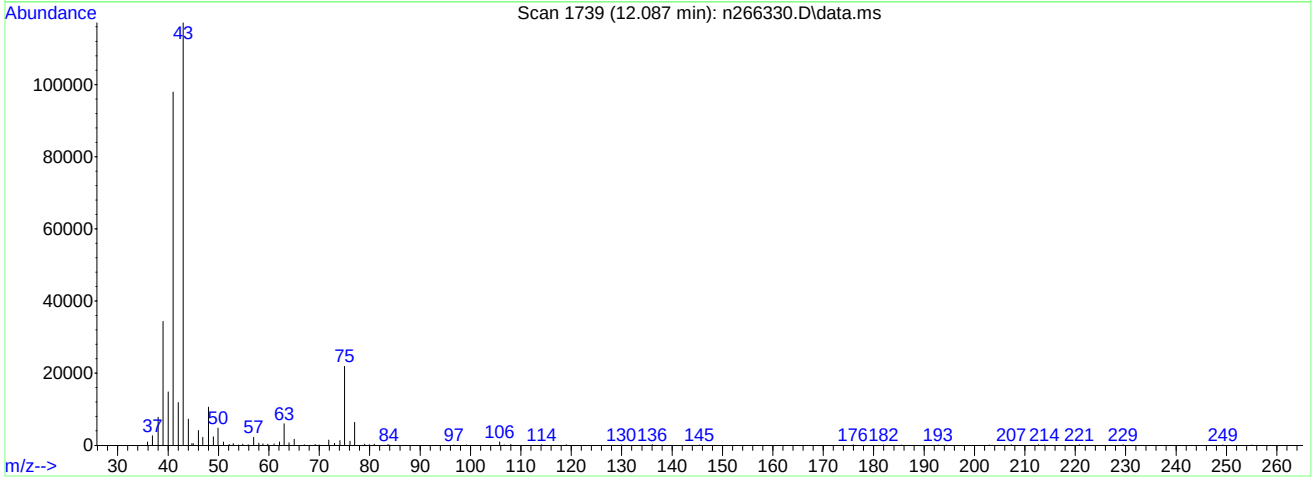
Ion	Exp%	Act%
41.00	100	100
39.00	33.10	34.88
46.00	5.00	4.18
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266330.D
Acq On : 30 Nov 2017 11:36 pm
Operator : CHELSEAS
Sample : ic11221-200
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 01 16:34:55 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:22:05 2017
Response via : Initial Calibration





TIC: n266330.D\data.ms

(68) 2-nitropropane

12.087min (+0.004) 206.35ug/L m

response 172323

Ion	Exp%	Act%
41.00	100	100
39.00	33.10	35.10
46.00	5.00	4.18
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 12/05/17 12:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266333.D
Acq On : 1 Dec 2017 1:04 am
Operator : CHELSEAS
Sample : icv11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 01 16:43:48 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.700	65	149828	300.00	ug/L		0.00
4) pentafluorobenzene	10.054	168	250528	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.985	114	330051	30.00	ug/L		0.00
74) chlorobenzene-d5	14.253	117	295398	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.753	152	227162	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.069	113	112443	28.87	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.23%				
54) 1,2-dichloroethane-d4 (s)	10.498	65	120507	29.69	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 98.97%				
75) toluene-d8	12.648	98	383764	29.78	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.27%				
97) 4-bromofluorobenzene (s)	15.509	95	159894	30.39	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.30%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.820	59	48677	95.90	ug/L		87
3) 1,4-dioxane	11.638	88	21076	498.66	ug/L		89
5) freon 143a	3.694	69	86056	11.38	ug/L		90
6) freon 142b	4.269	65	128265	18.45	ug/L		92
7) chlorodifluoromethane	4.008	51	101563	18.40	ug/L		90
8) dichlorodifluoromethane	3.992	85	183256	20.72	ug/L		92
9) chloromethane	4.321	50	122960	18.97	ug/L		95
10) vinyl chloride	4.619	62	157416	18.79	ug/L		99
12) bromomethane	5.325	94	102513	19.44	ug/L		93
13) chloroethane	5.545	64	88650	19.20	ug/L		95
14) trichlorofluoromethane	6.068	101	182871	19.45	ug/L		94
16) freon 141b	6.544	81	105992	15.57	ug/L		89
17) ethyl ether	6.518	59	50127	20.99	ug/L		96
18) acrolein	6.759	56	13358	18.91	ug/L		84
19) 1,1-dichloroethene	6.963	96	71818	17.54	ug/L		91
20) acetone	6.999	58	37585	84.69	ug/L	#	71
21) freon 113	6.983	101	105322	23.85	ug/L		95
23) iodomethane	7.229	142	143140	20.31	ug/L		97
24) carbon disulfide	7.365	76	267145	20.93	ug/L		99
25) methylene chloride	7.742	84	78642	20.09	ug/L		92
26) methyl acetate	7.486	43	41662	19.02	ug/L		93
27) methyl tert butyl ether	8.124	73	491286	41.70	ug/L		94
28) trans-1,2-dichloroethene	8.145	96	68833	17.83	ug/L		91
29) acrylonitrile	8.071	53	26570	20.27	ug/L		92
31) di-isopropyl ether	8.746	45	211017	19.61	ug/L		96
32) 1,1-dichloroethane	8.756	63	117532	19.41	ug/L		96
33) chloroprene	8.851	53	94984	20.15	ug/L		91
35) ethyl tert-butyl ether	9.217	59	232491	21.43	ug/L		99
36) 2-butanone	9.426	72	30975	88.89	ug/L		99
38) 2,2-dichloropropane	9.515	77	128895	18.94	ug/L		97
39) cis-1,2-dichloroethene	9.483	96	79552	19.00	ug/L		98
40) methyl acrylate	9.531	85	8796	20.59	ug/L	#	84
41) propionitrile	9.520	54	90402	207.12	ug/L		85
42) bromochloromethane	9.782	128	39182	19.64	ug/L		88
43) tetrahydrofuran	9.803	71	7410	18.51	ug/L	#	76
44) chloroform	9.881	85	80093	18.95	ug/L		95
45) t-butyl formate	9.918	59	26002	24.55	ug/L		90
47) methacrylonitrile	9.703	67	22881	19.57	ug/L		95
48) 1,1,1-trichloroethane	10.122	97	142505	18.57	ug/L		95
49) cyclohexane	10.231	84	138153	19.20	ug/L	#	77
50) 1,1-dichloropropene	10.299	75	90127	20.66	ug/L		94
51) carbon tetrachloride	10.315	117	136561	20.06	ug/L		99
56) 2,2,4-trimethylpentane	10.650	57	280555	21.45	ug/L		90
57) benzene	10.550	78	259761	21.11	ug/L		96
58) tert-amyl methyl ether	10.645	73	232368	21.51	ug/L		97
59) 1,2-dichloroethane	10.587	62	85587	19.63	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266333.D
Acq On : 1 Dec 2017 1:04 am
Operator : CHELSEAS
Sample : icv11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 01 16:43:48 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration

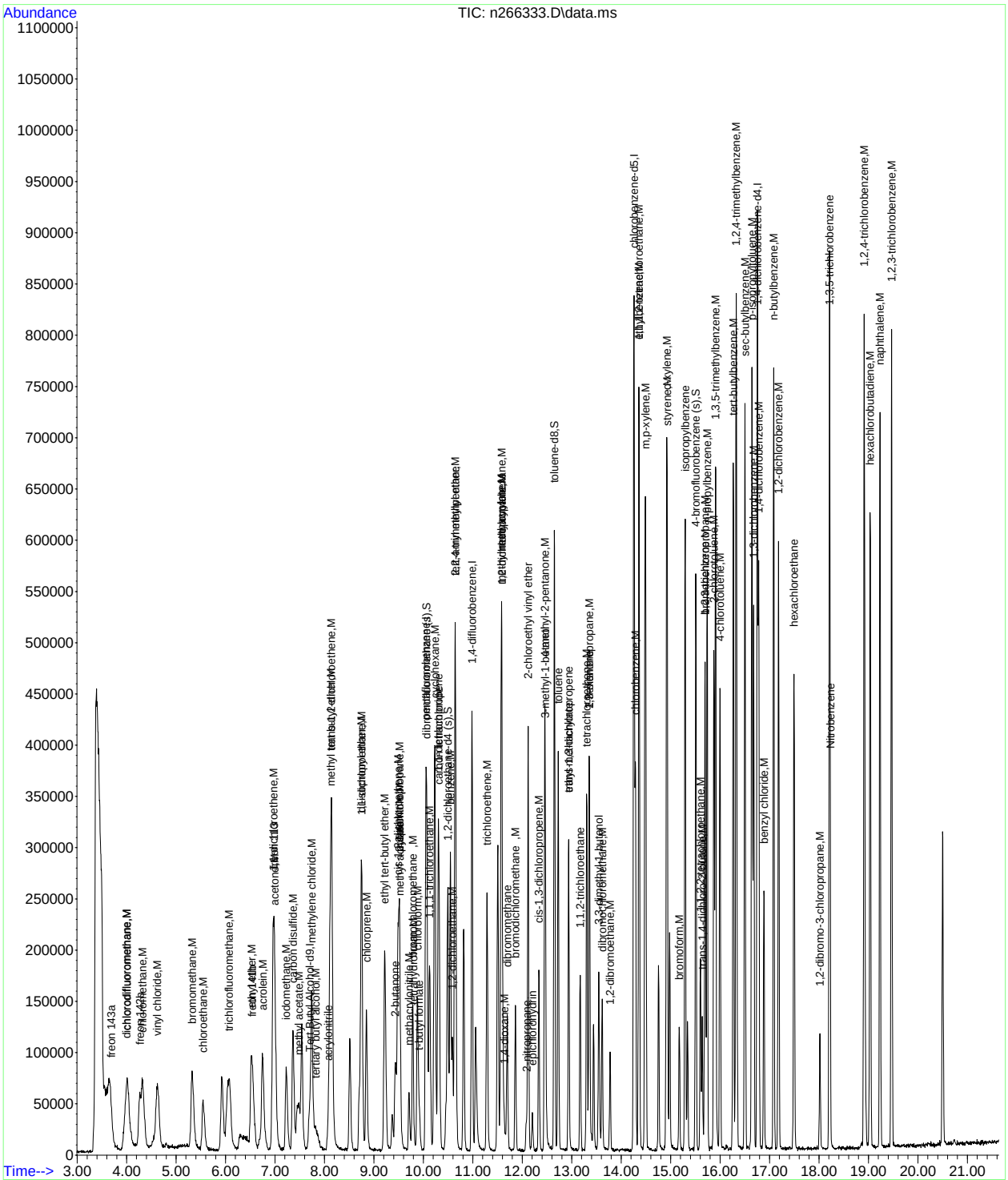
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
62) trichloroethene	11.283	95	69368	22.08	ug/L		85
63) methyl methacrylate	11.570	69	67240	20.90	ug/L		97
64) 1,2-dichloropropane	11.591	63	63929	20.77	ug/L		88
65) methylcyclohexane	11.581	83	153735	20.02	ug/L		97
66) dibromomethane	11.696	93	40558	20.66	ug/L		93
67) bromodichloromethane	11.858	83	85847	19.92	ug/L		93
68) 2-nitropropane	12.083	41	13942m	19.19	ug/L		
69) 2-chloroethyl vinyl ether	12.119	63	155362	117.79	ug/L		99
70) epichlorohydrin	12.203	57	26335	94.98	ug/L		93
71) cis-1,3-dichloropropene	12.334	75	94362	19.97	ug/L		96
72) 4-methyl-2-pentanone	12.454	58	86063	79.67	ug/L		87
73) 3-methyl-1-butanol	12.470	55	64962	388.22	ug/L		91
76) toluene	12.726	92	155791	20.38	ug/L		95
77) ethyl methacrylate	12.935	69	65054	19.38	ug/L		94
78) trans-1,3-dichloropropene	12.941	75	85164	20.42	ug/L		93
79) 1,1,2-trichloroethane	13.165	83	42334	21.10	ug/L		94
80) tetrachloroethene	13.301	164	79508	25.85	ug/L		99
81) 2-hexanone	13.354	58	85303	88.82	ug/L		98
82) 1,3-dichloropropane	13.359	76	84900	19.82	ug/L		92
84) 3,3-dimethyl-1-butanol	13.547	57	83191	200.21	ug/L		92
85) dibromochloromethane	13.615	129	69320	21.05	ug/L		94
86) 1,2-dibromoethane	13.777	107	54022	20.54	ug/L		91
87) chlorobenzene	14.290	112	179003	20.84	ug/L		98
88) 1,1,1,2-tetrachloroethane	14.363	131	92364	20.86	ug/L		96
89) ethylbenzene	14.358	91	298810	21.06	ug/L		98
90) m,p-xylene	14.489	106	239080	38.89	ug/L	#	55
91) o-xylene	14.918	106	133978	21.09	ug/L		93
92) styrene	14.933	104	194965	21.57	ug/L		100
94) bromoform	15.179	173	54664	22.72	ug/L		95
95) isopropylbenzene	15.294	105	372243	22.42	ug/L		98
98) bromobenzene	15.697	156	94203	20.00	ug/L		94
99) 1,1,2,2-tetrachloroethane	15.603	83	82933	20.40	ug/L		99
100) trans-1,4-dichloro-2-b...	15.639	53	23076	22.47	ug/L		90
101) 1,2,3-trichloropropane	15.692	110	24533	18.26	ug/L		90
102) n-propylbenzene	15.739	120	99996	20.43	ug/L		97
103) 2-chlorotoluene	15.875	126	88397	19.60	ug/L		94
104) 4-chlorotoluene	16.000	126	87060	20.97	ug/L		99
105) 1,3,5-trimethylbenzene	15.906	105	347025	22.36	ug/L		99
106) tert-butylbenzene	16.267	134	78132	20.84	ug/L		94
107) 1,2,4-trimethylbenzene	16.324	105	358717	22.24	ug/L		95
108) sec-butylbenzene	16.502	105	468315	23.34	ug/L		98
109) 1,3-dichlorobenzene	16.680	146	209785	20.80	ug/L		94
110) p-isopropyltoluene	16.644	119	417611	23.13	ug/L		96
111) 1,4-dichlorobenzene	16.779	146	211108	20.38	ug/L		92
112) 1,2-dichlorobenzene	17.182	146	225410	20.44	ug/L		96
113) benzyl chloride	16.884	91	172058	17.39	ug/L		99
115) n-butylbenzene	17.083	92	210037	21.39	ug/L		95
116) hexachloroethane	17.496	201	91952	21.26	ug/L		98
117) 1,2-dibromo-3-chloropr...	18.019	157	32611	18.09	ug/L		90
118) Nitrobenzene	18.233	77	9754	17.80	ug/L		84
119) 1,3,5-trichlorobenzene	18.213	180	280817	22.11	ug/L		98
120) 1,2,4-trichlorobenzene	18.913	180	257846	20.44	ug/L		97
121) hexachlorobutadiene	19.039	225	141743	20.70	ug/L		97
122) naphthalene	19.232	128	528105	22.20	ug/L		99
123) 1,2,3-trichlorobenzene	19.468	180	252563	21.06	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266333.D
Acq On : 1 Dec 2017 1:04 am
Operator : CHELSEAS
Sample : icv11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 01 16:43:48 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration



Manual Integration Approval Summary

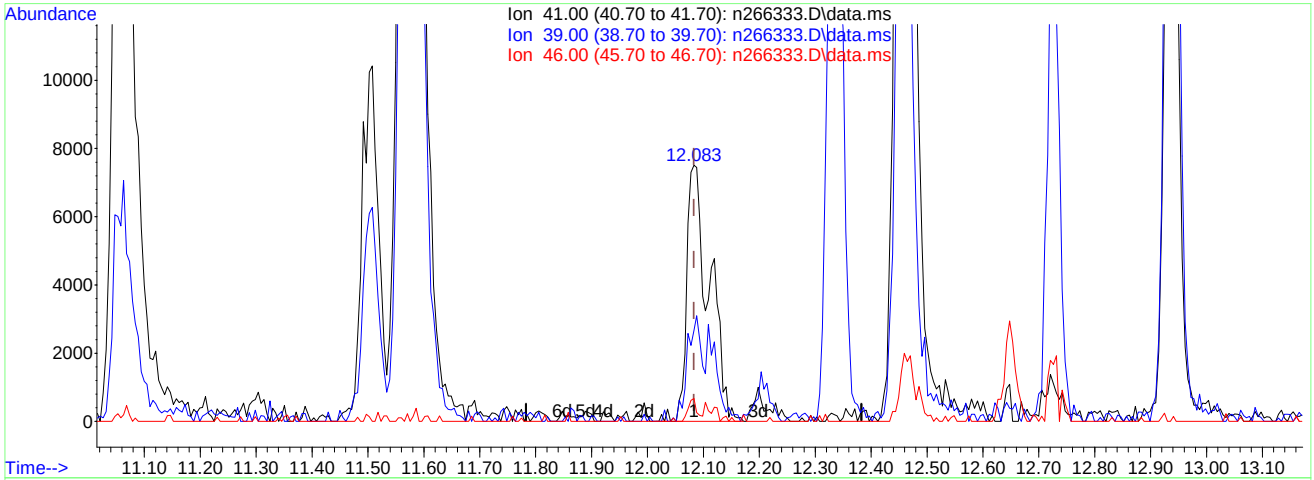
Sample Number: VN11221-ICV11221 **Method:** EPA 624
Lab FileID: N266333.D **Analyst approved:** 12/05/17 08:38 Ying Li
Injection Time: 12/01/17 01:04 **Supervisor approved:** 12/05/17 12:48 Kanya Veerawat

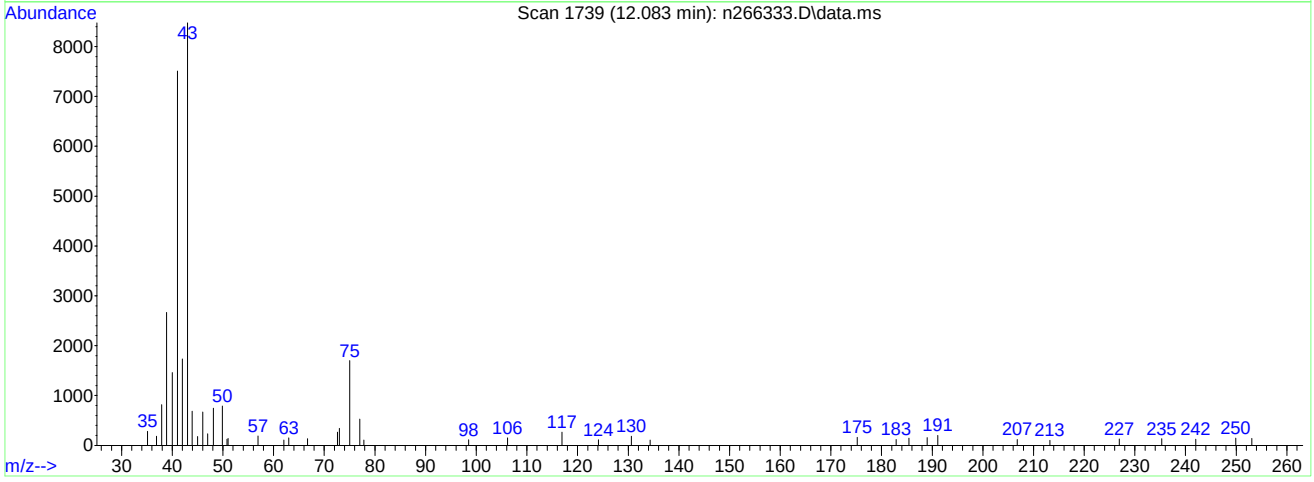
Parameter	CAS	Sig#	R.T. (min.)	Reason
2-Nitropropane	79-46-9		12.08	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266333.D
Acq On : 1 Dec 2017 1:04 am
Operator : CHELSEAS
Sample : icv11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 01 16:40:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration





TIC: n266333.D\data.ms

(68) 2-nitropropane

12.083min (-0.000) 28.93ug/L

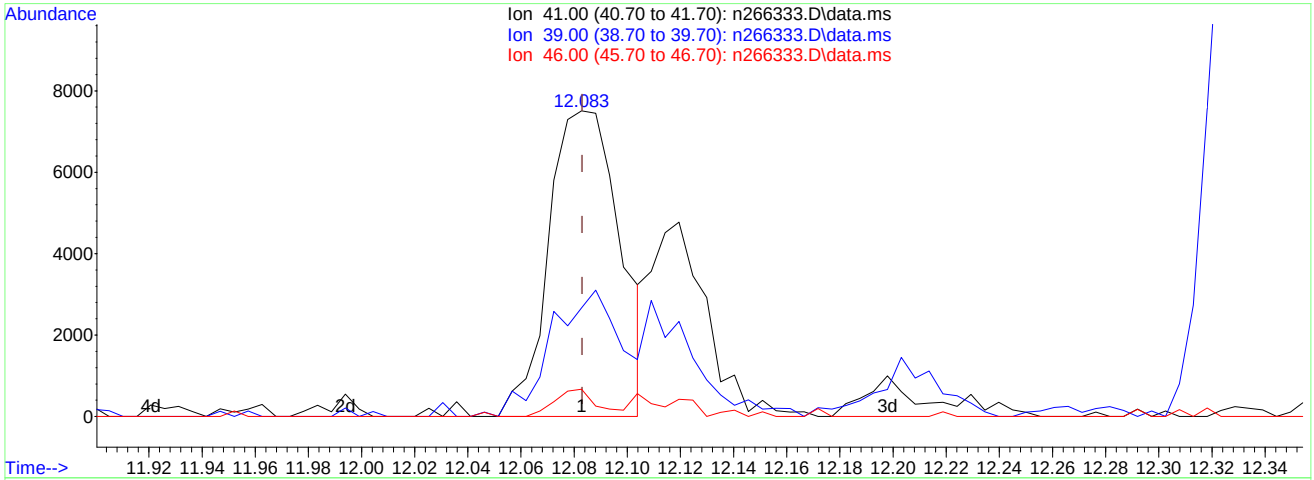
response 21016

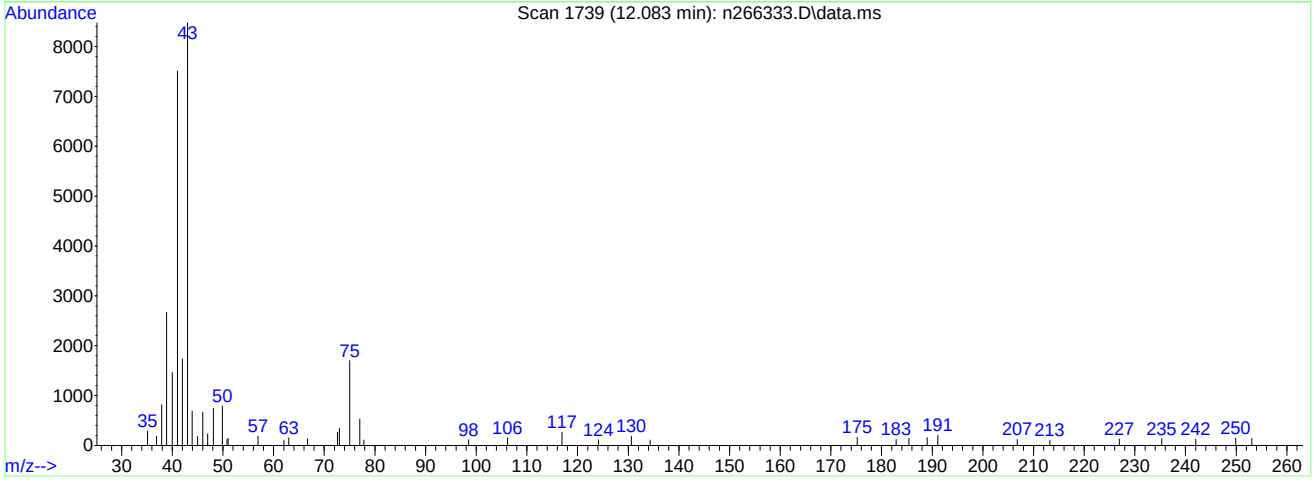
Ion	Exp%	Act%
41.00	100	100
39.00	33.10	35.51
46.00	5.00	8.94
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : n266333.D
Acq On : 1 Dec 2017 1:04 am
Operator : CHELSEAS
Sample : icv11221-20
Misc : MS22241,VN11221,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 01 16:40:45 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration





TIC: n266333.D\data.ms

(68) 2-nitropropane

12.083min (-0.000) 19.19ug/L m

response 13942

Ion	Exp%	Act%
41.00	100	100
39.00	33.10	35.51
46.00	5.00	8.94
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266354.D
Acq On : 4 Dec 2017 9:45 pm
Operator : CHELSEAS
Sample : icv11221-20
Misc : MS22241,VN11223,5,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 05 09:31:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

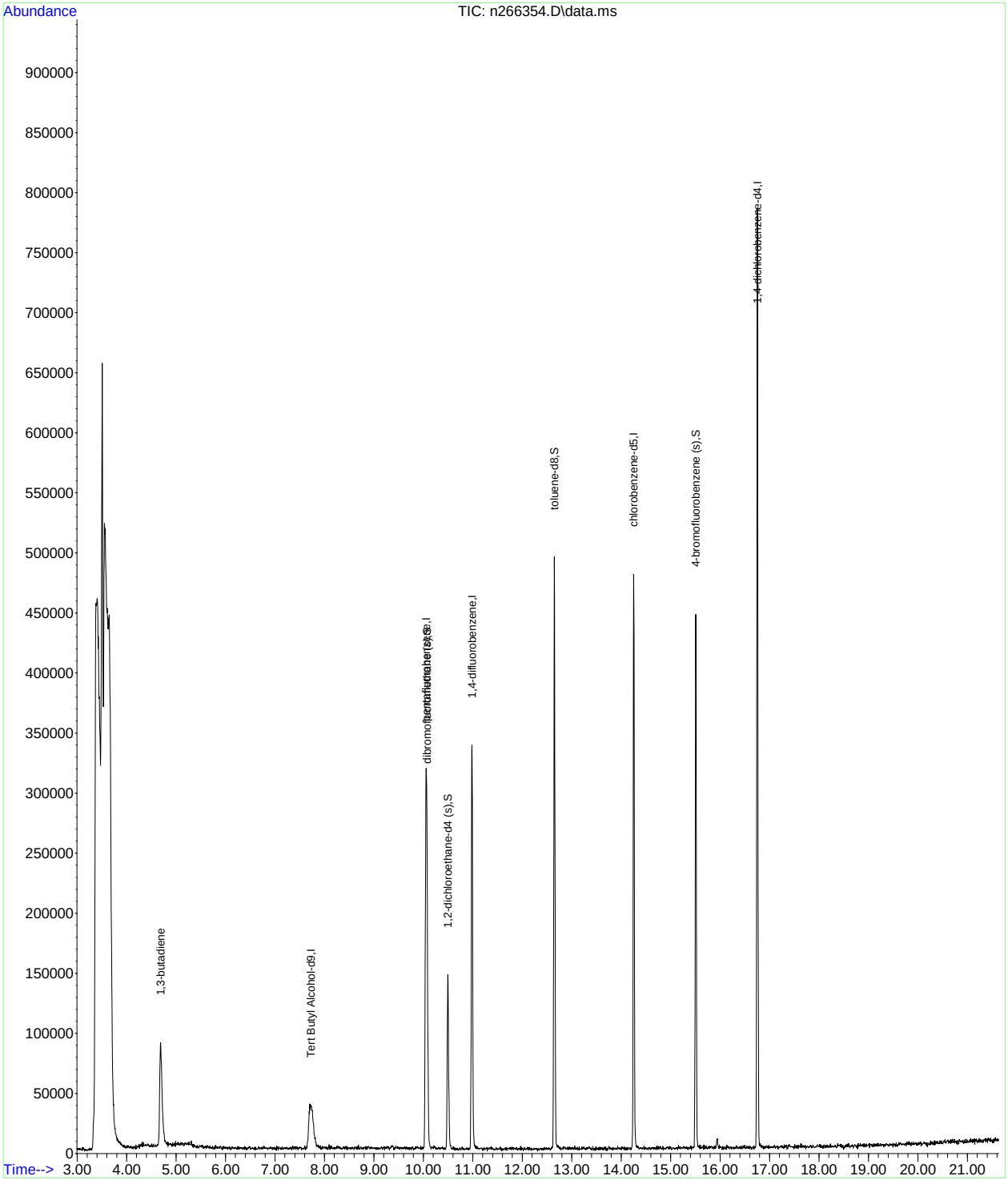
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.721	65	123155	300.00	ug/L	0.03
4) pentafluorobenzene	10.054	168	208987	30.00	ug/L	0.00
53) 1,4-difluorobenzene	10.985	114	271715	30.00	ug/L	0.00
74) chlorobenzene-d5	14.253	117	245613	30.00	ug/L	0.00
96) 1,4-dichlorobenzene-d4	16.753	152	193140	30.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.075	113	103449	31.84	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 106.13%			
54) 1,2-dichloroethane-d4 (s)	10.493	65	105822	31.67	ug/L	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 105.57%			
75) toluene-d8	12.648	98	304516	28.42	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.73%			
97) 4-bromofluorobenzene (s)	15.509	95	126857	28.36	ug/L	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 94.53%			
Target Compounds						Qvalue
11) 1,3-butadiene	4.688	54	77344	19.53	ug/L	# 69

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : n266354.D
Acq On : 4 Dec 2017 9:45 pm
Operator : CHELSEAS
Sample : icv11221-20
Misc : MS22241,VN11223,5,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 05 09:31:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\VN11233\
Data File : n266565.D
Acq On : 12 Dec 2017 10:33 am
Operator : CHELSEAS
Sample : cc11221-20
Misc : MS22984,VN11233,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 13 17:05:25 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.722	65	107497	300.00	ug/L		0.03
4) pentafluorobenzene	10.055	168	179459	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.986	114	243427	30.00	ug/L		0.00
74) chlorobenzene-d5	14.260	117	231472	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.755	152	167370	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.076	113	89282	32.00	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 106.67%				
54) 1,2-dichloroethane-d4 (s)	10.499	65	100536	33.58	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 111.93%				
75) toluene-d8	12.654	98	296997	29.41	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.03%				
97) 4-bromofluorobenzene (s)	15.510	95	120952	31.20	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 104.00%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.827	59	38565	105.90	ug/L		89
3) 1,4-dioxane	11.634	88	15171	500.30	ug/L		72
7) chlorodifluoromethane	4.024	51	117587	29.74	ug/L		98
8) dichlorodifluoromethane	4.003	85	122984	19.41	ug/L		94
9) chloromethane	4.323	50	110003	23.70	ug/L		94
10) vinyl chloride	4.621	62	138690	23.11	ug/L		96
12) bromomethane	5.321	94	85063	22.52	ug/L		95
13) chloroethane	5.546	64	74058	22.39	ug/L		90
14) trichlorofluoromethane	6.080	101	145653	21.62	ug/L		92
17) ethyl ether	6.524	59	40977	23.95	ug/L		91
18) acrolein	6.770	56	11026	21.79	ug/L		82
19) 1,1-dichloroethene	6.969	96	58556	19.96	ug/L		91
20) acetone	7.000	58	19925	62.68	ug/L		97
21) freon 113	6.985	101	76645	24.23	ug/L		87
23) iodomethane	7.230	142	118088	23.39	ug/L		88
24) carbon disulfide	7.366	76	241278	26.39	ug/L		97
25) methylene chloride	7.738	84	67193	23.96	ug/L		98
26) methyl acetate	7.487	43	34149	21.77	ug/L		79
27) methyl tert butyl ether	8.120	73	397388	47.09	ug/L		95
28) trans-1,2-dichloroethene	8.151	96	58712	21.24	ug/L		96
29) acrylonitrile	8.073	53	22907	24.40	ug/L		92
31) di-isopropyl ether	8.752	45	175987	22.83	ug/L		99
32) 1,1-dichloroethane	8.752	63	101181	23.33	ug/L		96
33) chloroprene	8.847	53	76256	22.58	ug/L		97
35) ethyl tert-butyl ether	9.223	59	395535	50.91	ug/L		99
36) 2-butanone	9.432	72	19387	77.67	ug/L	#	65
38) 2,2-dichloropropane	9.516	77	122946	25.21	ug/L		93
39) cis-1,2-dichloroethene	9.485	96	61760	20.59	ug/L		93
40) methyl acrylate	9.532	85	7074	23.11	ug/L	#	62
41) propionitrile	9.521	54	71603	229.01	ug/L		95
42) bromochloromethane	9.788	128	30188	21.12	ug/L	#	83
43) tetrahydrofuran	9.798	71	5230	18.24	ug/L	#	55
44) chloroform	9.882	85	63961	21.13	ug/L		95
45) t-butyl formate	9.919	59	17781	23.44	ug/L		82
47) methacrylonitrile	9.710	67	18315	21.87	ug/L	#	72
48) 1,1,1-trichloroethane	10.128	97	121346	22.07	ug/L		98
49) cyclohexane	10.233	84	99489	19.30	ug/L	#	62
50) 1,1-dichloropropene	10.301	75	71035	22.73	ug/L		94
51) carbon tetrachloride	10.316	117	106856	21.92	ug/L		96
56) 2,2,4-trimethylpentane	10.651	57	225467	23.37	ug/L		97
57) benzene	10.546	78	212936	23.46	ug/L		95
58) tert-amyl methyl ether	10.646	73	369869	46.42	ug/L		93
59) 1,2-dichloroethane	10.588	62	71501	22.23	ug/L		90
62) trichloroethene	11.289	95	49740	21.47	ug/L		89
63) methyl methacrylate	11.571	69	52705	22.21	ug/L	#	68

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\VN11233\
Data File : n266565.D
Acq On : 12 Dec 2017 10:33 am
Operator : CHELSEAS
Sample : cc11221-20
Misc : MS22984,VN11233,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 13 17:05:25 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration

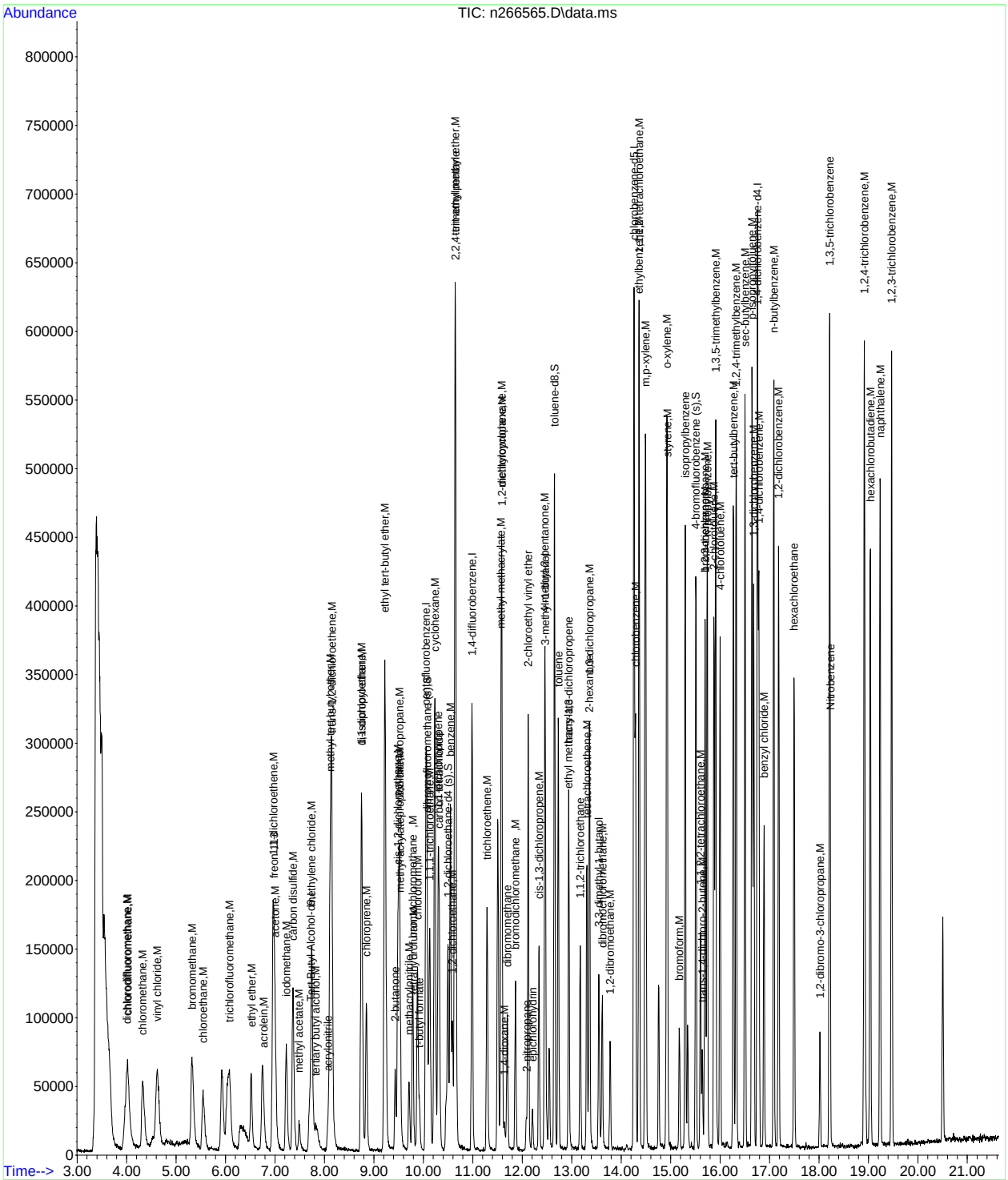
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
64) 1,2-dichloropropane	11.587	63	53176	23.42	ug/L		97
65) methylcyclohexane	11.582	83	118808	20.97	ug/L		96
66) dibromomethane	11.697	93	31968	22.08	ug/L		93
67) bromodichloromethane	11.859	83	71329	22.44	ug/L		97
68) 2-nitropropane	12.089	41	16803	31.36	ug/L		96
69) 2-chloroethyl vinyl ether	12.121	63	119946	123.30	ug/L		99
70) epichlorohydrin	12.210	57	21883	107.01	ug/L		98
71) cis-1,3-dichloropropene	12.340	75	77004	22.10	ug/L		97
72) 4-methyl-2-pentanone	12.455	58	70587	88.60	ug/L		89
73) 3-methyl-1-butanol	12.466	55	50310	407.65	ug/L		88
76) toluene	12.733	92	120865	20.17	ug/L		97
77) ethyl methacrylate	12.937	69	53802	20.46	ug/L		94
78) trans-1,3-dichloropropene	12.942	75	71413	21.86	ug/L		92
79) 1,1,2-trichloroethane	13.172	83	34856	22.18	ug/L	#	84
80) tetrachloroethene	13.308	164	44688	18.54	ug/L		83
81) 2-hexanone	13.355	58	62128	82.55	ug/L		99
82) 1,3-dichloropropane	13.360	76	73556	21.92	ug/L		95
84) 3,3-dimethyl-1-butanol	13.548	57	54929	168.70	ug/L		99
85) dibromochloromethane	13.622	129	53356	20.68	ug/L		95
86) 1,2-dibromoethane	13.779	107	44879	21.77	ug/L		99
87) chlorobenzene	14.291	112	143544	21.33	ug/L		97
88) 1,1,1,2-tetrachloroethane	14.364	131	67781	19.53	ug/L		87
89) ethylbenzene	14.359	91	239407	21.53	ug/L		99
90) m,p-xylene	14.490	106	185111	38.43	ug/L	#	57
91) o-xylene	14.924	106	98177	19.72	ug/L		97
92) styrene	14.934	104	153256	21.64	ug/L		94
94) bromoform	15.175	173	37852	20.08	ug/L		95
95) isopropylbenzene	15.295	105	269936	20.75	ug/L		99
98) bromobenzene	15.698	156	69150	19.93	ug/L		88
99) 1,1,2,2-tetrachloroethane	15.604	83	67334	22.48	ug/L		94
100) trans-1,4-dichloro-2-b...	15.641	53	14460	19.11	ug/L	#	71
101) 1,2,3-trichloropropane	15.698	110	19739	19.95	ug/L		91
102) n-propylbenzene	15.745	120	71240	19.76	ug/L		92
103) 2-chlorotoluene	15.876	126	67903	20.43	ug/L		86
104) 4-chlorotoluene	16.001	126	67145	21.96	ug/L		89
105) 1,3,5-trimethylbenzene	15.913	105	263866	23.07	ug/L		99
106) tert-butylbenzene	16.273	134	52275	18.93	ug/L	#	85
107) 1,2,4-trimethylbenzene	16.326	105	260130	21.89	ug/L		98
108) sec-butylbenzene	16.504	105	339696	22.98	ug/L		98
109) 1,3-dichlorobenzene	16.681	146	153636	20.68	ug/L		95
110) p-isopropyltoluene	16.645	119	294892	22.17	ug/L		98
111) 1,4-dichlorobenzene	16.786	146	156128	20.45	ug/L		98
112) 1,2-dichlorobenzene	17.183	146	162665	20.02	ug/L		99
113) benzyl chloride	16.891	91	147843	20.29	ug/L		99
115) n-butylbenzene	17.089	92	156058	21.57	ug/L		97
116) hexachloroethane	17.497	201	63911	20.06	ug/L		91
117) 1,2-dibromo-3-chloropr...	18.025	157	21302	16.04	ug/L		95
118) Nitrobenzene	18.229	77	4967	12.30	ug/L		93
119) 1,3,5-trichlorobenzene	18.219	180	190316	20.34	ug/L		99
120) 1,2,4-trichlorobenzene	18.920	180	175054	18.84	ug/L		96
121) hexachlorobutadiene	19.040	225	94552	18.74	ug/L		96
122) naphthalene	19.239	128	359401	20.51	ug/L		97
123) 1,2,3-trichlorobenzene	19.469	180	173657	19.66	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\N\VN11233\
Data File : n266565.D
Acq On : 12 Dec 2017 10:33 am
Operator : CHELSEAS
Sample : cc11221-20
Misc : MS22984,VN11233,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 13 17:05:25 2017
Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 01 16:37:26 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266653.d
Acq On : 14 Dec 2017 9:15 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:29:34 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.727	65	96656	300.00	ug/L		0.03
4) pentafluorobenzene	10.054	168	162190	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.985	114	223018	30.00	ug/L		0.00
74) chlorobenzene-d5	14.259	117	216742	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.759	152	160179	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.080	113	83961	33.30	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 111.00%				
54) 1,2-dichloroethane-d4 (s)	10.499	65	90769	33.09	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 110.30%				
75) toluene-d8	12.654	98	277975	29.40	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.00%				
97) 4-bromofluorobenzene (s)	15.509	95	114594	30.89	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.97%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.842	59	33689	102.89	ug/L		75
3) 1,4-dioxane	11.639	88	11754	431.09	ug/L		88
7) chlorodifluoromethane	4.034	51	99293	27.78	ug/L		92
8) dichlorodifluoromethane	3.998	85	108747	18.99	ug/L		98
9) chloromethane	4.327	50	89623	21.36	ug/L		94
10) vinyl chloride	4.625	62	116645	21.50	ug/L		95
12) bromomethane	5.326	94	71560	20.97	ug/L		97
13) chloroethane	5.556	64	65907	22.05	ug/L		88
14) trichlorofluoromethane	6.079	101	131192	21.55	ug/L		98
17) ethyl ether	6.519	59	36926	23.88	ug/L		87
18) acrolein	6.780	56	9625	21.05	ug/L		87
19) 1,1-dichloroethene	6.963	96	50411	19.02	ug/L	#	71
20) acetone	7.000	58	26913	93.67	ug/L		96
21) freon 113	6.989	101	69855	24.44	ug/L		78
23) iodomethane	7.230	142	104959	23.00	ug/L		92
24) carbon disulfide	7.366	76	212260	25.68	ug/L		95
25) methylene chloride	7.748	84	60493	23.87	ug/L		98
26) methyl acetate	7.492	43	30480	21.50	ug/L		93
27) methyl tert butyl ether	8.124	73	360169	47.22	ug/L		98
28) trans-1,2-dichloroethene	8.150	96	51368	20.56	ug/L		88
29) acrylonitrile	8.067	53	20780	24.49	ug/L		98
31) di-isopropyl ether	8.752	45	154739	22.21	ug/L		95
32) 1,1-dichloroethane	8.757	63	90528	23.10	ug/L		100
33) chloroprene	8.851	53	63925	20.95	ug/L		95
35) ethyl tert-butyl ether	9.228	59	341103	48.57	ug/L		99
36) 2-butanone	9.437	72	20863	92.48	ug/L		93
38) 2,2-dichloropropane	9.516	77	109830	24.92	ug/L		94
39) cis-1,2-dichloroethene	9.484	96	54695	20.18	ug/L		89
40) methyl acrylate	9.536	85	6521	23.58	ug/L	#	88
41) propionitrile	9.516	54	61751	218.53	ug/L		85
42) bromochloromethane	9.788	128	28135	21.78	ug/L		87
43) tetrahydrofuran	9.798	71	4979	19.21	ug/L		80
44) chloroform	9.882	85	57144	20.89	ug/L		99
45) t-butyl formate	9.924	59	16086	23.46	ug/L		84
47) methacrylonitrile	9.709	67	15315	20.23	ug/L	#	65
48) 1,1,1-trichloroethane	10.127	97	110887	22.32	ug/L		96
49) cyclohexane	10.232	84	83394	17.90	ug/L	#	50
50) 1,1-dichloropropene	10.300	75	63124	22.35	ug/L		96
51) carbon tetrachloride	10.321	117	93439	21.21	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266653.d
Acq On : 14 Dec 2017 9:15 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:29:34 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56) 2,2,4-trimethylpentane	10.650	57	182870	20.69	ug/L		95
57) benzene	10.551	78	184118	22.14	ug/L		95
58) tert-amyl methyl ether	10.645	73	322266	44.15	ug/L		96
59) 1,2-dichloroethane	10.588	62	62010	21.05	ug/L		97
62) trichloroethene	11.283	95	44052	20.75	ug/L		86
63) methyl methacrylate	11.571	69	44354	20.40	ug/L	#	69
64) 1,2-dichloropropane	11.592	63	47984	23.07	ug/L		90
65) methylcyclohexane	11.581	83	105663	20.36	ug/L		93
66) dibromomethane	11.697	93	27851	20.99	ug/L		85
67) bromodichloromethane	11.864	83	60740	20.86	ug/L		87
68) 2-nitropropane	12.089	41	15091	33.28	ug/L		97
69) 2-chloroethyl vinyl ether	12.120	63	98749	110.80	ug/L		98
70) epichlorohydrin	12.209	57	18086	96.53	ug/L		98
71) cis-1,3-dichloropropene	12.340	75	65476	20.51	ug/L		98
72) 4-methyl-2-pentanone	12.460	58	63684	87.25	ug/L		90
73) 3-methyl-1-butanol	12.465	55	44763	395.89	ug/L		80
76) toluene	12.727	92	110547	19.70	ug/L		97
77) ethyl methacrylate	12.941	69	44315	17.99	ug/L		98
78) trans-1,3-dichloropropene	12.941	75	60161	19.66	ug/L		91
79) 1,1,2-trichloroethane	13.171	83	29983	20.37	ug/L		93
80) tetrachloroethene	13.307	164	40982	18.16	ug/L		88
81) 2-hexanone	13.354	58	55543	78.82	ug/L		92
82) 1,3-dichloropropane	13.365	76	63430	20.18	ug/L		99
84) 3,3-dimethyl-1-butanol	13.548	57	47324	155.22	ug/L		93
85) dibromochloromethane	13.621	129	45785	18.95	ug/L		97
86) 1,2-dibromoethane	13.778	107	38655	20.03	ug/L		95
87) chlorobenzene	14.291	112	125614	19.93	ug/L		97
88) 1,1,1,2-tetrachloroethane	14.364	131	62946	19.37	ug/L		91
89) ethylbenzene	14.359	91	209033	20.08	ug/L		97
90) m,p-xylene	14.495	106	165926	36.78	ug/L	#	59
91) o-xylene	14.918	106	89671	19.24	ug/L		96
92) styrene	14.934	104	134084	20.22	ug/L		88
94) bromoform	15.175	173	32724	18.54	ug/L		94
95) isopropylbenzene	15.300	105	244366	20.06	ug/L		96
98) bromobenzene	15.698	156	63994	19.27	ug/L		94
99) 1,1,2,2-tetrachloroethane	15.609	83	59295	20.68	ug/L		100
100) trans-1,4-dichloro-2-b...	15.640	53	12452	17.19	ug/L		75
101) 1,2,3-trichloropropane	15.692	110	16043	16.94	ug/L		91
102) n-propylbenzene	15.739	120	68112	19.74	ug/L		98
103) 2-chlorotoluene	15.881	126	61491	19.34	ug/L		100
104) 4-chlorotoluene	16.001	126	58637	20.03	ug/L		95
105) 1,3,5-trimethylbenzene	15.912	105	235887	21.55	ug/L		97
106) tert-butylbenzene	16.268	134	47834	18.10	ug/L		95
107) 1,2,4-trimethylbenzene	16.325	105	243111	21.37	ug/L		99
108) sec-butylbenzene	16.503	105	303934	21.49	ug/L		99
109) 1,3-dichlorobenzene	16.681	146	144448	20.32	ug/L		93
110) p-isopropyltoluene	16.644	119	261642	20.55	ug/L		99
111) 1,4-dichlorobenzene	16.785	146	144623	19.80	ug/L		94
112) 1,2-dichlorobenzene	17.188	146	152342	19.59	ug/L		99
113) benzyl chloride	16.890	91	134206	19.24	ug/L		94
115) n-butylbenzene	17.089	92	136450	19.71	ug/L		92
116) hexachloroethane	17.497	201	54327	17.82	ug/L		93
117) 1,2-dibromo-3-chloropr...	18.020	157	19448	15.30	ug/L		84
118) Nitrobenzene	18.234	77	4347	11.25	ug/L	#	78
119) 1,3,5-trichlorobenzene	18.218	180	173521	19.38	ug/L		99
120) 1,2,4-trichlorobenzene	18.919	180	153593	17.27	ug/L		94
121) hexachlorobutadiene	19.040	225	79578	16.48	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266653.d
Acq On : 14 Dec 2017 9:15 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:29:34 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

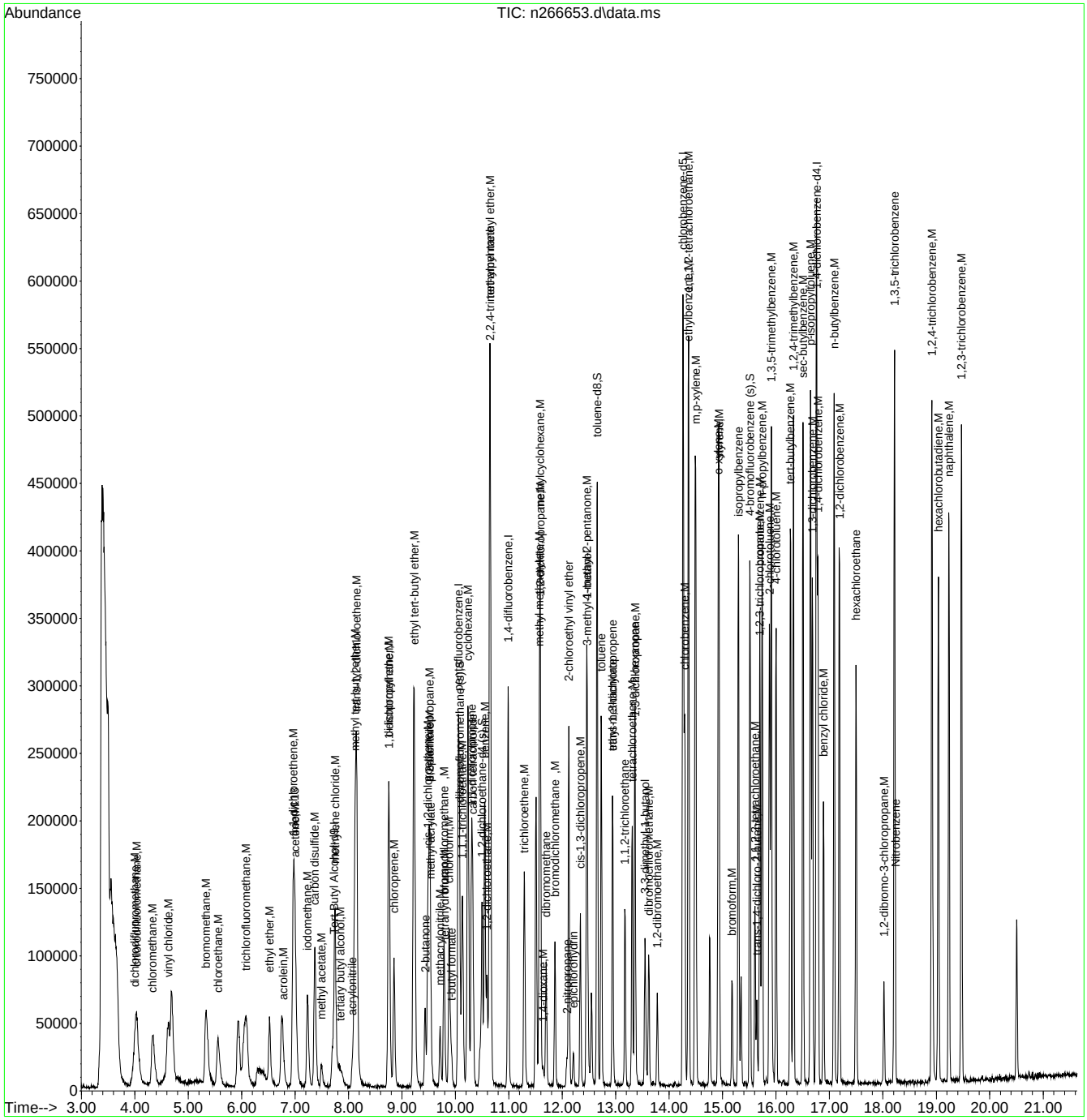
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
122) naphthalene	19.238	128	310278	18.50	ug/L	98
123) 1,2,3-trichlorobenzene	19.468	180	151467	17.91	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11237\
Data File : n266653.d
Acq On : 14 Dec 2017 9:15 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11237,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 18 00:29:34 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266697.d
Acq On : 15 Dec 2017 8:15 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23129,VN11239,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:18:57 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.716	65	86918	300.00	ug/L		0.02
4) pentafluorobenzene	10.054	168	153628	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.985	114	215048	30.00	ug/L		0.00
74) chlorobenzene-d5	14.254	117	208105	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.754	152	158654	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.075	113	75278	31.52	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 105.07%				
54) 1,2-dichloroethane-d4 (s)	10.499	65	85550	32.35	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 107.83%				
75) toluene-d8	12.654	98	264477	29.13	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.10%				
97) 4-bromofluorobenzene (s)	15.509	95	110456	30.06	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.20%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.837	59	30710	104.30	ug/L		88
3) 1,4-dioxane	11.639	88	12123	494.44	ug/L		78
7) chlorodifluoromethane	4.024	51	121622	35.93	ug/L		96
8) dichlorodifluoromethane	4.003	85	110168	20.31	ug/L		93
9) chloromethane	4.348	50	97445	24.52	ug/L		98
10) vinyl chloride	4.625	62	116881	22.75	ug/L		93
11) 1,3-butadiene	4.688	54	74614	25.63	ug/L	#	71
12) bromomethane	5.342	94	77787	24.06	ug/L		85
13) chloroethane	5.551	64	64197	22.68	ug/L		90
14) trichlorofluoromethane	6.058	101	119521	20.73	ug/L		93
17) ethyl ether	6.513	59	35849	24.48	ug/L		94
18) acrolein	6.775	56	9392	21.68	ug/L		93
19) 1,1-dichloroethene	6.958	96	54442	21.68	ug/L		99
20) acetone	6.984	58	16654	61.19	ug/L	#	58
21) freon 113	6.989	101	76482	28.25	ug/L		87
23) iodomethane	7.230	142	108655	25.14	ug/L		93
24) carbon disulfide	7.366	76	219631	28.06	ug/L		96
25) methylene chloride	7.742	84	62915	26.21	ug/L		98
26) methyl acetate	7.486	43	28995	21.59	ug/L		88
27) methyl tert butyl ether	8.119	73	174351	24.13	ug/L		96
28) trans-1,2-dichloroethene	8.150	96	53435	22.58	ug/L		92
29) acrylonitrile	8.067	53	18631	23.18	ug/L		87
31) di-isopropyl ether	8.747	45	169748	25.72	ug/L		98
32) 1,1-dichloroethane	8.752	63	89783	24.18	ug/L		96
33) chloroprene	8.846	53	68828	23.81	ug/L		92
35) ethyl tert-butyl ether	9.217	59	164973	24.80	ug/L		95
36) 2-butanone	9.432	72	16276	76.17	ug/L	#	59
38) 2,2-dichloropropane	9.510	77	112295	26.90	ug/L		96
39) cis-1,2-dichloroethene	9.479	96	54991	21.42	ug/L		91
40) methyl acrylate	9.531	85	5249	20.03	ug/L	#	55
41) propionitrile	9.515	54	68183	254.74	ug/L		90
42) bromochloromethane	9.782	128	28831	23.57	ug/L	#	78
43) tetrahydrofuran	9.793	71	4886	19.90	ug/L	#	44
44) chloroform	9.882	85	57559	22.21	ug/L		90
45) t-butyl formate	9.913	59	16658	25.65	ug/L		97
47) methacrylonitrile	9.714	67	16596	23.15	ug/L		76
48) 1,1,1-trichloroethane	10.122	97	111452	23.68	ug/L		95
49) cyclohexane	10.227	84	86413	19.58	ug/L	#	75
50) 1,1-dichloropropene	10.300	75	62697	23.43	ug/L		90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266697.d
Acq On : 15 Dec 2017 8:15 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23129,VN11239,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:18:57 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	carbon tetrachloride	10.321	117	102258	24.50	ug/L		97
56)	2,2,4-trimethylpentane	10.650	57	188524	22.12	ug/L		93
57)	benzene	10.546	78	189985	23.69	ug/L		92
58)	tert-amyl methyl ether	10.640	73	161370	22.93	ug/L		94
59)	1,2-dichloroethane	10.588	62	66373	23.36	ug/L		88
62)	trichloroethene	11.283	95	44539	21.76	ug/L		91
63)	methyl methacrylate	11.571	69	44467	21.21	ug/L		80
64)	1,2-dichloropropane	11.592	63	48568	24.21	ug/L		90
65)	methylcyclohexane	11.581	83	110967	22.17	ug/L		97
66)	dibromomethane	11.702	93	29719	23.23	ug/L		82
67)	bromodichloromethane	11.859	83	62312	22.19	ug/L		90
68)	2-nitropropane	12.089	41	15029	34.37	ug/L		78
69)	2-chloroethyl vinyl ether	12.120	63	107523	125.12	ug/L		97
70)	epichlorohydrin	12.204	57	17816	98.61	ug/L		98
71)	cis-1,3-dichloropropene	12.335	75	69300	22.51	ug/L		99
72)	4-methyl-2-pentanone	12.460	58	63525	90.26	ug/L	#	85
73)	3-methyl-1-butanol	12.470	55	45487	417.21	ug/L		98
76)	toluene	12.727	92	114526	21.26	ug/L		88
77)	ethyl methacrylate	12.941	69	46754	19.77	ug/L		88
78)	trans-1,3-dichloropropene	12.941	75	64717	22.03	ug/L		96
79)	1,1,2-trichloroethane	13.171	83	31815	22.51	ug/L		89
80)	tetrachloroethene	13.307	164	42230	19.49	ug/L		89
81)	2-hexanone	13.354	58	53700	79.36	ug/L		96
82)	1,3-dichloropropane	13.365	76	66783	22.13	ug/L		97
84)	3,3-dimethyl-1-butanol	13.548	57	49041	167.53	ug/L		96
85)	dibromochloromethane	13.616	129	49439	21.31	ug/L		94
86)	1,2-dibromoethane	13.778	107	39090	21.09	ug/L		88
87)	chlorobenzene	14.291	112	135760	22.43	ug/L		99
88)	1,1,1,2-tetrachloroethane	14.364	131	64157	20.57	ug/L		92
89)	ethylbenzene	14.359	91	226096	22.62	ug/L		99
90)	m,p-xylene	14.489	106	174880	40.38	ug/L	#	54
91)	o-xylene	14.918	106	93780	20.96	ug/L		88
92)	styrene	14.934	104	144961	22.76	ug/L		95
94)	bromoform	15.174	173	34857	20.57	ug/L		97
95)	isopropylbenzene	15.295	105	256531	21.93	ug/L		98
98)	bromobenzene	15.698	156	65954	20.05	ug/L		89
99)	1,1,2,2-tetrachloroethane	15.603	83	61316	21.59	ug/L		94
100)	trans-1,4-dichloro-2-b...	15.640	53	13656	19.04	ug/L		83
101)	1,2,3-trichloropropane	15.692	110	18530	19.75	ug/L		98
102)	n-propylbenzene	15.739	120	70642	20.67	ug/L	#	85
103)	2-chlorotoluene	15.875	126	66751	21.19	ug/L		95
104)	4-chlorotoluene	16.001	126	64849	22.37	ug/L		98
105)	1,3,5-trimethylbenzene	15.912	105	247783	22.86	ug/L		98
106)	tert-butylbenzene	16.268	134	49911	19.06	ug/L		92
107)	1,2,4-trimethylbenzene	16.325	105	258177	22.92	ug/L		98
108)	sec-butylbenzene	16.503	105	322988	23.05	ug/L		99
109)	1,3-dichlorobenzene	16.681	146	155565	22.09	ug/L		98
110)	p-isopropyltoluene	16.644	119	290453	23.04	ug/L		97
111)	1,4-dichlorobenzene	16.785	146	152541	21.08	ug/L		96
112)	1,2-dichlorobenzene	17.183	146	159581	20.72	ug/L		97
113)	benzyl chloride	16.890	91	138841	20.10	ug/L		99
115)	n-butylbenzene	17.089	92	150859	22.00	ug/L		94
116)	hexachloroethane	17.497	201	54047	17.89	ug/L		95
117)	1,2-dibromo-3-chloropr...	18.020	157	19384	15.39	ug/L	#	69
118)	Nitrobenzene	18.234	77	5079	13.27	ug/L		84
119)	1,3,5-trichlorobenzene	18.218	180	187472	21.14	ug/L		100
120)	1,2,4-trichlorobenzene	18.914	180	162323	18.43	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266697.d
Acq On : 15 Dec 2017 8:15 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23129,VN11239,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:18:57 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

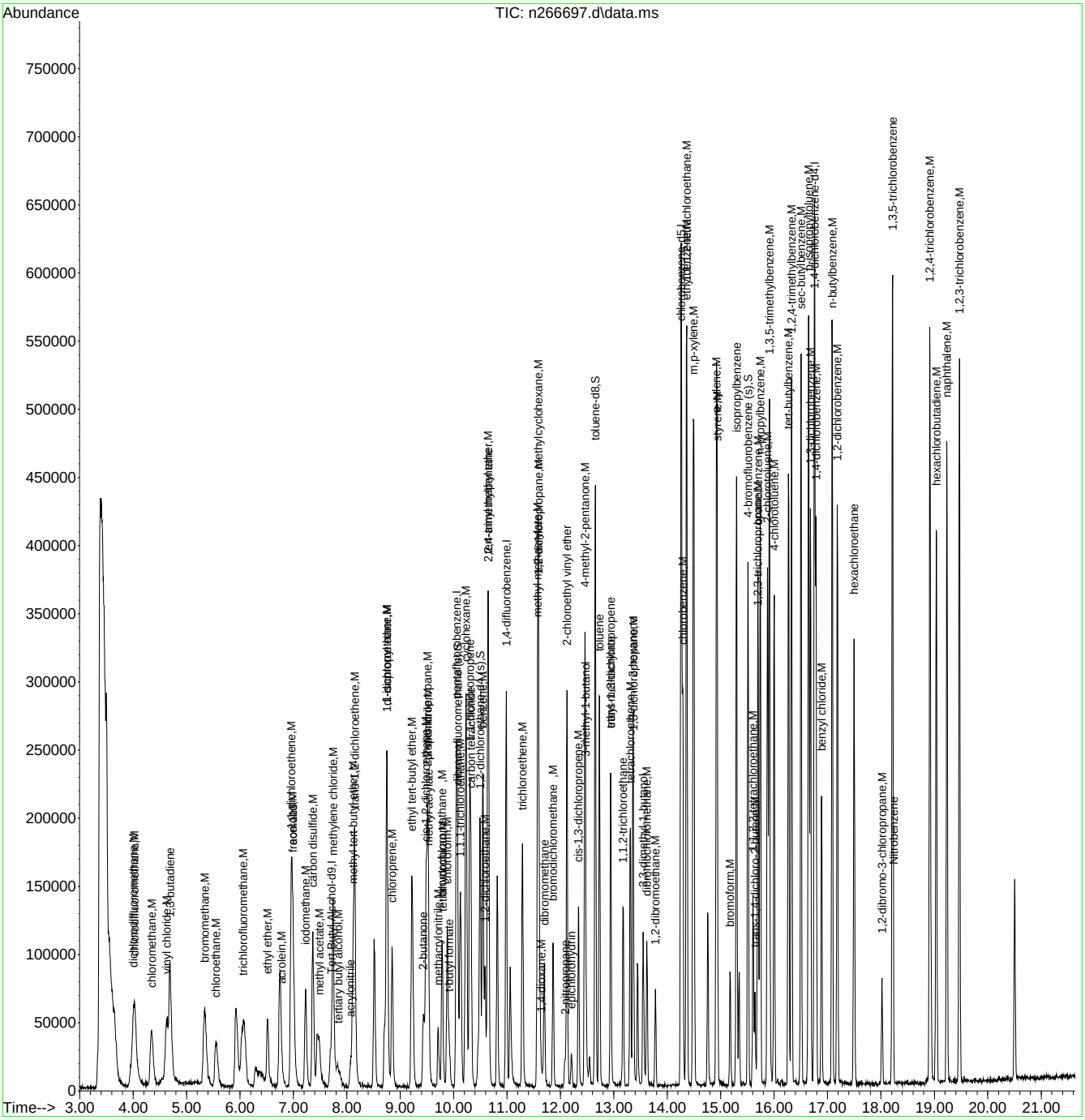
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) hexachlorobutadiene	19.034	225	87198	18.23	ug/L	94
122) naphthalene	19.233	128	331602	19.96	ug/L	98
123) 1,2,3-trichlorobenzene	19.468	180	155376	18.55	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11239\
Data File : n266697.d
Acq On : 15 Dec 2017 8:15 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23129,VN11239,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 19 02:18:57 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266749.d
Acq On : 18 Dec 2017 9:36 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:25:09 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.708	65	78904	300.00	ug/L		0.01
4) pentafluorobenzene	10.056	168	156774	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.982	114	212949	30.00	ug/L		0.00
74) chlorobenzene-d5	14.256	117	196045	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.756	152	142557	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.077	113	75485	30.97	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.23%				
54) 1,2-dichloroethane-d4 (s)	10.496	65	83558	31.90	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 106.33%				
75) toluene-d8	12.651	98	248864	29.10	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.00%				
97) 4-bromofluorobenzene (s)	15.511	95	102532	31.05	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.50%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.823	59	24188	90.49	ug/L		95
3) 1,4-dioxane	11.636	88	9455	424.79	ug/L		92
5) freon 143a	3.686	69	78397	16.56	ug/L		90
6) freon 142b	4.277	65	88053	20.24	ug/L		98
7) chlorodifluoromethane	4.026	51	97133	28.12	ug/L		94
8) dichlorodifluoromethane	4.016	85	87437	15.80	ug/L		94
9) chloromethane	4.335	50	86027	21.21	ug/L		96
10) vinyl chloride	4.638	62	104220	19.88	ug/L		94
12) bromomethane	5.334	94	67034	20.32	ug/L		94
13) chloroethane	5.548	64	56074	19.41	ug/L		90
14) trichlorofluoromethane	6.087	101	115228	19.58	ug/L		97
16) freon 141b	6.557	81	83736	19.66	ug/L		90
17) ethyl ether	6.516	59	31564	21.12	ug/L		89
18) acrolein	6.767	56	7110	16.08	ug/L		95
19) 1,1-dichloroethene	6.965	96	49959	19.50	ug/L		94
20) acetone	6.986	58	14789	53.25	ug/L	#	63
21) freon 113	6.976	101	60519	21.90	ug/L		81
23) iodomethane	7.232	142	90920	20.61	ug/L		90
24) carbon disulfide	7.363	76	187665	23.49	ug/L		97
25) methylene chloride	7.745	84	53055	21.66	ug/L		97
26) methyl acetate	7.488	43	24888	18.16	ug/L		74
27) methyl tert butyl ether	8.132	73	147834	20.05	ug/L		100
28) trans-1,2-dichloroethene	8.142	96	44066	18.25	ug/L		97
29) acrylonitrile	8.069	53	15002	18.29	ug/L		89
31) di-isopropyl ether	8.749	45	137836	20.47	ug/L		94
32) 1,1-dichloroethane	8.754	63	76089	20.08	ug/L		89
33) chloroprene	8.848	53	56536	19.17	ug/L		100
35) ethyl tert-butyl ether	9.225	59	139359	20.53	ug/L		96
36) 2-butanone	9.434	72	15464	70.91	ug/L		90
38) 2,2-dichloropropane	9.512	77	96804	22.73	ug/L		94
39) cis-1,2-dichloroethene	9.486	96	47694	18.20	ug/L		95
40) methyl acrylate	9.539	85	4677	17.49	ug/L		90
41) propionitrile	9.518	54	55968	204.91	ug/L		94
42) bromochloromethane	9.784	128	24028	19.25	ug/L	#	79
43) tetrahydrofuran	9.795	71	3886	15.51	ug/L	#	74
44) chloroform	9.879	85	50225	18.99	ug/L		95
45) t-butyl formate	9.915	59	13158	19.85	ug/L		77
47) methacrylonitrile	9.711	67	12521	17.11	ug/L	#	66
48) 1,1,1-trichloroethane	10.124	97	97996	20.40	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266749.d
Acq On : 18 Dec 2017 9:36 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:25:09 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) cyclohexane	10.229	84	76588	17.01	ug/L	#	71
50) 1,1-dichloropropene	10.297	75	52874	19.36	ug/L		89
51) carbon tetrachloride	10.318	117	85532	20.08	ug/L		92
56) 2,2,4-trimethylpentane	10.647	57	154001	18.25	ug/L		98
57) benzene	10.548	78	158706	19.99	ug/L		94
58) tert-amyl methyl ether	10.642	73	134867	19.35	ug/L		93
59) 1,2-dichloroethane	10.590	62	52732	18.74	ug/L		93
62) trichloroethene	11.285	95	38911	19.20	ug/L		88
63) methyl methacrylate	11.568	69	37953	18.28	ug/L		96
64) 1,2-dichloropropane	11.589	63	39779	20.03	ug/L		95
65) methylcyclohexane	11.584	83	91370	18.44	ug/L		93
66) dibromomethane	11.699	93	25120	19.83	ug/L		88
67) bromodichloromethane	11.861	83	53793	19.35	ug/L		84
68) 2-nitropropane	12.080	41	12809	29.58	ug/L		91
69) 2-chloroethyl vinyl ether	12.122	63	86084	101.16	ug/L		98
70) epichlorohydrin	12.206	57	15555	86.95	ug/L		97
71) cis-1,3-dichloropropene	12.337	75	58077	19.05	ug/L		100
72) 4-methyl-2-pentanone	12.457	58	51132	73.37	ug/L		97
73) 3-methyl-1-butanol	12.467	55	39040	361.60	ug/L		96
76) toluene	12.729	92	94134	18.55	ug/L		96
77) ethyl methacrylate	12.938	69	38107	17.11	ug/L		89
78) trans-1,3-dichloropropene	12.943	75	52719	19.05	ug/L		89
79) 1,1,2-trichloroethane	13.174	83	26016	19.54	ug/L		90
80) tetrachloroethene	13.304	164	35026	17.16	ug/L		92
81) 2-hexanone	13.357	58	40220	63.10	ug/L		92
82) 1,3-dichloropropane	13.362	76	51996	18.29	ug/L		93
84) 3,3-dimethyl-1-butanol	13.545	57	40942	148.47	ug/L		91
85) dibromochloromethane	13.618	129	39100	17.89	ug/L		95
86) 1,2-dibromoethane	13.775	107	33123	18.97	ug/L		95
87) chlorobenzene	14.288	112	110385	19.36	ug/L		95
88) 1,1,1,2-tetrachloroethane	14.366	131	53879	18.33	ug/L		81
89) ethylbenzene	14.361	91	185969	19.75	ug/L		97
90) m,p-xylene	14.486	106	147618	36.18	ug/L	#	63
91) o-xylene	14.920	106	76868	18.23	ug/L		97
92) styrene	14.931	104	115327	19.22	ug/L		97
94) bromoform	15.171	173	28921	18.12	ug/L		91
95) isopropylbenzene	15.297	105	209006	18.97	ug/L		97
98) bromobenzene	15.700	156	55846	18.90	ug/L		99
99) 1,1,2,2-tetrachloroethane	15.606	83	49042	19.22	ug/L		96
101) 1,2,3-trichloropropane	15.694	110	13750	16.31	ug/L		90
102) n-propylbenzene	15.742	120	59260	19.29	ug/L		94
103) 2-chlorotoluene	15.878	126	55017	19.44	ug/L		94
104) 4-chlorotoluene	15.998	126	51903	19.93	ug/L		86
105) 1,3,5-trimethylbenzene	15.909	105	209040	21.46	ug/L		94
106) tert-butylbenzene	16.270	134	40379	17.16	ug/L	#	88
107) 1,2,4-trimethylbenzene	16.322	105	209428	20.69	ug/L		95
108) sec-butylbenzene	16.505	105	263954	20.97	ug/L		98
109) 1,3-dichlorobenzene	16.678	146	124703	19.71	ug/L		94
110) p-isopropyltoluene	16.646	119	232461	20.52	ug/L		97
111) 1,4-dichlorobenzene	16.782	146	120549	18.54	ug/L		92
112) 1,2-dichlorobenzene	17.185	146	134681	19.46	ug/L		97
113) benzyl chloride	16.887	91	112252	18.08	ug/L		96
115) n-butylbenzene	17.086	92	130190	21.13	ug/L		95
116) hexachloroethane	17.494	201	47363	17.45	ug/L		93
117) 1,2-dibromo-3-chloropr...	18.022	157	16718	14.78	ug/L		94
118) Nitrobenzene	18.236	77	4707	13.69	ug/L	#	66
119) 1,3,5-trichlorobenzene	18.215	180	151955	19.07	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266749.d
Acq On : 18 Dec 2017 9:36 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:25:09 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
120) 1,2,4-trichlorobenzene	18.916	180	131956	16.67	ug/L	95
121) hexachlorobutadiene	19.037	225	74330	17.30	ug/L	96
122) naphthalene	19.235	128	252414	16.91	ug/L	95
123) 1,2,3-trichlorobenzene	19.471	180	125852	16.72	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

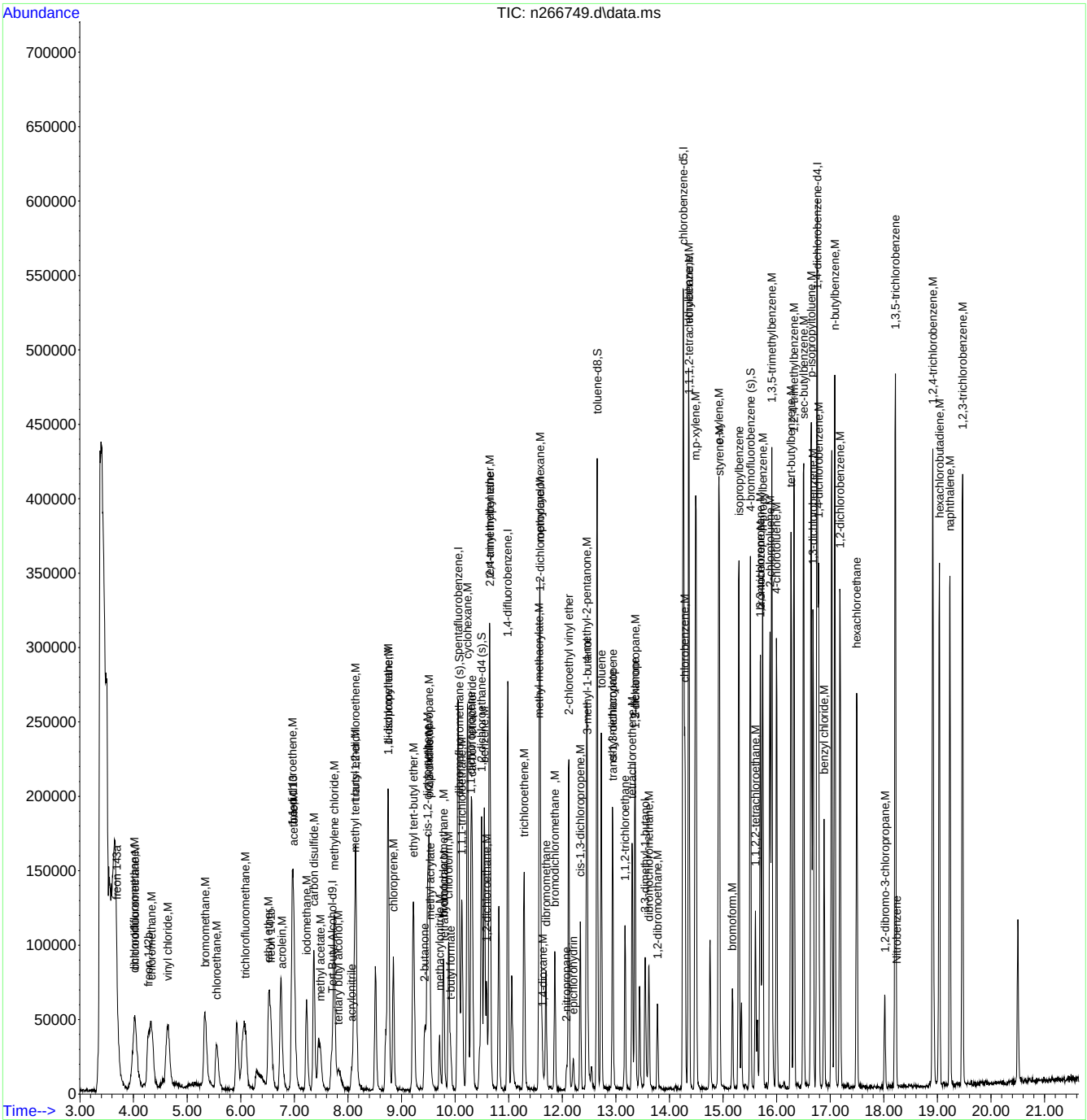
7.7.15

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11241\
Data File : n266749.d
Acq On : 18 Dec 2017 9:36 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23092,VN11241,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 20 00:25:09 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



MN11221.M Wed Dec 20 02:00:49 2017 Page: 4

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266798.d
Acq On : 19 Dec 2017 11:04 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:29:34 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.700	65	89064	300.00	ug/L		0.00
4) pentafluorobenzene	10.054	168	152143	30.00	ug/L		0.00
53) 1,4-difluorobenzene	10.985	114	212452	30.00	ug/L		0.00
74) chlorobenzene-d5	14.253	117	199279	30.00	ug/L		0.00
96) 1,4-dichlorobenzene-d4	16.753	152	135997	30.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	10.075	113	74651	31.56	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 105.20%				
54) 1,2-dichloroethane-d4 (s)	10.498	65	84902	32.49	ug/L		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 108.30%				
75) toluene-d8	12.653	98	255644	29.41	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.03%				
97) 4-bromofluorobenzene (s)	15.509	95	103956	33.00	ug/L		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.00%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.836	59	29954	99.28	ug/L		90
3) 1,4-dioxane	11.638	88	9697	385.96	ug/L		84
7) chlorodifluoromethane	4.029	51	92989	27.74	ug/L		93
8) dichlorodifluoromethane	4.013	85	91808	17.09	ug/L		94
9) chloromethane	4.337	50	95758	24.33	ug/L		93
10) vinyl chloride	4.635	62	122842	24.14	ug/L		96
12) bromomethane	5.326	94	69452	21.69	ug/L		90
13) chloroethane	5.545	64	61263	21.85	ug/L		90
14) trichlorofluoromethane	6.079	101	122276	21.41	ug/L		93
17) ethyl ether	6.523	59	34416	23.73	ug/L		83
18) acrolein	6.785	56	8288	19.32	ug/L		88
19) 1,1-dichloroethene	6.968	96	47877	19.25	ug/L	#	75
20) acetone	6.999	58	15336	56.90	ug/L		92
21) freon 113	6.994	101	63049	23.51	ug/L		86
23) iodomethane	7.235	142	97298	22.73	ug/L		95
24) carbon disulfide	7.365	76	198412	25.59	ug/L		94
25) methylene chloride	7.747	84	55356	23.28	ug/L		95
26) methyl acetate	7.486	43	27087	20.37	ug/L		95
27) methyl tert butyl ether	8.129	73	324531	45.36	ug/L		98
28) trans-1,2-dichloroethene	8.150	96	45139	19.26	ug/L		96
29) acrylonitrile	8.071	53	18907	23.75	ug/L		84
31) di-isopropyl ether	8.751	45	155283	23.76	ug/L		97
32) 1,1-dichloroethane	8.757	63	84144	22.89	ug/L		95
33) chloroprene	8.851	53	68214	23.83	ug/L		97
35) ethyl tert-butyl ether	9.222	59	326281	49.53	ug/L		97
36) 2-butanone	9.431	72	15043	71.08	ug/L	#	71
38) 2,2-dichloropropane	9.520	77	96539	23.35	ug/L		96
39) cis-1,2-dichloroethene	9.484	96	50264	19.77	ug/L		87
40) methyl acrylate	9.531	85	5590	21.54	ug/L		96
41) propionitrile	9.520	54	52655	198.65	ug/L		93
42) bromochloromethane	9.782	128	22776	18.80	ug/L	#	64
43) tetrahydrofuran	9.797	71	4330	17.81	ug/L	#	65
44) chloroform	9.886	85	52359	20.40	ug/L		97
45) t-butyl formate	9.918	59	16015	24.90	ug/L	#	68
47) methacrylonitrile	9.714	67	14409	20.29	ug/L	#	60
48) 1,1,1-trichloroethane	10.127	97	97538	20.93	ug/L		98
49) cyclohexane	10.232	84	82345	18.84	ug/L	#	52
50) 1,1-dichloropropene	10.300	75	57705	21.78	ug/L		91
51) carbon tetrachloride	10.315	117	85446	20.67	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266798.d
Acq On : 19 Dec 2017 11:04 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:29:34 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56) 2,2,4-trimethylpentane	10.650	57	190005	22.56	ug/L		98
57) benzene	10.545	78	167019	21.08	ug/L		98
58) tert-amyl methyl ether	10.650	73	301614	43.37	ug/L		100
59) 1,2-dichloroethane	10.587	62	54828	19.53	ug/L		97
62) trichloroethene	11.283	95	41629	20.59	ug/L		82
63) methyl methacrylate	11.570	69	43138	20.83	ug/L		81
64) 1,2-dichloropropane	11.591	63	43772	22.09	ug/L		75
65) methylcyclohexane	11.581	83	98197	19.86	ug/L		98
66) dibromomethane	11.696	93	23573	18.65	ug/L		94
67) bromodichloromethane	11.858	83	55768	20.10	ug/L		89
68) 2-nitropropane	12.083	41	13162	30.47	ug/L		94
69) 2-chloroethyl vinyl ether	12.120	63	93323	109.92	ug/L		98
70) epichlorohydrin	12.209	57	16335	91.52	ug/L		94
71) cis-1,3-dichloropropene	12.334	75	62299	20.48	ug/L		96
72) 4-methyl-2-pentanone	12.454	58	56544	81.32	ug/L	#	83
73) 3-methyl-1-butanol	12.470	55	41175	382.27	ug/L		90
76) toluene	12.726	92	95840	18.58	ug/L		96
77) ethyl methacrylate	12.941	69	44315	19.57	ug/L		93
78) trans-1,3-dichloropropene	12.941	75	55215	19.63	ug/L		96
79) 1,1,2-trichloroethane	13.171	83	27092	20.02	ug/L		89
80) tetrachloroethene	13.302	164	35235	16.98	ug/L		93
81) 2-hexanone	13.354	58	50568	78.05	ug/L		94
82) 1,3-dichloropropane	13.364	76	56151	19.43	ug/L		91
84) 3,3-dimethyl-1-butanol	13.547	57	46998	167.66	ug/L		94
85) dibromochloromethane	13.615	129	38910	17.52	ug/L		96
86) 1,2-dibromoethane	13.778	107	33583	18.92	ug/L		94
87) chlorobenzene	14.290	112	109451	18.89	ug/L		96
88) 1,1,1,2-tetrachloroethane	14.363	131	51552	17.26	ug/L		93
89) ethylbenzene	14.358	91	195964	20.47	ug/L		99
90) m,p-xylene	14.489	106	147133	35.48	ug/L	#	45
91) o-xylene	14.918	106	82752	19.31	ug/L		97
92) styrene	14.933	104	122027	20.01	ug/L		97
94) bromoform	15.179	173	27018	16.65	ug/L		88
95) isopropylbenzene	15.294	105	227649	20.32	ug/L		97
98) bromobenzene	15.697	156	52679	18.68	ug/L		88
99) 1,1,2,2-tetrachloroethane	15.603	83	50685	20.82	ug/L		96
100) trans-1,4-dichloro-2-b...	15.639	53	9652	15.70	ug/L		85
101) 1,2,3-trichloropropane	15.692	110	15566	19.36	ug/L		94
102) n-propylbenzene	15.739	120	60613	20.69	ug/L		95
103) 2-chlorotoluene	15.875	126	54462	20.17	ug/L		92
104) 4-chlorotoluene	16.000	126	51885	20.88	ug/L		92
105) 1,3,5-trimethylbenzene	15.911	105	205570	22.12	ug/L		97
106) tert-butylbenzene	16.267	134	40257	17.94	ug/L	#	79
107) 1,2,4-trimethylbenzene	16.325	105	210986	21.85	ug/L		98
108) sec-butylbenzene	16.502	105	271324	22.59	ug/L		96
109) 1,3-dichlorobenzene	16.680	146	117855	19.52	ug/L		99
110) p-isopropyltoluene	16.644	119	237646	21.99	ug/L		100
111) 1,4-dichlorobenzene	16.785	146	120366	19.41	ug/L		91
112) 1,2-dichlorobenzene	17.182	146	123350	18.68	ug/L		95
113) benzyl chloride	16.889	91	115452	19.50	ug/L		95
115) n-butylbenzene	17.083	92	132713	22.58	ug/L		93
116) hexachloroethane	17.496	201	44152	17.05	ug/L		94
117) 1,2-dibromo-3-chloropr...	18.019	157	15696	14.54	ug/L		85
118) Nitrobenzene	18.234	77	3872	11.80	ug/L	#	76
119) 1,3,5-trichlorobenzene	18.218	180	142841	18.79	ug/L		97
120) 1,2,4-trichlorobenzene	18.914	180	122750	16.26	ug/L		97
121) hexachlorobutadiene	19.034	225	66185	16.15	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266798.d
Acq On : 19 Dec 2017 11:04 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:29:34 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration

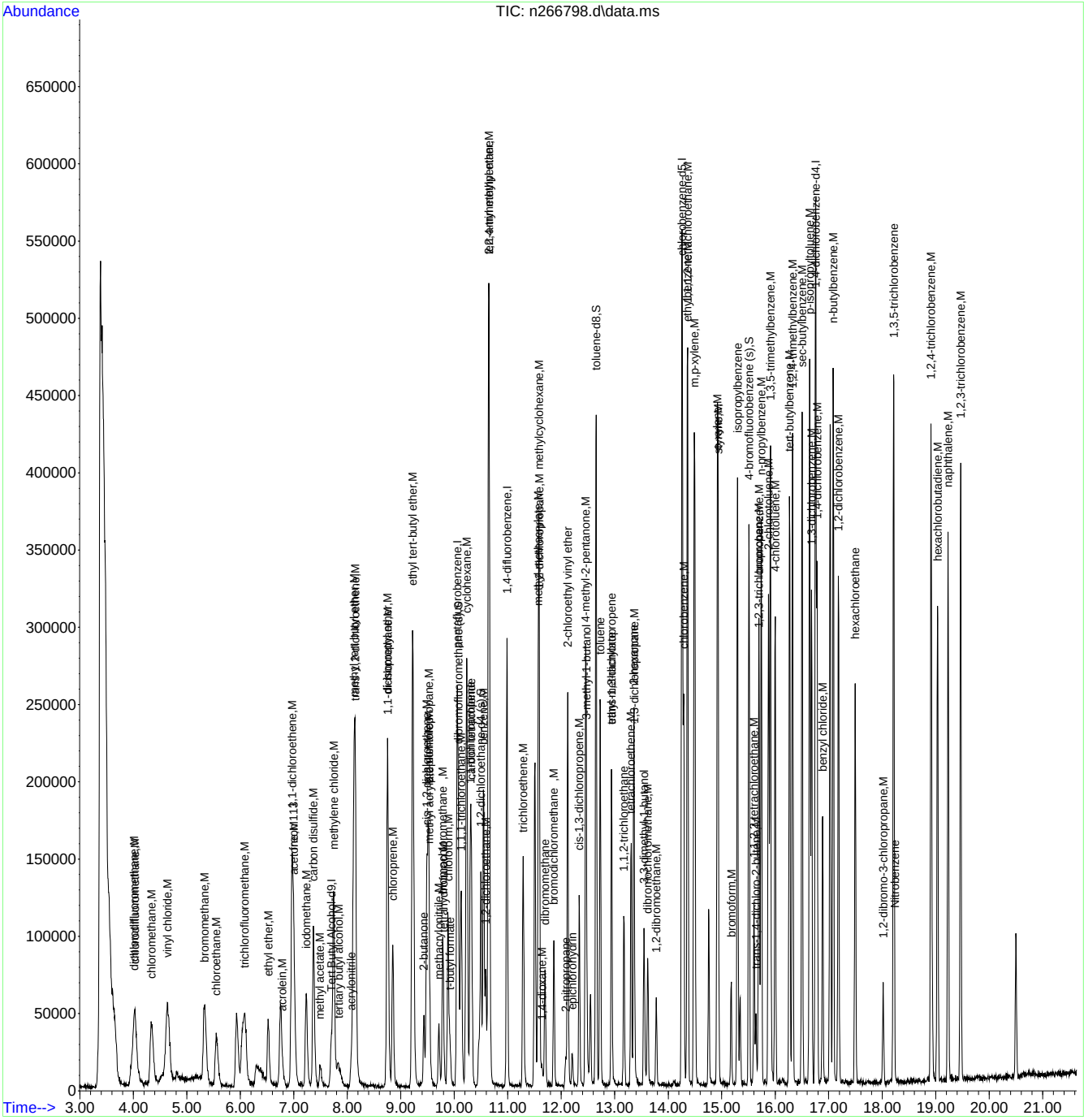
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
122) naphthalene	19.233	128	250087	17.56	ug/L	97
123) 1,2,3-trichlorobenzene	19.468	180	116437	16.22	ug/L	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vn11243\
Data File : n266798.d
Acq On : 19 Dec 2017 11:04 am
Operator : CHELSEAS
Sample : cc11221-20 Inst : GCMSN
Misc : MS23069,VN11243,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MN11221.M
Quant Results File: MN11221.RES
Quant Time: Dec 21 01:29:34 2017
Quant Title : EPA 624, ZB624 60m x 0.25mm x 1.4um
QLast Update : Tue Dec 05 09:25:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227848.D
Acq On : 9 Nov 2017 12:42 am
Operator : CHELSEAS
Sample : ic9358-0.5
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 09 08:56:36 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.430	65	70298	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.465	168	134218	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.323	114	187028	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.529	117	182254	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.071	152	113782	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.507	113	55847	25.01	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 83.37%				
50) 1,2-DICHLOROETHANE-d4	9.909	65	54716	24.59	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 81.97%				
67) TOLUENE-d8	11.944	98	226383	29.17	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.23%				
90) 4-BROMOFLUOROBENZENE	14.784	174	79630	29.18	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.27%				
Target Compounds							Qvalue
6) DICHLORODIFLUOROMETHANE	4.360	85	2089	0.48	PPb		89
7) FREON 143A	4.020	69	2199	0.42	PPB		90
10) VINYL CHLORIDE	4.930	62	2075	0.44	PPb		92
11) BROMOMETHANE	5.563	96	1341	0.46	PPb	#	76
14) TRICHLOROFLUOROMETHANE	6.159	101	1577	0.39	PPb		68
16) FREON 141B	6.526	81	1317	0.36	PPB	#	33
17) ETHYL ETHER	6.515	74	560	0.51	PPB		85
18) 1,1-DICHLOROETHYLENE	6.907	61	1747	0.52	PPb		91
19) FREON 113	6.892	151	1229	0.63	PPb	#	73
23) IODOMETHANE	7.148	142	1973	0.50	PPb	#	96
26) METHYLENE CHLORIDE	7.504	84	1474	0.64	PPb		98
28) METHYL TERT BUTYL ETHER	7.828	73	4014	0.55	PPb		94
29) trans-1,2-DICHLOROETHY...	7.849	61	1681	0.53	PPb		75
31) 1,1-DICHLOROETHANE	8.356	63	2150	0.53	PPb		98
33) DI-ISOPROPYL ETHER	8.340	45	4530	0.52	PPb		81
34) ETHYL TERT BUTYL ETHER	8.759	59	3824	0.49	PPb		94
36) cis-1,2-DICHLOROETHYLENE	9.010	96	1366	0.55	PPb	#	58
37) 2,2-DICHLOROPROPANE	9.036	77	2104	0.50	PPB	#	76
39) BROMOCHLOROMETHANE	9.277	128	450	0.39	PPB	#	66
41) CHLOROFORM	9.324	83	1752	0.46	PPb		96
43) 1,1,1-TRICHLOROETHANE	9.601	97	1921	0.47	PPb		86
46) 1,1-DICHLOROPROPENE	9.758	75	1510	0.53	PPB		93
47) CARBON TETRACHLORIDE	9.794	117	1637	0.44	PPB		89
51) BENZENE	10.009	78	4984	0.61	PPb		87
52) 1,2-DICHLOROETHANE	9.993	62	1141	0.44	PPb		84
55) HEPTANE	10.166	57	877	0.63	PPb		94
56) TRICHLOROETHYLENE	10.657	95	980	0.53	PPb		89
57) 1,2-DICHLOROPROPANE	10.919	63	1241	0.57	PPb		96
60) METHYLCYCLOHEXANE	10.908	83	2586	0.59	PPB		83
61) BROMODICHLOROMETHANE	11.175	83	1371	0.51	PPb		86
64) cis-1,3-DICHLOROPROPENE	11.630	75	1803	0.56	PPb		85
65) 4-METHYL-2-PENTANONE	11.730	58	1551	2.24	PPb	#	69
68) TOLUENE	12.017	92	2911	0.59	PPB		95

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227848.D
Acq On : 9 Nov 2017 12:42 am
Operator : CHELSEAS
Sample : ic9358-0.5
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 09 08:56:36 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

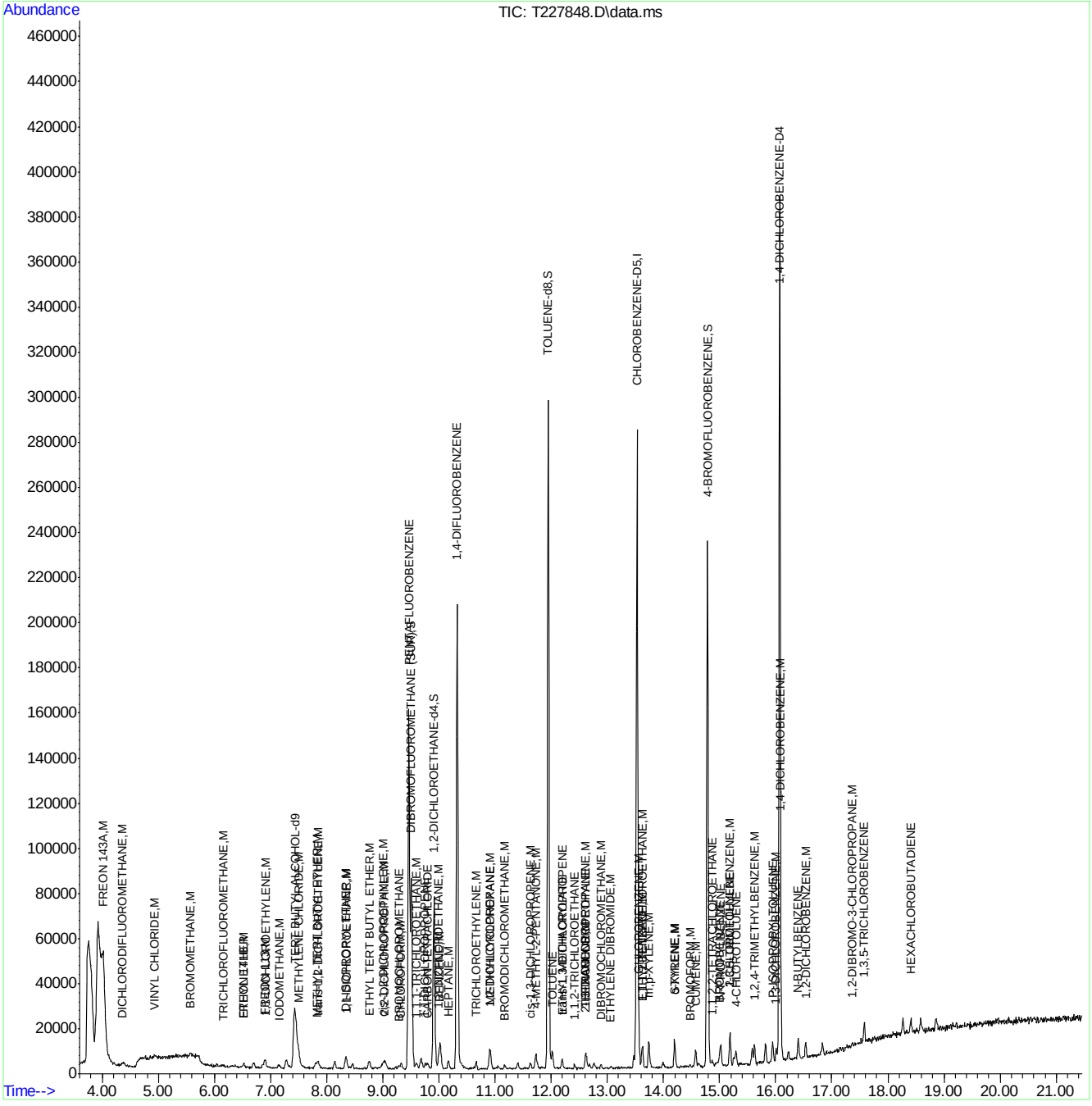
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
69) ETHYL METHACRYLATE	12.195	69	1231	0.54	PPB		92
70) trans-1,3-DICHLOROPROPENE	12.190	75	1562	0.53	PPB		91
71) 1,1,2-TRICHLOROETHANE	12.415	83	836	0.58	PPB	#	89
72) TETRACHLOROETHYLENE	12.624	164	934	0.53	PPb	#	76
73) 2-HEXANONE	12.603	58	1289	1.99	PPb		89
74) 1,3-DICHLOROPROPANE	12.619	76	1512	0.52	PPB		87
77) DIBROMOCHLOROMETHANE	12.885	129	951	0.45	PPb		79
78) ETHYLENE DIBROMIDE	13.058	107	782	0.47	PPb		73
79) CHLOROBENZENE	13.565	112	3267	0.58	PPb		98
80) 1,1,1,2-TETRACHLOROETHANE	13.628	131	1164	0.44	PPB	#	78
81) ETHYLBENZENE	13.628	91	5271	0.55	PPb		98
82) m,p-XYLENE	13.738	106	4137	1.15	PPb		78
83) o-XYLENE	14.198	91	4479	0.53	PPb		86
84) STYRENE	14.203	104	3220	0.52	PPb		94
86) BROMOFORM	14.475	173	697	0.52	PPb		91
87) CUMENE	14.575	105	5706	0.54	PPb		95
91) 1,1,2,2-TETRACHLOROETHANE	14.873	83	1506	0.56	PPB		80
94) N-PROPYLBENZENE	15.025	91	6740	0.52	PPB		95
95) BROMOBENZENE	15.004	156	1517	0.54	PPB		91
96) 2-CHLOROTOLUENE	15.181	126	1484	0.54	PPB		91
97) 4-CHLOROTOLUENE	15.291	91	4386	0.57	PPB		96
98) 1,3,5-TRIMETHYLBENZENE	15.187	105	4851	0.49	PPB		86
100) 1,2,4-TRIMETHYLBENZENE	15.621	105	5286	0.54	PPB		93
102) P-ISOPROPYLTOLUENE	15.945	119	5564	0.49	PPB	#	92
103) 1,3-DICHLOROBENZENE	16.008	146	2990	0.52	PPb		90
104) 1,4-DICHLOROBENZENE	16.097	146	3084	0.53	PPb		96
105) N-BUTYLBENZENE	16.400	134	1526	0.54	PPB	#	96
106) 1,2-DICHLOROBENZENE	16.536	146	3177	0.54	PPb		92
108) 1,2-DIBROMO-3-CHLOROPR...	17.362	157	373	0.60	PPB	#	59
109) HEXACHLOROBUTADIENE	18.408	225	1513	0.52	PPB		88
110) 1,3,5-TRICHLOROBENZENE	17.577	180	3068	0.52	PPB		88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227848.D
Acq On : 9 Nov 2017 12:42 am
Operator : CHELSEAS
Sample : ic9358-0.5
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 09 08:56:36 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227849.D
Acq On : 9 Nov 2017 1:21 am
Operator : CHELSEAS
Sample : ic9358-0.2
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 13 12:30:20 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.430	65	71502	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.465	168	135232	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.323	114	187869	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.529	117	181468	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.071	152	113329	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.507	113	55923	24.86	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 82.87%				
50) 1,2-DICHLOROETHANE-d4	9.910	65	54572	24.41	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 81.37%				
67) TOLUENE-d8	11.949	98	230758	29.86	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.53%				
90) 4-BROMOFLUOROBENZENE	14.784	174	81310	29.91	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.70%				
Target Compounds							Qvalue
7) FREON 143A	4.031	69	967	0.18	PPB		94
10) VINYL CHLORIDE	4.930	62	1116	0.23	PPb		93
14) TRICHLOROFLUOROMETHANE	6.144	101	729	0.18	PPb		81
16) FREON 141B	6.531	81	468	0.13	PPB	#	49
18) 1,1-DICHLOROETHYLENE	6.897	61	706	0.21	PPb		85
23) IODOMETHANE	7.158	142	793	0.20	PPb	#	82
29) trans-1,2-DICHLOROETHY...	7.854	61	613	0.19	PPb	#	66
31) 1,1-DICHLOROETHANE	8.356	63	790	0.19	PPb	#	50
33) DI-ISOPROPYL ETHER	8.346	45	1943	0.22	PPb		94
34) ETHYL TERT BUTYL ETHER	8.764	59	1560	0.20	PPb		89
36) cis-1,2-DICHLOROETHYLENE	9.005	96	535	0.21	PPb		83
39) BROMOCHLOROMETHANE	9.292	128	183	0.16	PPB	#	50
43) 1,1,1-TRICHLOROETHANE	9.596	97	668	0.16	PPb	#	60
46) 1,1-DICHLOROPROPENE	9.758	75	553	0.19	PPB		80
47) CARBON TETRACHLORIDE	9.789	117	654	0.17	PPB	#	80
52) 1,2-DICHLOROETHANE	9.993	62	502	0.19	PPb		83
55) HEPTANE	10.166	57	351	0.25	PPb		80
56) TRICHLOROETHYLENE	10.652	95	465	0.25	PPb	#	63
57) 1,2-DICHLOROPROPANE	10.924	63	521	0.24	PPb	#	55
60) METHYLCYCLOHEXANE	10.903	83	1005	0.23	PPB	#	70
61) BROMODICHLOROMETHANE	11.170	83	484	0.18	PPb		83
64) cis-1,3-DICHLOROPROPENE	11.635	75	736	0.23	PPb	#	62
65) 4-METHYL-2-PENTANONE	11.724	58	668	0.96	PPb	#	83
68) TOLUENE	12.022	92	1265	0.26	PPB	#	68
70) trans-1,3-DICHLOROPROPENE	12.185	75	633	0.22	PPB	#	54
71) 1,1,2-TRICHLOROETHANE	12.420	83	260	0.18	PPB	#	67
72) TETRACHLOROETHYLENE	12.634	164	438	0.25	PPb		89
73) 2-HEXANONE	12.608	58	724	1.12	PPb	#	66
74) 1,3-DICHLOROPROPANE	12.608	76	624	0.22	PPB	#	69
77) DIBROMOCHLOROMETHANE	12.885	129	370	0.17	PPb		69
78) ETHYLENE DIBROMIDE	13.063	107	294	0.18	PPb	#	70
79) CHLOROBENZENE	13.555	112	1319	0.23	PPb		83
80) 1,1,1,2-TETRACHLOROETHANE	13.618	131	521	0.20	PPB	#	78

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227849.D
Acq On : 9 Nov 2017 1:21 am
Operator : CHELSEAS
Sample : ic9358-0.2
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 13 12:30:20 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

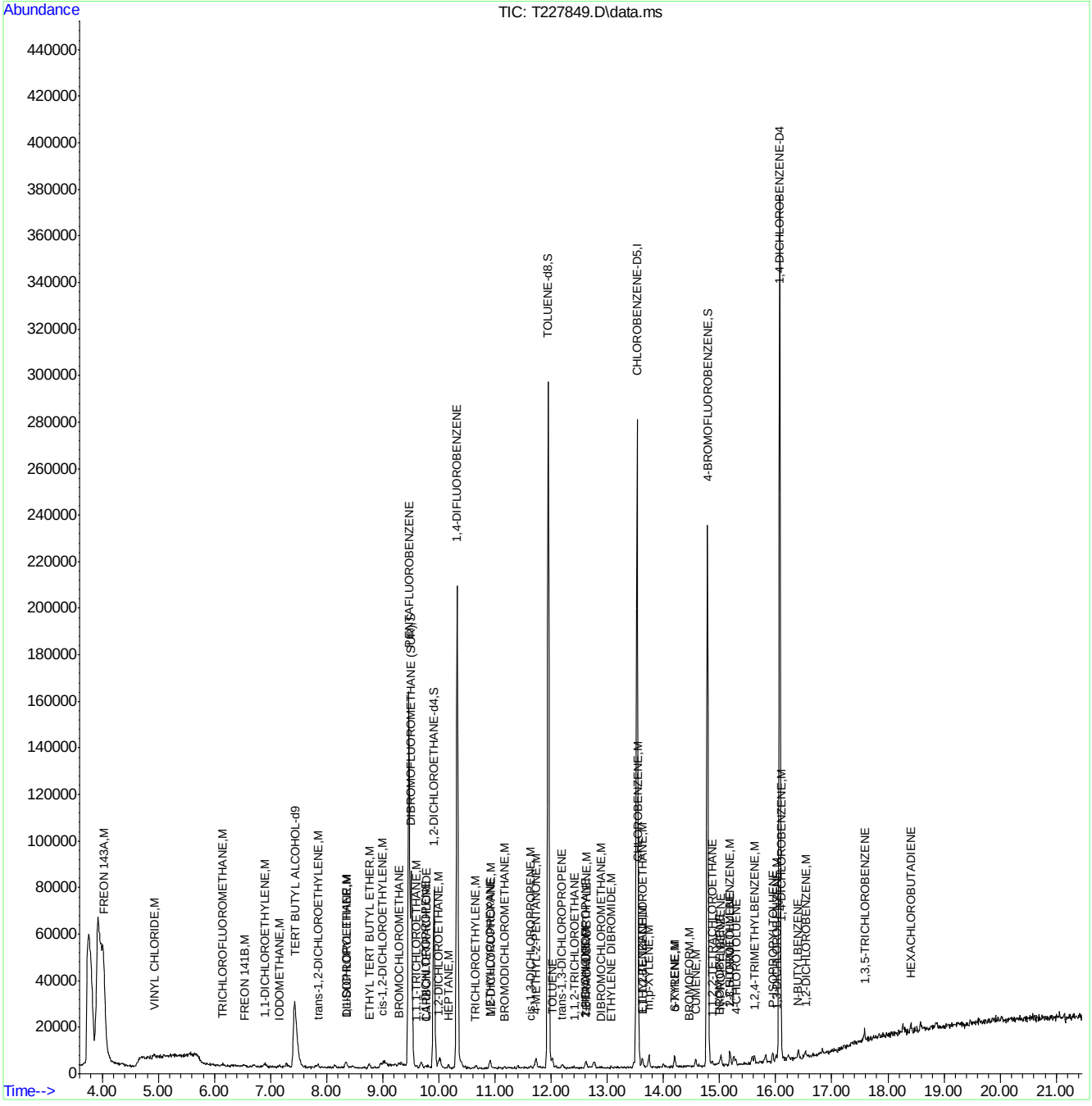
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
81) ETHYLBENZENE	13.623	91	2211	0.23	PPb		93
82) m,p-XYLENE	13.743	106	1637	0.46	PPb		98
83) o-XYLENE	14.193	91	1885	0.22	PPb		90
84) STYRENE	14.203	104	1276	0.21	PPb		87
86) BROMOFORM	14.460	173	205	0.15	PPb	#	29
87) CUMENE	14.570	105	2298	0.22	PPb		96
91) 1,1,2,2-TETRACHLOROETHANE	14.878	83	707	0.26	PPB	#	74
94) N-PROPYLBENZENE	15.019	91	3137	0.24	PPB	#	87
95) BROMOBENZENE	15.004	156	633	0.23	PPB	#	54
96) 2-CHLOROTOLUENE	15.176	126	611	0.22	PPB		69
97) 4-CHLOROTOLUENE	15.297	91	1884	0.25	PPB		90
98) 1,3,5-TRIMETHYLBENZENE	15.192	105	2024	0.21	PPB		93
100) 1,2,4-TRIMETHYLBENZENE	15.626	105	2088	0.22	PPB		93
102) P-ISOPROPYLTOLUENE	15.940	119	2525	0.22	PPB	#	92
103) 1,3-DICHLOROBENZENE	16.013	146	1355	0.24	PPb		85
104) 1,4-DICHLOROBENZENE	16.102	146	1461	0.25	PPb		87
105) N-BUTYLBENZENE	16.405	134	629	0.22	PPB	#	88
106) 1,2-DICHLOROBENZENE	16.536	146	1449	0.25	PPb		87
109) HEXACHLOROBUTADIENE	18.408	225	740	0.25	PPB		90
110) 1,3,5-TRICHLOROBENZENE	17.582	180	1414	0.24	PPB	#	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227849.D
Acq On : 9 Nov 2017 1:21 am
Operator : CHELSEAS
Sample : ic9358-0.2
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 13 12:30:20 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227850.D
Acq On : 9 Nov 2017 1:50 am
Operator : CHELSEAS
Sample : ic9358-1
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 09 09:06:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:20:03 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.424	65	73395	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.463	168	134984	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.326	114	188622	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.527	117	183553	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.069	152	117815	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.510	113	56090	30.15	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.50%				
50) 1,2-DICHLOROETHANE-d4	9.908	65	55222	30.57	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 101.90%				
67) TOLUENE-d8	11.948	98	230119	29.40	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.00%				
90) 4-BROMOFLUOROBENZENE	14.782	174	83065	29.48	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.27%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.544	59	1047	3.70	PPb		85
6) DICHLORODIFLUOROMETHANE	4.359	85	4802	0.98	PPb		90
7) FREON 143A	4.034	69	5201	0.96	PPB		97
8) FREON 142B	4.610	65	2781	0.84	PPB		90
9) CHLOROMETHANE	4.688	50	5113	1.05	PPb		84
10) VINYL CHLORIDE	4.939	62	4596	0.94	PPb		91
11) BROMOMETHANE	5.562	96	2786	1.03	PPb	#	66
12) CHLOROETHANE	5.724	64	2146	1.09	PPb	#	68
13) VINYL BROMIDE	6.048	106	1983	1.01	PPB		93
14) TRICHLOROFLUOROMETHANE	6.142	101	3278	0.94	PPb		96
16) FREON 141B	6.534	81	2818	0.94	PPB		78
17) ETHYL ETHER	6.524	74	762	0.73	PPB	#	64
18) 1,1-DICHLOROETHYLENE	6.895	61	2445	0.75	PPb		89
19) FREON 113	6.874	151	1512	0.69	PPb		81
21) ACETONE	6.927	58	482	3.15	PPb	#	21
22) CARBON DISULFIDE	7.282	76	5667	0.69	PPb		78
23) IODOMETHANE	7.152	142	2725	0.73	PPb	#	95
25) METHYL ACETATE	7.335	43	1661	1.01	PPB		88
26) METHYLENE CHLORIDE	7.507	84	1882	0.80	PPb		89
28) METHYL TERT BUTYL ETHER	7.821	73	5558	0.78	PPb		91
29) trans-1,2-DICHLOROETHY...	7.858	61	2282	0.76	PPb		79
30) HEXANE	8.145	57	2133	0.67	PPb		87
31) 1,1-DICHLOROETHANE	8.355	63	2853	0.76	PPb		97
33) DI-ISOPROPYL ETHER	8.344	45	6195	0.73	PPb		88
34) ETHYL TERT BUTYL ETHER	8.752	59	5890	0.78	PPb		90
35) 2-BUTANONE	8.972	72	468	2.73	PPb		73
36) cis-1,2-DICHLOROETHYLENE	9.003	96	1886	0.82	PPb		80
37) 2,2-DICHLOROPROPANE	9.045	77	2782	0.74	PPB		87
38) ETHYL ACETATE	8.993	45	239	0.77	PPb	#	1
39) BROMOCHLOROMETHANE	9.280	128	697	0.72	PPB	#	58
40) TETRAHYDROFURAN	9.322	42	580	0.92	PPb	#	39
41) CHLOROFORM	9.327	83	2422	0.72	PPb		87
43) 1,1,1-TRICHLOROETHANE	9.599	97	2500	0.72	PPb		92

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227850.D
Acq On : 9 Nov 2017 1:50 am
Operator : CHELSEAS
Sample : ic9358-1
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 09 09:06:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:20:03 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
44) CYCLOHEXANE	9.699	84	4076	1.05	PPB	#	70
46) 1,1-DICHLOROPROPENE	9.761	75	1910	0.71	PPB		87
47) CARBON TETRACHLORIDE	9.803	117	2195	0.72	PPB		93
51) BENZENE	10.007	78	6249	0.72	PPb		95
52) 1,2-DICHLOROETHANE	9.997	62	1586	0.74	PPb		92
54) TERT-AMYL METHYL ETHER	10.028	73	5717	0.76	PPb		92
55) HEPTANE	10.169	57	1385	0.76	PPb	#	76
56) TRICHLOROETHYLENE	10.661	95	1402	0.71	PPb	#	85
57) 1,2-DICHLOROPROPANE	10.912	63	1932	0.81	PPb		81
58) DIBROMOMETHANE	11.053	93	862	0.76	PPB	#	79
59) METHYL METHACRYLATE	10.907	100	284	0.74	PPB	#	35
60) METHYLCYCLOHEXANE	10.907	83	3422	0.68	PPB		85
61) BROMODICHLOROMETHANE	11.168	83	1772	0.73	PPb		79
62) 2-CHLOROETHYL VINYL ETHER	11.399	63	2835	3.69	PPb		85
63) EPICHLOROHYDRIN	11.529	57	675	3.06	PPb		54
64) cis-1,3-DICHLOROPROPENE	11.634	75	2501	0.76	PPb		92
65) 4-METHYL-2-PENTANONE	11.733	58	2500	3.26	PPb	#	67
68) TOLUENE	12.021	92	3685	0.71	PPB	#	86
69) ETHYL METHACRYLATE	12.199	69	1772	0.74	PPB		94
70) trans-1,3-DICHLOROPROPENE	12.199	75	1834	0.66	PPB		88
71) 1,1,2-TRICHLOROETHANE	12.418	83	1141	0.79	PPB	#	83
72) TETRACHLOROETHYLENE	12.628	164	1229	0.69	PPb	#	80
73) 2-HEXANONE	12.601	58	2302	3.16	PPb	#	76
74) 1,3-DICHLOROPROPANE	12.612	76	2089	0.75	PPB	#	63
75) BUTYL ACETATE	12.680	56	967	0.79	PPb	#	63
76) 3,3-DIMETHYL-1-BUTANOL	12.758	57	1998	6.64	PPB	#	76
77) DIBROMOCHLOROMETHANE	12.889	129	1355	0.74	PPb		78
78) ETHYLENE DIBROMIDE	13.067	107	1108	0.71	PPb		92
79) CHLOROBENZENE	13.559	112	3999	0.69	PPb		96
80) 1,1,1,2-TETRACHLOROETHANE	13.616	131	1613	0.68	PPB		93
81) ETHYLBENZENE	13.632	91	7213	0.73	PPb		92
82) m,p-XYLENE	13.736	106	5199	1.37	PPb		93
83) o-XYLENE	14.197	91	6368	0.74	PPb		97
84) STYRENE	14.202	104	4430	0.72	PPb		99
86) BROMOFORM	14.474	173	1059	0.83	PPb		90
87) CUMENE	14.568	105	7676	0.70	PPb		100
88) cis-1,4-DICHLORO-2-BUTENE	14.625	88	459	0.15	PPB	#	57
91) 1,1,2,2-TETRACHLOROETHANE	14.871	83	2169	0.77	PPB		90
93) 1,2,3-TRICHLOROPROPANE	14.960	110	485	0.87	PPB		88
94) N-PROPYLBENZENE	15.023	91	9215	0.68	PPB	#	99
95) BROMOBENZENE	15.007	156	1957	0.69	PPB		84
96) 2-CHLOROTOLUENE	15.185	126	1896	0.67	PPB		83
97) 4-CHLOROTOLUENE	15.290	91	5590	0.69	PPB		90
98) 1,3,5-TRIMETHYLBENZENE	15.185	105	6574	0.66	PPB		95
100) 1,2,4-TRIMETHYLBENZENE	15.619	105	7122	0.69	PPB		93
102) P-ISOPROPYLTOLUENE	15.943	119	7706	0.66	PPB	#	89
103) 1,3-DICHLOROBENZENE	16.017	146	4512	0.77	PPb		93
104) 1,4-DICHLOROBENZENE	16.100	146	4752	0.79	PPb		96
105) N-BUTYLBENZENE	16.404	134	2125	0.70	PPB		75
106) 1,2-DICHLOROBENZENE	16.529	146	4565	0.74	PPb		95

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227850.D
Acq On : 9 Nov 2017 1:50 am
Operator : CHELSEAS
Sample : ic9358-1
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 09 09:06:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:20:03 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
108) 1,2-DIBROMO-3-CHLOROPR...	17.361	157	554	0.86	PPB	#	70
109) HEXACHLOROBUTADIENE	18.412	225	2250	0.72	PPB		100
110) 1,3,5-TRICHLOROBENZENE	17.575	180	4363	0.71	PPB		91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

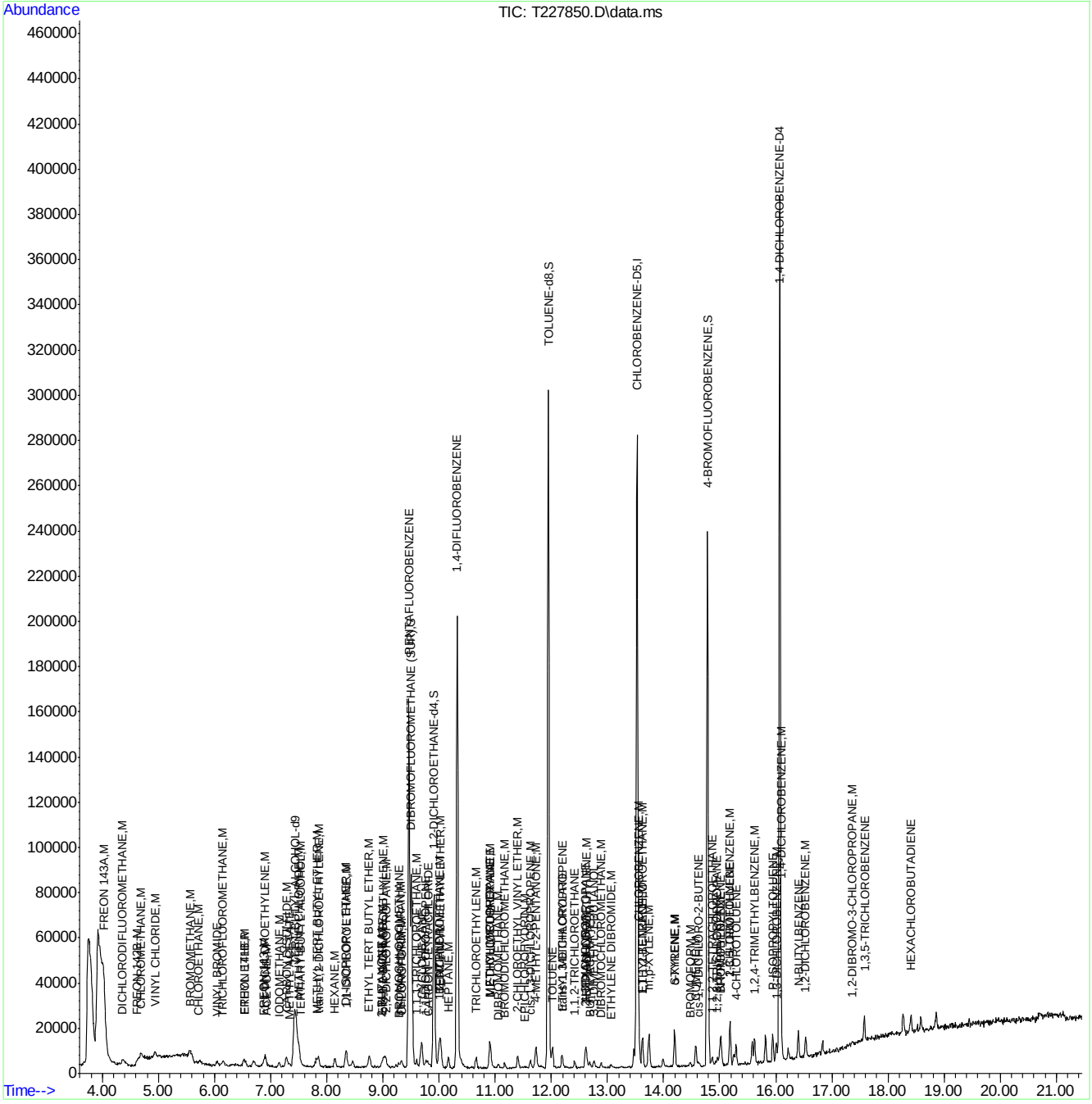
7.7.19

7

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227850.D
Acq On : 9 Nov 2017 1:50 am
Operator : CHELSEAS
Sample : ic9358-1
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 09 09:06:32 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:20:03 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227851.D
Acq On : 9 Nov 2017 2:20 am
Operator : CHELSEAS
Sample : ic9358-2
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 09 09:16:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 09:10:57 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.429	65	70097	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.464	168	132637	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.321	114	181014	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.527	117	178263	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.069	152	110464	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.505	113	54894	30.03	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.10%				
50) 1,2-DICHLOROETHANE-d4	9.908	65	52655	30.37	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 101.23%				
67) TOLUENE-d8	11.943	98	228698	30.09	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.30%				
90) 4-BROMOFLUOROBENZENE	14.783	174	79045	29.92	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.73%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.534	59	3128	11.56	PPb		77
3) 1,4-DIOXANE	11.006	88	1008	46.06	PPb	#	61
5) CHLORODIFLUOROMETHANE	4.369	51	8775	1.79	PPB		93
6) DICHLORODIFLUOROMETHANE	4.369	85	9147	1.90	PPb		87
7) FREON 143A	4.014	69	9502	1.78	PPB		89
8) FREON 142B	4.615	65	5518	1.70	PPB		99
9) CHLOROMETHANE	4.688	50	8649	1.81	PPb		91
10) VINYL CHLORIDE	4.934	62	8335	1.73	PPb		95
11) BROMOMETHANE	5.562	96	5332	2.01	PPb		91
12) CHLOROETHANE	5.734	64	3970	1.80	PPb		92
13) VINYL BROMIDE	6.038	106	3397	1.69	PPB		89
14) TRICHLOROFLUOROMETHANE	6.142	101	6145	1.80	PPb		94
16) FREON 141B	6.545	81	5166	1.76	PPB		93
17) ETHYL ETHER	6.514	74	2153	2.10	PPB	#	77
18) 1,1-DICHLOROETHYLENE	6.901	61	6172	1.93	PPb		95
19) FREON 113	6.880	151	4202	1.96	PPb		90
20) ACROLEIN	6.733	56	711	2.34	PPB	#	61
21) ACETONE	6.901	58	1133	7.27	PPb	#	1
22) CARBON DISULFIDE	7.272	76	15762	2.07	PPb		94
23) IODOMETHANE	7.152	142	7397	2.01	PPb	#	87
24) ACETONITRILE	7.277	41	6767	23.73	PPB	#	89
25) METHYL ACETATE	7.324	43	3786	2.55	PPB		92
26) METHYLENE CHLORIDE	7.508	84	4599	2.04	PPb		96
27) ACRYLONITRILE	7.785	53	1384	2.03	PPb		79
28) METHYL TERT BUTYL ETHER	7.816	73	13459	2.01	PPb		88
29) trans-1,2-DICHLOROETHY...	7.853	61	5846	1.98	PPb		84
30) HEXANE	8.146	57	5724	1.89	PPb		95
31) 1,1-DICHLOROETHANE	8.355	63	7287	1.98	PPb		97
32) VINYL ACETATE	8.318	86	465	1.79	PPb	#	1
33) DI-ISOPROPYL ETHER	8.339	45	16245	1.95	PPb		87
34) ETHYL TERT BUTYL ETHER	8.752	59	14624	1.98	PPb		93
35) 2-BUTANONE	8.972	72	1381	7.87	PPb	#	66
36) cis-1,2-DICHLOROETHYLENE	9.009	96	4431	1.96	PPb		88

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227851.D
Acq On : 9 Nov 2017 2:20 am
Operator : CHELSEAS
Sample : ic9358-2
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 09 09:16:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 09:10:57 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
37) 2,2-DICHLOROPROPANE	9.035	77	7184	2.00	PPB		89
38) ETHYL ACETATE	8.993	45	472	1.84	PPb	#	1
39) BROMOCHLOROMETHANE	9.291	128	2006	2.12	PPB		88
40) TETRAHYDROFURAN	9.338	42	1354	2.29	PPb		81
41) CHLOROFORM	9.328	83	6315	2.01	PPb		94
42) t-BUTYL FORMATE	9.396	59	384	1.59	PPB		88
43) 1,1,1-TRICHLOROETHANE	9.594	97	6866	2.02	PPb		87
44) CYCLOHEXANE	9.694	84	8085	2.04	PPB		82
46) 1,1-DICHLOROPROPENE	9.762	75	5314	2.01	PPB		96
47) CARBON TETRACHLORIDE	9.798	117	5795	1.93	PPB		84
48) ISOPROPYL ACETATE	9.892	87	707	1.95	PPB	#	47
51) BENZENE	10.002	78	16864	2.08	PPb		95
52) 1,2-DICHLOROETHANE	9.992	62	4229	2.07	PPb		99
53) 2,2,4-TRIMETHYLPENTANE	10.028	57	17076	1.77	PPB		95
54) TERT-AMYL METHYL ETHER	10.023	73	14597	2.13	PPb		97
55) HEPTANE	10.164	57	3499	2.01	PPb		90
56) TRICHLOROETHYLENE	10.656	95	3872	2.05	PPb		93
57) 1,2-DICHLOROPROPANE	10.912	63	4663	2.05	PPb		95
58) DIBROMOMETHANE	11.054	93	2116	2.05	PPB	#	83
59) METHYL METHACRYLATE	10.891	100	835	2.16	PPB		76
60) METHYLCYCLOHEXANE	10.907	83	9055	1.88	PPB		87
61) BROMODICHLOROMETHANE	11.169	83	4847	2.08	PPb		88
62) 2-CHLOROETHYL VINYL ETHER	11.399	63	8092	10.47	PPb		94
63) EPICHLOROHYDRIN	11.519	57	1542	10.00	PPb		84
64) cis-1,3-DICHLOROPROPENE	11.629	75	6366	2.01	PPb		96
65) 4-METHYL-2-PENTANONE	11.728	58	5991	8.15	PPb		88
68) TOLUENE	12.021	92	9965	1.97	PPB		99
69) ETHYL METHACRYLATE	12.188	69	4696	2.02	PPB		95
70) trans-1,3-DICHLOROPROPENE	12.188	75	5254	1.95	PPB		90
71) 1,1,2-TRICHLOROETHANE	12.413	83	2933	2.10	PPB		87
72) TETRACHLOROETHYLENE	12.628	164	3541	2.05	PPb		92
73) 2-HEXANONE	12.607	58	5885	8.33	PPb		86
74) 1,3-DICHLOROPROPANE	12.617	76	5544	2.04	PPB		88
75) BUTYL ACETATE	12.675	56	2484	2.01	PPb	#	81
76) 3,3-DIMETHYL-1-BUTANOL	12.753	57	4686	18.94	PPB		89
77) DIBROMOCHLOROMETHANE	12.895	129	3706	2.09	PPb		98
78) ETHYLENE DIBROMIDE	13.057	107	3177	2.10	PPb		91
79) CHLOROBENZENE	13.559	112	11557	2.05	PPb		91
80) 1,1,1,2-TETRACHLOROETHANE	13.611	131	4596	2.01	PPB		94
81) ETHYLBENZENE	13.622	91	18320	1.91	PPb		98
82) m,p-XYLENE	13.742	106	14585	3.95	PPb		92
83) o-XYLENE	14.192	91	16429	1.97	PPb		96
84) STYRENE	14.202	104	11509	1.91	PPb		95
86) BROMOFORM	14.474	173	2620	2.12	PPb		87
87) CUMENE	14.573	105	20135	1.89	PPb		99
88) cis-1,4-DICHLORO-2-BUTENE	14.626	88	1277	2.09	PPB	#	83
91) 1,1,2,2-TETRACHLOROETHANE	14.872	83	5367	2.02	PPB		83
92) trans-1,4-DICHLORO-2-B...	14.924	53	1209	2.16	PPB	#	66
93) 1,2,3-TRICHLOROPROPANE	14.966	110	1140	2.07	PPB		91
94) N-PROPYLBENZENE	15.023	91	25015	1.96	PPB		100

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227851.D
Acq On : 9 Nov 2017 2:20 am
Operator : CHELSEAS
Sample : ic9358-2
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 09 09:16:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 09:10:57 2017
Response via : Initial Calibration

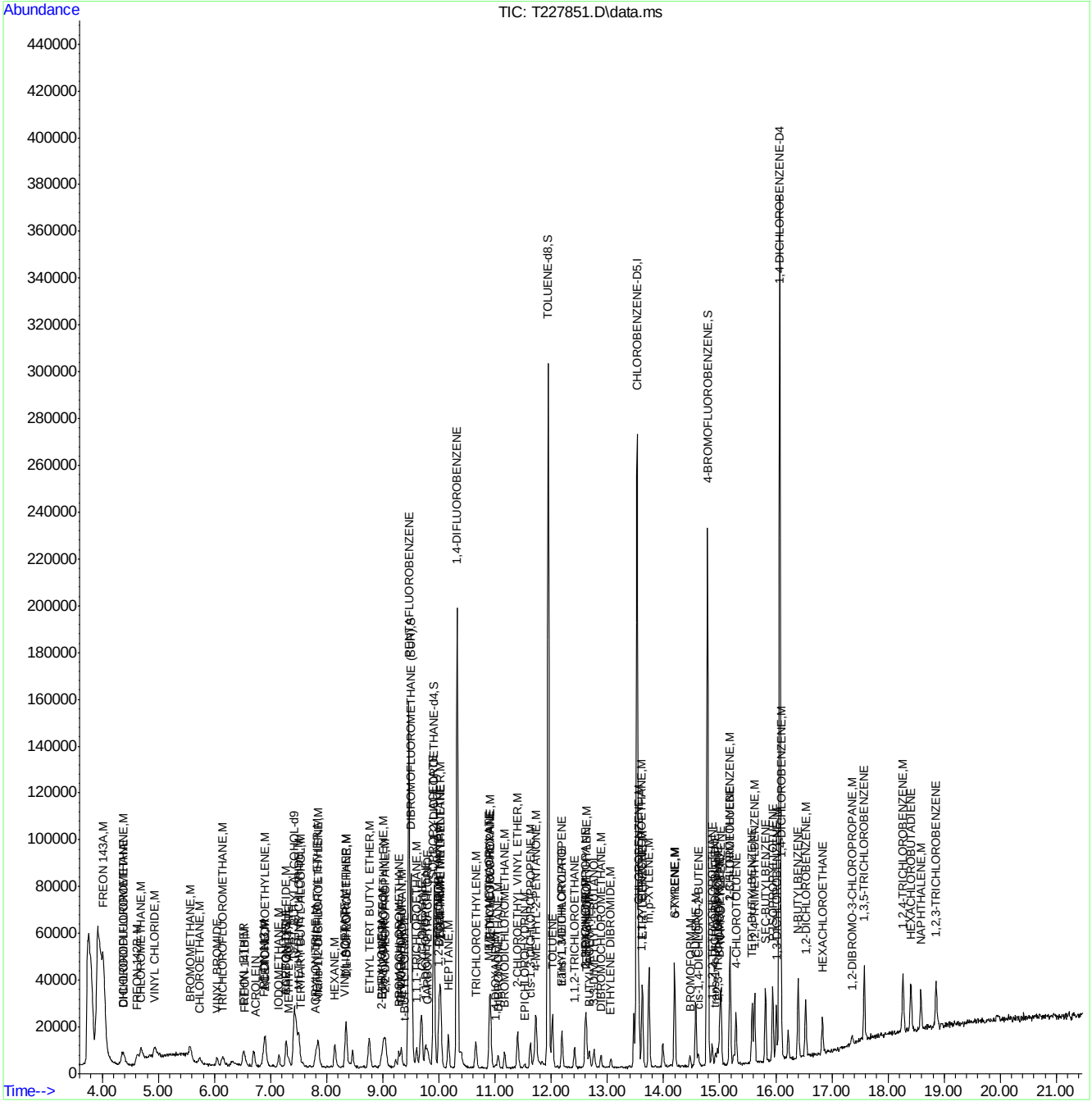
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
95) BROMOBENZENE	15.002	156	5527	2.09	PPB		83
96) 2-CHLOROTOLUENE	15.180	126	5151	1.93	PPB		90
97) 4-CHLOROTOLUENE	15.290	91	15255	2.02	PPB		93
98) 1,3,5-TRIMETHYLBENZENE	15.185	105	17478	1.87	PPB		97
99) TERT-BUTYLBENZENE	15.578	119	15265	1.77	PPB		95
100) 1,2,4-TRIMETHYLBENZENE	15.625	105	18475	1.91	PPB		97
101) SEC-BUTYLBENZENE	15.818	105	25111	1.81	PPB	#	95
102) P-ISOPROPYLTOLUENE	15.944	119	21359	1.95	PPB		99
103) 1,3-DICHLOROBENZENE	16.012	146	11111	2.02	PPb		99
104) 1,4-DICHLOROBENZENE	16.101	146	11591	2.05	PPb		96
105) N-BUTYLBENZENE	16.399	134	5515	1.94	PPB		96
106) 1,2-DICHLOROBENZENE	16.535	146	12054	2.09	PPb		95
107) HEXACHLOROETHANE	16.833	203	2221	1.71	PPB		79
108) 1,2-DIBROMO-3-CHLOROPR...	17.361	157	1179	1.94	PPB	#	78
109) HEXACHLOROBUTADIENE	18.402	225	5806	1.97	PPB		79
110) 1,3,5-TRICHLOROBENZENE	17.576	180	11817	2.04	PPB		95
112) 1,2,4-TRICHLOROBENZENE	18.266	180	9629	1.85	PPB		88
113) 1,2,3-TRICHLOROBENZENE	18.857	180	7724	1.71	PPB		95
114) NAPHTHALENE	18.585	128	15267	1.67	PPb		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227851.D
Acq On : 9 Nov 2017 2:20 am
Operator : CHELSEAS
Sample : ic9358-2
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 09 09:16:22 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 09:10:57 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227852.D
Acq On : 9 Nov 2017 2:50 am
Operator : CHELSEAS
Sample : ic9358-5
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 13 12:31:26 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.423	65	77717	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.462	168	135948	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.320	114	189064	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.526	117	181542	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.073	152	112611	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.509	113	55671	24.62	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 82.07%				
50) 1,2-DICHLOROETHANE-d4	9.907	65	53933	23.97	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 79.90%				
67) TOLUENE-d8	11.941	98	233067	30.14	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.47%				
90) 4-BROMOFLUOROBENZENE	14.781	174	80889	29.95	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.83%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.522	59	7278	22.98	PPb		93
3) 1,4-DIOXANE	11.005	88	2991	138.64	PPb		78
5) CHLORODIFLUOROMETHANE	4.363	51	22801	4.42	PPB		98
6) DICHLORODIFLUOROMETHANE	4.368	85	22655	5.10	PPb		95
7) FREON 143A	4.018	69	28798	5.37	PPB		98
8) FREON 142B	4.614	65	16144	3.93	PPB		94
9) CHLOROMETHANE	4.692	50	19795	4.08	PPb		90
10) VINYL CHLORIDE	4.933	62	19857	4.12	PPb		97
11) BROMOMETHANE	5.561	96	11753	4.01	PPb		91
12) CHLOROETHANE	5.723	64	10118	4.32	PPb		94
13) VINYL BROMIDE	6.042	106	8675	4.19	PPB		92
14) TRICHLOROFLUOROMETHANE	6.146	101	15042	3.70	PPb		93
16) FREON 141B	6.528	81	15870	4.28	PPB		94
17) ETHYL ETHER	6.513	74	5483	4.94	PPB		92
18) 1,1-DICHLOROETHYLENE	6.905	61	16202	4.73	PPb		93
19) FREON 113	6.884	151	10608	5.39	PPb		95
20) ACROLEIN	6.732	56	1366	3.87	PPB	#	70
21) ACETONE	6.905	58	3247	21.29	PPb		86
22) CARBON DISULFIDE	7.276	76	38094	4.80	PPb		100
23) IODOMETHANE	7.151	142	18852	4.74	PPb		97
24) ACETONITRILE	7.292	41	15202	57.37	PPB	#	94
25) METHYL ACETATE	7.318	43	7314	4.75	PPB		95
26) METHYLENE CHLORIDE	7.501	84	10598	4.54	PPb		92
27) ACRYLONITRILE	7.784	53	3647	5.29	PPb		94
28) METHYL TERT BUTYL ETHER	7.815	73	32751	4.41	PPb		94
29) trans-1,2-DICHLOROETHY...	7.851	61	14583	4.54	PPb		98
30) HEXANE	8.139	57	15586	5.89	PPb		96
31) 1,1-DICHLOROETHANE	8.348	63	18699	4.54	PPb		99
32) VINYL ACETATE	8.322	86	1303	4.01	PPb	#	45
33) DI-ISOPROPYL ETHER	8.338	45	42258	4.81	PPb		90
34) ETHYL TERT BUTYL ETHER	8.756	59	36431	4.65	PPb		95
35) 2-BUTANONE	8.960	72	3853	20.46	PPb		75
36) cis-1,2-DICHLOROETHYLENE	9.002	96	10631	4.20	PPb		96

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227852.D
Acq On : 9 Nov 2017 2:50 am
Operator : CHELSEAS
Sample : ic9358-5
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 13 12:31:26 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
37) 2,2-DICHLOROPROPANE	9.039	77	17743	4.18	PPB		95
38) ETHYL ACETATE	8.971	45	1467	4.84	PPb		90
39) BROMOCHLOROMETHANE	9.290	128	5120	4.38	PPB		88
40) TETRAHYDROFURAN	9.342	42	3130	4.66	PPb		81
41) CHLOROFORM	9.326	83	15939	4.14	PPb		96
42) t-BUTYL FORMATE	9.394	59	1393	1.04	PPB	#	80
43) 1,1,1-TRICHLOROETHANE	9.598	97	16226	3.94	PPb		98
44) CYCLOHEXANE	9.687	84	15439	4.40	PPB		97
46) 1,1-DICHLOROPROPENE	9.761	75	13210	4.55	PPB		94
47) CARBON TETRACHLORIDE	9.792	117	14704	3.86	PPB		99
48) ISOPROPYL ACETATE	9.891	87	1759	4.50	PPB	#	82
51) BENZENE	10.006	78	42268	5.15	PPb		96
52) 1,2-DICHLOROETHANE	9.985	62	10505	4.00	PPb		95
53) 2,2,4-TRIMETHYLPENTANE	10.022	57	45107	5.97	PPB		99
54) TERT-AMYL METHYL ETHER	10.032	73	35529	4.90	PPb		96
55) HEPTANE	10.168	57	9015	6.38	PPb		97
56) TRICHLOROETHYLENE	10.655	95	9388	4.98	PPb		93
57) 1,2-DICHLOROPROPANE	10.911	63	11735	5.29	PPb		91
58) DIBROMOMETHANE	11.047	93	5398	4.39	PPB		95
59) METHYL METHACRYLATE	10.890	100	1839	4.27	PPB		91
60) METHYLCYCLOHEXANE	10.906	83	23302	5.25	PPB		98
61) BROMODICHLOROMETHANE	11.162	83	11832	4.35	PPb		90
62) 2-CHLOROETHYL VINYL ETHER	11.398	63	20748	21.08	PPb		96
63) EPICHLOROHYDRIN	11.518	57	4012	24.71	PPb		97
64) cis-1,3-DICHLOROPROPENE	11.628	75	16047	4.90	PPb		98
65) 4-METHYL-2-PENTANONE	11.727	58	14920	21.33	PPb		93
68) TOLUENE	12.020	92	24831	5.09	PPB		98
69) ETHYL METHACRYLATE	12.187	69	11820	5.24	PPB		97
70) trans-1,3-DICHLOROPROPENE	12.187	75	13903	4.78	PPB		95
71) 1,1,2-TRICHLOROETHANE	12.412	83	7258	5.06	PPB		96
72) TETRACHLOROETHYLENE	12.632	164	8353	4.80	PPb		95
73) 2-HEXANONE	12.600	58	14174	21.98	PPb		95
74) 1,3-DICHLOROPROPANE	12.616	76	13641	4.72	PPB		93
75) BUTYL ACETATE	12.679	56	6547	5.33	PPb	#	71
76) 3,3-DIMETHYL-1-BUTANOL	12.757	57	11873	50.48	PPB		88
77) DIBROMOCHLOROMETHANE	12.888	129	8803	4.14	PPb		97
78) ETHYLENE DIBROMIDE	13.061	107	7961	4.84	PPb		98
79) CHLOROBENZENE	13.563	112	27953	4.95	PPb		96
80) 1,1,1,2-TETRACHLOROETHANE	13.615	131	11028	4.19	PPB		91
81) ETHYLBENZENE	13.626	91	47820	5.00	PPb		96
82) m,p-XYLENE	13.735	106	36723	10.28	PPb		99
83) o-XYLENE	14.196	91	40268	4.74	PPb		96
84) STYRENE	14.196	104	30457	4.97	PPb		98
86) BROMOFORM	14.473	173	6261	4.68	PPb		90
87) CUMENE	14.572	105	51450	4.91	PPb		97
88) cis-1,4-DICHLORO-2-BUTENE	14.625	88	3103	4.30	PPB	#	79
91) 1,1,2,2-TETRACHLOROETHANE	14.870	83	12658	4.76	PPB		95
92) trans-1,4-DICHLORO-2-B...	14.923	53	2664	4.48	PPB		93
93) 1,2,3-TRICHLOROPROPANE	14.959	110	2743	4.23	PPB		86
94) N-PROPYLBENZENE	15.022	91	62209	4.82	PPB		96

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227852.D
Acq On : 9 Nov 2017 2:50 am
Operator : CHELSEAS
Sample : ic9358-5
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 13 12:31:26 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
95) BROMOBENZENE	15.006	156	12590	4.54	PPB	89
96) 2-CHLOROTOLUENE	15.184	126	12894	4.70	PPB	93
97) 4-CHLOROTOLUENE	15.289	91	35858	4.69	PPB	99
98) 1,3,5-TRIMETHYLBENZENE	15.184	105	44435	4.57	PPB	97
99) TERT-BUTYLBENZENE	15.582	119	37524	4.46	PPB	98
100) 1,2,4-TRIMETHYLBENZENE	15.618	105	47106	4.90	PPB	97
101) SEC-BUTYLBENZENE	15.817	105	62929	4.85	PPB	99
102) P-ISOPROPYLTOLUENE	15.943	119	51998	4.65	PPB	98
103) 1,3-DICHLOROBENZENE	16.011	146	27139	4.75	PPb	97
104) 1,4-DICHLOROBENZENE	16.099	146	27968	4.84	PPb	97
105) N-BUTYLBENZENE	16.398	134	14719	5.25	PPB	94
106) 1,2-DICHLOROBENZENE	16.534	146	28783	4.92	PPb	99
107) HEXACHLOROETHANE	16.832	203	5743	4.30	PPB	95
108) 1,2-DIBROMO-3-CHLOROPR...	17.365	157	2908	4.72	PPB	86
109) HEXACHLOROBUTADIENE	18.411	225	14261	4.93	PPB	96
110) 1,3,5-TRICHLOROBENZENE	17.574	180	29238	4.97	PPB	96
111) NITROBENZENE	17.595	77	939	4.23	PPB	92
112) 1,2,4-TRICHLOROBENZENE	18.270	180	25282	4.76	PPB	98
113) 1,2,3-TRICHLOROBENZENE	18.856	180	20970	4.17	PPB	96
114) NAPHTHALENE	18.584	128	42025	4.24	PPb	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

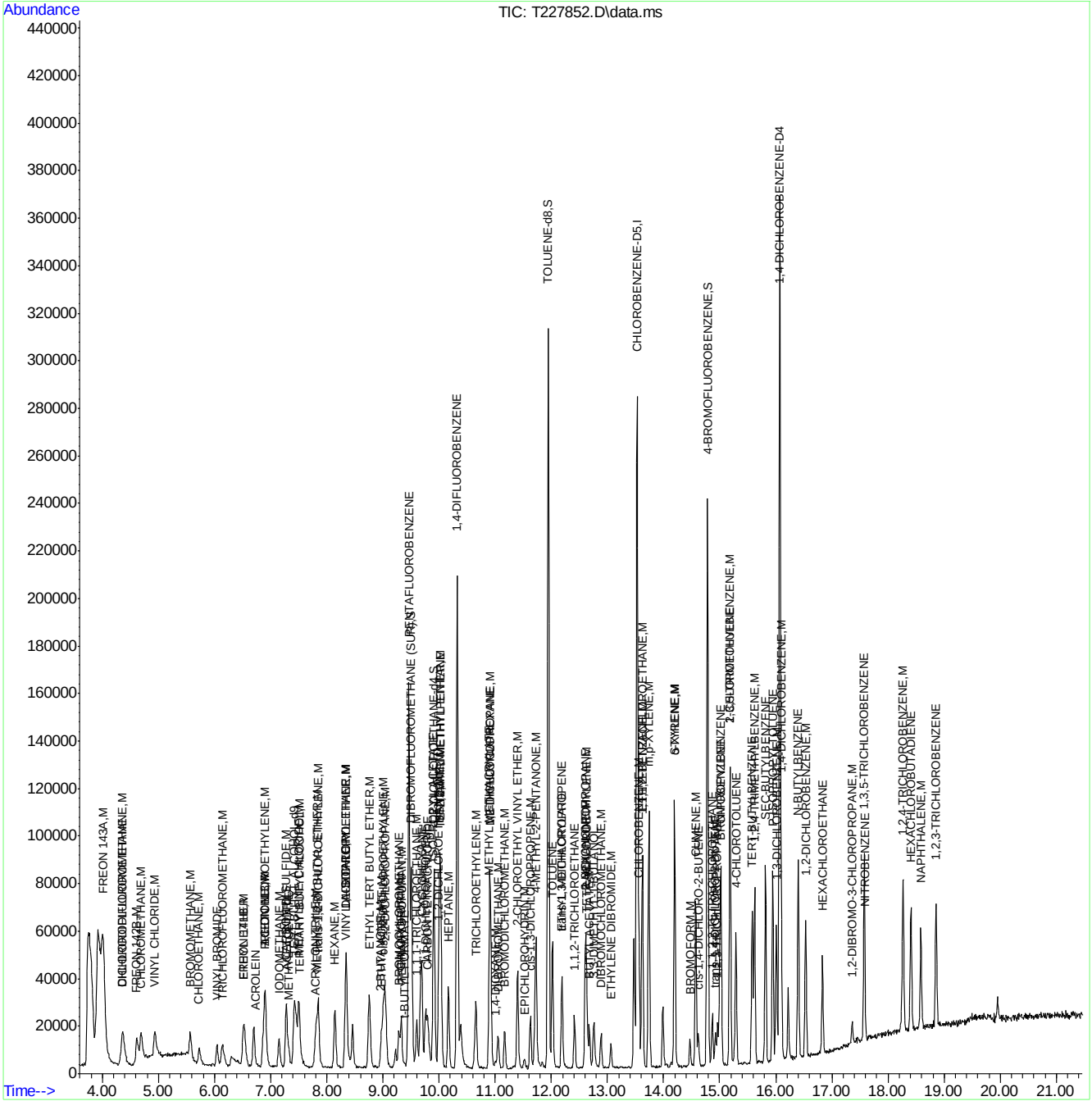
7.7.21

7

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227852.D
Acq On : 9 Nov 2017 2:50 am
Operator : CHELSEAS
Sample : ic9358-5
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 13 12:31:26 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227853.D
Acq On : 9 Nov 2017 3:20 am
Operator : CHELSEAS
Sample : icc9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 13 12:31:33 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.430	65	75195	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.464	168	139141	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.322	114	192982	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.528	117	188397	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.070	152	115050	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.506	113	57478	24.83	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 82.77%			
50) 1,2-DICHLOROETHANE-d4	9.909	65	55330	24.10	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 80.33%			
67) TOLUENE-d8	11.943	98	243148	30.30	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.00%			
90) 4-BROMOFLUOROBENZENE	14.783	174	81788	29.64	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 98.80%			
Target Compounds						Qvalue
2) TERTIARY BUTYL ALCOHOL	7.534	59	29019	94.71	PPb	100
3) 1,4-DIOXANE	11.007	88	12167	582.89	PPb	100
5) CHLORODIFLUOROMETHANE	4.375	51	105900	20.04	PPB	100
6) DICHLORODIFLUOROMETHANE	4.375	85	111530	24.51	PPb	100
7) FREON 143A	4.030	69	120180	21.89	PPB	100
8) FREON 142B	4.621	65	69600	16.57	PPB	100
9) CHLOROMETHANE	4.694	50	101600	20.48	PPb	100
10) VINYL CHLORIDE	4.945	62	107303	21.73	PPb	100
11) BROMOMETHANE	5.568	96	59992	19.99	PPb	100
12) CHLOROETHANE	5.730	64	49092	20.49	PPb	100
13) VINYL BROMIDE	6.049	106	44825	21.13	PPB	100
14) TRICHLOROFLUOROMETHANE	6.148	101	77682	18.66	PPb	100
16) FREON 141B	6.541	81	67715	17.83	PPB	100
17) ETHYL ETHER	6.509	74	22231	19.55	PPB	100
18) 1,1-DICHLOROETHYLENE	6.901	61	69888	19.95	PPb	100
19) FREON 113	6.886	151	47985	23.80	PPb	100
20) ACROLEIN	6.724	56	6640	18.37	PPB	100
21) ACETONE	6.912	58	13891	89.01	PPb	100
22) CARBON DISULFIDE	7.278	76	171082	21.07	PPb	100
23) IODOMETHANE	7.152	142	79713	19.60	PPb	100
24) ACETONITRILE	7.283	41	56632	208.82	PPB	100
25) METHYL ACETATE	7.320	43	29206	18.52	PPB	100
26) METHYLENE CHLORIDE	7.508	84	46953	19.65	PPb	100
27) ACRYLONITRILE	7.780	53	13934	19.75	PPb	100
28) METHYL TERT BUTYL ETHER	7.817	73	139973	18.41	PPb	100
29) trans-1,2-DICHLOROETHY...	7.853	61	64644	19.68	PPb	100
30) HEXANE	8.146	57	70877	26.19	PPb	100
31) 1,1-DICHLOROETHANE	8.355	63	79063	18.77	PPb	100
32) VINYL ACETATE	8.319	86	5496	16.52	PPb	100
33) DI-ISOPROPYL ETHER	8.345	45	178495	19.86	PPb	100
34) ETHYL TERT BUTYL ETHER	8.758	59	157542	19.66	PPb	100
35) 2-BUTANONE	8.962	72	15694	81.42	PPb	100
36) cis-1,2-DICHLOROETHYLENE	9.009	96	47327	18.25	PPb	100

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227853.D
Acq On : 9 Nov 2017 3:20 am
Operator : CHELSEAS
Sample : icc9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 13 12:31:33 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
37) 2,2-DICHLOROPROPANE	9.041	77	78633	18.11	PPB	100
38) ETHYL ACETATE	8.973	45	5780	18.62	PPb	100
39) BROMOCHLOROMETHANE	9.286	128	21477	17.95	PPB	100
40) TETRAHYDROFURAN	9.328	42	12348	17.94	PPb	100
41) CHLOROFORM	9.328	83	69170	17.56	PPb	100
42) t-BUTYL FORMATE	9.396	59	5013	3.67	PPB	100
43) 1,1,1-TRICHLOROETHANE	9.605	97	74806	17.73	PPb	100
44) CYCLOHEXANE	9.689	84	87336	24.34	PPB	100
46) 1,1-DICHLOROPROPENE	9.757	75	58205	19.60	PPB	100
47) CARBON TETRACHLORIDE	9.794	117	64711	16.59	PPB	100
48) ISOPROPYL ACETATE	9.893	87	7493	18.74	PPB	100
51) BENZENE	10.003	78	178868	21.34	PPb	100
52) 1,2-DICHLOROETHANE	9.992	62	43826	16.33	PPb	100
53) 2,2,4-TRIMETHYLPENTANE	10.029	57	209538	27.16	PPB	100
54) TERT-AMYL METHYL ETHER	10.029	73	149112	20.13	PPb	100
55) HEPTANE	10.165	57	39724	27.55	PPb	100
56) TRICHLOROETHYLENE	10.657	95	41794	21.70	PPb	100
57) 1,2-DICHLOROPROPANE	10.913	63	49909	22.03	PPb	100
58) DIBROMOMETHANE	11.049	93	23617	18.81	PPB	100
59) METHYL METHACRYLATE	10.892	100	8739	19.88	PPB	100
60) METHYLCYCLOHEXANE	10.908	83	111394	24.59	PPB	100
61) BROMODICHLOROMETHANE	11.169	83	51259	18.48	PPb	100
62) 2-CHLOROETHYL VINYL ETHER	11.399	63	88399	88.01	PPb	100
63) EPICHLOROHYDRIN	11.520	57	17021	102.70	PPb	100
64) cis-1,3-DICHLOROPROPENE	11.629	75	69639	20.85	PPb	100
65) 4-METHYL-2-PENTANONE	11.729	58	64249	90.00	PPb	100
68) TOLUENE	12.022	92	106343	21.00	PPB	100
69) ETHYL METHACRYLATE	12.189	69	50525	21.60	PPB	100
70) trans-1,3-DICHLOROPROPENE	12.189	75	59080	19.57	PPB	100
71) 1,1,2-TRICHLOROETHANE	12.414	83	30686	20.63	PPB	100
72) TETRACHLOROETHYLENE	12.628	164	36581	20.24	PPb	100
73) 2-HEXANONE	12.602	58	60731	90.76	PPb	100
74) 1,3-DICHLOROPROPANE	12.613	76	59297	19.77	PPB	100
75) BUTYL ACETATE	12.676	56	26676	20.93	PPb	100
76) 3,3-DIMETHYL-1-BUTANOL	12.759	57	50977	208.84	PPB	100
77) DIBROMOCHLOROMETHANE	12.885	129	38273	17.34	PPb	100
78) ETHYLENE DIBROMIDE	13.063	107	34295	20.11	PPb	100
79) CHLOROBENZENE	13.559	112	121767	20.77	PPb	100
80) 1,1,1,2-TETRACHLOROETHANE	13.617	131	50177	18.38	PPB	100
81) ETHYLBENZENE	13.627	91	212942	21.44	PPb	100
82) m,p-XYLENE	13.737	106	162655	43.87	PPb	100
83) o-XYLENE	14.197	91	182316	20.68	PPb	100
84) STYRENE	14.197	104	135608	21.34	PPb	100
86) BROMOFORM	14.469	173	26690	19.24	PPb	100
87) CUMENE	14.574	105	238894	21.96	PPb	100
88) cis-1,4-DICHLORO-2-BUTENE	14.621	88	12866	17.19	PPB	100
91) 1,1,2,2-TETRACHLOROETHANE	14.867	83	53400	19.64	PPB	100
92) trans-1,4-DICHLORO-2-B...	14.919	53	10967	18.06	PPB	100
93) 1,2,3-TRICHLOROPROPANE	14.961	110	11939	18.03	PPB	100
94) N-PROPYLBENZENE	15.024	91	277386	21.05	PPB	100

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227853.D
Acq On : 9 Nov 2017 3:20 am
Operator : CHELSEAS
Sample : icc9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 13 12:31:33 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
95) BROMOBENZENE	15.003	156	55671	19.64	PPB	100
96) 2-CHLOROTOLUENE	15.181	126	57137	20.40	PPB	100
97) 4-CHLOROTOLUENE	15.291	91	155329	19.90	PPB	100
98) 1,3,5-TRIMETHYLBENZENE	15.186	105	204679	20.61	PPB	100
99) TERT-BUTYLBENZENE	15.578	119	173686	20.22	PPB	100
100) 1,2,4-TRIMETHYLBENZENE	15.620	105	210214	21.42	PPB	100
101) SEC-BUTYLBENZENE	15.814	105	292960	22.11	PPB	100
102) P-ISOPROPYLTOLUENE	15.944	119	239888	20.99	PPB	100
103) 1,3-DICHLOROBENZENE	16.012	146	114517	19.64	PPb	100
104) 1,4-DICHLOROBENZENE	16.101	146	116407	19.72	PPb	100
105) N-BUTYLBENZENE	16.399	134	60391	21.10	PPB	100
106) 1,2-DICHLOROBENZENE	16.530	146	120774	20.22	PPb	100
107) HEXACHLOROETHANE	16.833	203	25089	18.37	PPB	100
108) 1,2-DIBROMO-3-CHLOROPR...	17.367	157	12442	19.75	PPB	100
109) HEXACHLOROBUTADIENE	18.408	225	60234	20.39	PPB	100
110) 1,3,5-TRICHLOROBENZENE	17.576	180	123053	20.45	PPB	100
111) NITROBENZENE	17.592	77	3983	17.54	PPB	100
112) 1,2,4-TRICHLOROBENZENE	18.267	180	110685	20.39	PPB	100
113) 1,2,3-TRICHLOROBENZENE	18.858	180	94813	18.45	PPB	100
114) NAPHTHALENE	18.586	128	190613	18.80	PPb	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

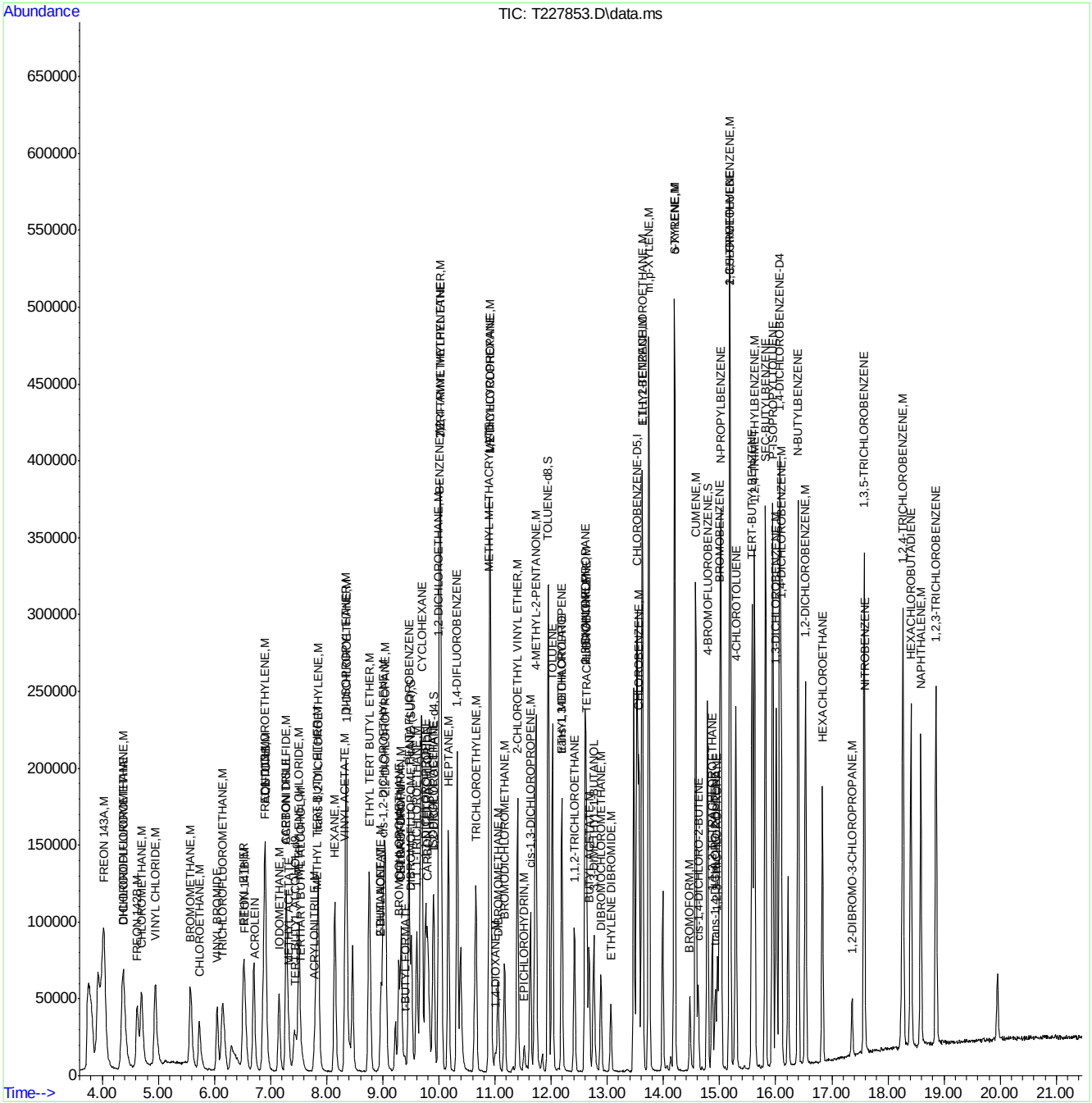
7.7.22

7

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227853.D
Acq On : 9 Nov 2017 3:20 am
Operator : CHELSEAS
Sample : icc9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 13 12:31:33 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227854.D
Acq On : 9 Nov 2017 3:50 am
Operator : CHELSEAS
Sample : ic9358-50
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 13 12:31:40 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:18:32 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.424	65	77722	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.464	168	142864	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.321	114	201184	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.527	117	193914	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.069	152	116039	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.511	113	59157	30.04	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.13%				
50) 1,2-DICHLOROETHANE-d4	9.908	65	56583	29.37	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 97.90%				
67) TOLUENE-d8	11.948	98	247968	29.99	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.97%				
90) 4-BROMOFLUOROBENZENE	14.783	174	83881	30.23	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.77%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.539	59	76919	256.36	PPb		95
3) 1,4-DIOXANE	11.007	88	31481	1297.35	PPb		90
5) CHLORODIFLUOROMETHANE	4.375	51	279089	52.73	PPB		96
6) DICHLORODIFLUOROMETHANE	4.375	85	286532	59.57	PPb		97
7) FREON 143A	4.035	69	325068	56.48	PPB		96
8) FREON 142B	4.631	65	192092	59.90	PPB		98
9) CHLOROMETHANE	4.709	50	271117	45.84	PPb		97
10) VINYL CHLORIDE	4.950	62	292731	56.32	PPb		98
11) BROMOMETHANE	5.572	96	152977	53.59	PPb		96
12) CHLOROETHANE	5.729	64	131768	58.69	PPb		98
13) VINYL BROMIDE	6.043	106	120823	58.17	PPB		96
14) TRICHLOROFLUOROMETHANE	6.148	101	204789	55.55	PPb		99
16) FREON 141B	6.530	81	179677	56.74	PPB		82
17) ETHYL ETHER	6.514	74	57994	52.42	PPB		79
18) 1,1-DICHLOROETHYLENE	6.901	61	182342	52.99	PPb		96
19) FREON 113	6.885	151	125626	54.32	PPb		97
20) ACROLEIN	6.718	56	18742	60.16	PPB	#	84
21) ACETONE	6.906	58	36931	227.81	PPb		99
22) CARBON DISULFIDE	7.277	76	455071	52.04	PPb		100
23) IODOMETHANE	7.152	142	213348	53.82	PPb		99
24) ACETONITRILE	7.283	41	148126	442.87	PPB		90
25) METHYL ACETATE	7.319	43	73801	42.21	PPB		91
26) METHYLENE CHLORIDE	7.508	84	123123	49.14	PPb		98
27) ACRYLONITRILE	7.780	53	37200	56.41	PPb		96
28) METHYL TERT BUTYL ETHER	7.821	73	366907	48.82	PPb		98
29) trans-1,2-DICHLOROETHY...	7.853	61	168265	52.91	PPb		97
30) HEXANE	8.146	57	182223	53.87	PPb		97
31) 1,1-DICHLOROETHANE	8.355	63	207450	52.45	PPb		100
32) VINYL ACETATE	8.318	86	14406	55.97	PPB	#	83
33) DI-ISOPROPYL ETHER	8.344	45	468150	52.11	PPb		99
34) ETHYL TERT BUTYL ETHER	8.758	59	426041	53.47	PPb		99
35) 2-BUTANONE	8.962	72	40896	225.61	PPb		98
36) cis-1,2-DICHLOROETHYLENE	9.009	96	121815	50.05	PPb		94

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227854.D
Acq On : 9 Nov 2017 3:50 am
Operator : CHELSEAS
Sample : ic9358-50
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 13 12:31:40 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:18:32 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
37) 2,2-DICHLOROPROPANE	9.035	77	200909	50.22	PPB		96
38) ETHYL ACETATE	8.977	45	14451	43.87	PPb	#	54
39) BROMOCHLOROMETHANE	9.286	128	55286	54.30	PPB		95
40) TETRAHYDROFURAN	9.333	42	31185	46.77	PPb		93
41) CHLOROFORM	9.328	83	179802	50.69	PPb		97
42) t-BUTYL FORMATE	9.390	59	12970	49.75	PPB		94
43) 1,1,1-TRICHLOROETHANE	9.605	97	196675	53.80	PPb		97
44) CYCLOHEXANE	9.694	84	229010	55.84	PPB		92
46) 1,1-DICHLOROPROPENE	9.762	75	151293	53.00	PPB		98
47) CARBON TETRACHLORIDE	9.798	117	172684	53.47	PPB		99
48) ISOPROPYL ACETATE	9.893	87	19857	40.90	PPB	#	90
51) BENZENE	10.002	78	466692	50.27	PPb		99
52) 1,2-DICHLOROETHANE	9.992	62	115210	50.68	PPb		99
53) 2,2,4-TRIMETHYLPENTANE	10.028	57	559848	55.02	PPB		100
54) TERT-AMYL METHYL ETHER	10.028	73	395998	49.06	PPb		99
55) HEPTANE	10.164	57	105483	54.59	PPb		97
56) TRICHLOROETHYLENE	10.661	95	108503	51.79	PPb		97
57) 1,2-DICHLOROPROPANE	10.912	63	129964	51.32	PPb		97
58) DIBROMOMETHANE	11.048	93	60776	50.13	PPB		99
59) METHYL METHACRYLATE	10.891	100	23141	56.29	PPB		96
60) METHYLCYCLOHEXANE	10.907	83	297467	55.69	PPB		96
61) BROMODICHLOROMETHANE	11.169	83	133622	51.61	PPb		99
62) 2-CHLOROETHYL VINYL ETHER	11.399	63	230871	281.86	PPb		99
63) EPICHLOROHYDRIN	11.519	57	44770	190.43	PPb		95
64) cis-1,3-DICHLOROPROPENE	11.629	75	179403	50.87	PPb		98
65) 4-METHYL-2-PENTANONE	11.728	58	167792	205.44	PPb		98
68) TOLUENE	12.021	92	277905	50.54	PPB		98
69) ETHYL METHACRYLATE	12.189	69	135163	53.46	PPB		96
70) trans-1,3-DICHLOROPROPENE	12.189	75	151924	51.85	PPB		97
71) 1,1,2-TRICHLOROETHANE	12.413	83	77873	51.27	PPB		97
72) TETRACHLOROETHYLENE	12.628	164	97061	51.70	PPb		96
73) 2-HEXANONE	12.602	58	159462	207.43	PPb		97
74) 1,3-DICHLOROPROPANE	12.612	76	153370	51.83	PPB		93
75) BUTYL ACETATE	12.675	56	72227	56.13	PPb		95
76) 3,3-DIMETHYL-1-BUTANOL	12.759	57	140781	442.98	PPB		95
77) DIBROMOCHLOROMETHANE	12.884	129	101798	52.77	PPb		98
78) ETHYLENE DIBROMIDE	13.062	107	88162	53.55	PPb		97
79) CHLOROBENZENE	13.564	112	315270	51.42	PPb		97
80) 1,1,1,2-TETRACHLOROETHANE	13.622	131	133442	53.54	PPB		98
81) ETHYLBENZENE	13.627	91	552499	52.94	PPb		98
82) m,p-XYLENE	13.742	106	428094	106.60	PPb		94
83) o-XYLENE	14.197	91	480015	53.03	PPb		99
84) STYRENE	14.197	104	355925	54.38	PPb		99
86) BROMOFORM	14.469	173	72510	53.82	PPb		96
87) CUMENE	14.573	105	632569	54.71	PPb		98
88) cis-1,4-DICHLORO-2-BUTENE	14.621	88	36239	10.99	PPB		89
91) 1,1,2,2-TETRACHLOROETHANE	14.866	83	138262	49.59	PPB		98
92) trans-1,4-DICHLORO-2-B...	14.924	53	29517	50.30	PPB		98
93) 1,2,3-TRICHLOROPROPANE	14.966	110	30490	55.81	PPB		94
94) N-PROPYLBENZENE	15.023	91	715297	53.38	PPB		98

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227854.D
Acq On : 9 Nov 2017 3:50 am
Operator : CHELSEAS
Sample : ic9358-50
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 13 12:31:40 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:18:32 2017
Response via : Initial Calibration

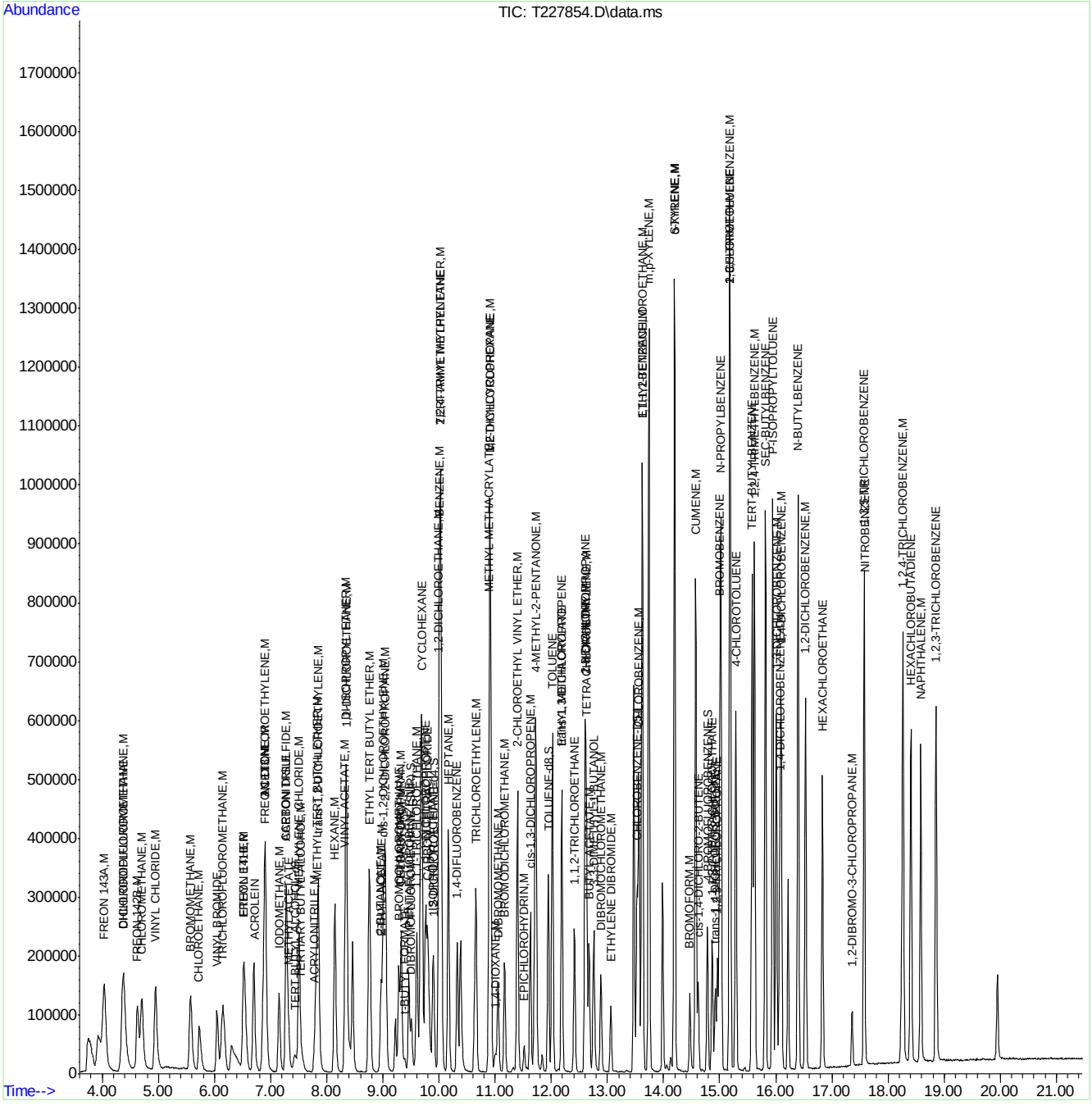
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
95) BROMOBENZENE	15.002	156	142561	51.27	PPB		97
96) 2-CHLOROTOLUENE	15.180	126	148968	53.22	PPB		98
97) 4-CHLOROTOLUENE	15.290	91	404602	51.05	PPB		99
98) 1,3,5-TRIMETHYLBENZENE	15.185	105	549058	55.97	PPB		99
99) TERT-BUTYLBENZENE	15.578	119	486291	56.82	PPB		98
100) 1,2,4-TRIMETHYLBENZENE	15.620	105	551249	54.27	PPB		99
101) SEC-BUTYLBENZENE	15.818	105	779209	56.60	PPB		99
102) P-ISOPROPYLTOLUENE	15.944	119	635861	55.18	PPB		100
103) 1,3-DICHLOROBENZENE	16.012	146	293109	50.81	PPb		97
104) 1,4-DICHLOROBENZENE	16.101	146	297312	50.00	PPb		98
105) N-BUTYLBENZENE	16.399	134	159436	53.29	PPB		96
106) 1,2-DICHLOROBENZENE	16.530	146	303224	49.94	PPb		98
107) HEXACHLOROETHANE	16.833	203	71380	56.11	PPB		98
108) 1,2-DIBROMO-3-CHLOROPR...	17.361	157	31886	50.02	PPB		81
109) HEXACHLOROBUTADIENE	18.407	225	155287	50.23	PPB		98
110) 1,3,5-TRICHLOROBENZENE	17.576	180	311980	51.20	PPB		99
111) NITROBENZENE	17.586	77	10335	29.69	PPB	#	85
112) 1,2,4-TRICHLOROBENZENE	18.266	180	282493	53.02	PPB		97
113) 1,2,3-TRICHLOROBENZENE	18.857	180	253077	55.38	PPB		99
114) NAPHTHALENE	18.585	128	514260	54.50	PPb		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227854.D
Acq On : 9 Nov 2017 3:50 am
Operator : CHELSEAS
Sample : ic9358-50
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 13 12:31:40 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:18:32 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227855.D
Acq On : 9 Nov 2017 4:20 am
Operator : CHELSEAS
Sample : ic9358-100
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 13 12:31:47 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.428	65	82126	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.462	168	146034	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.325	114	203695	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.526	117	196262	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.068	152	114865	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.509	113	60062	24.72	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 82.40%				
50) 1,2-DICHLOROETHANE-d4	9.912	65	58434	24.11	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 80.37%				
67) TOLUENE-d8	11.947	98	258273	30.90	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.00%				
90) 4-BROMOFLUOROBENZENE	14.781	174	84442	30.65	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 102.17%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.538	59	165206	493.67	PPb		92
3) 1,4-DIOXANE	11.000	88	65561	2875.77	PPb		88
5) CHLORODIFLUOROMETHANE	4.379	51	583524	105.21	PPB		97
6) DICHLORODIFLUOROMETHANE	4.379	85	565298	118.38	PPb		98
7) FREON 143A	4.033	69	661035	114.72	PPB		96
8) FREON 142B	4.630	65	394685	89.55	PPB		96
9) CHLOROMETHANE	4.708	50	567913	109.07	PPb		96
10) VINYL CHLORIDE	4.949	62	594196	114.65	PPb		100
11) BROMOMETHANE	5.571	96	295941	93.95	PPb		97
12) CHLOROETHANE	5.728	64	259811	103.33	PPb		98
13) VINYL BROMIDE	6.047	106	237992	106.90	PPB		98
14) TRICHLOROFLUOROMETHANE	6.146	101	410007	93.86	PPb		100
16) FREON 141B	6.533	81	363921	91.32	PPB		87
17) ETHYL ETHER	6.518	74	116068	97.25	PPB		82
18) 1,1-DICHLOROETHYLENE	6.899	61	362799	98.65	PPb		95
19) FREON 113	6.884	151	249752	118.03	PPb		95
20) ACROLEIN	6.722	56	36510	96.25	PPB	#	81
21) ACETONE	6.910	58	76755	468.61	PPb		96
22) CARBON DISULFIDE	7.276	76	880470	103.32	PPb		99
23) IODOMETHANE	7.151	142	419333	98.24	PPb		97
24) ACETONITRILE	7.281	41	297378	1044.79	PPB		90
25) METHYL ACETATE	7.318	43	148724	89.87	PPB		91
26) METHYLENE CHLORIDE	7.506	84	243309	97.00	PPb		97
27) ACRYLONITRILE	7.783	53	73940	99.86	PPb		97
28) METHYL TERT BUTYL ETHER	7.820	73	746807	93.58	PPb		100
29) trans-1,2-DICHLOROETHY...	7.857	61	336148	97.52	PPb		97
30) HEXANE	8.144	57	360274	126.82	PPb		96
31) 1,1-DICHLOROETHANE	8.353	63	401898	90.93	PPb		99
32) VINYL ACETATE	8.322	86	30888	88.48	PPb		97
33) DI-ISOPROPYL ETHER	8.343	45	943345	99.98	PPb		99
34) ETHYL TERT BUTYL ETHER	8.761	59	862635	102.55	PPb		98
35) 2-BUTANONE	8.965	72	85088	420.59	PPb		94
36) cis-1,2-DICHLOROETHYLENE	9.007	96	242407	89.05	PPb		95

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227855.D
Acq On : 9 Nov 2017 4:20 am
Operator : CHELSEAS
Sample : ic9358-100
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 13 12:31:47 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
37) 2,2-DICHLOROPROPANE	9.039	77	401574	88.13	PPB		95
38) ETHYL ACETATE	8.976	45	28164	86.43	PPb	#	62
39) BROMOCHLOROMETHANE	9.284	128	110796	88.23	PPB		98
40) TETRAHYDROFURAN	9.331	42	61904	85.72	PPb		96
41) CHLOROFORM	9.326	83	357586	86.52	PPb		98
42) t-BUTYL FORMATE	9.389	59	28060	19.57	PPB		96
43) 1,1,1-TRICHLOROETHANE	9.603	97	398123	89.89	PPb		97
44) CYCLOHEXANE	9.692	84	456087	121.13	PPB		95
46) 1,1-DICHLOROPROPENE	9.760	75	301894	96.87	PPB		97
47) CARBON TETRACHLORIDE	9.797	117	349656	85.40	PPB		99
48) ISOPROPYL ACETATE	9.896	87	41226	98.23	PPB		96
51) BENZENE	10.006	78	919251	103.91	PPb		99
52) 1,2-DICHLOROETHANE	9.990	62	231174	81.62	PPb		99
53) 2,2,4-TRIMETHYLPENTANE	10.027	57	1156330	142.02	PPB		99
54) TERT-AMYL METHYL ETHER	10.032	73	812919	103.98	PPb		98
55) HEPTANE	10.168	57	212646	139.73	PPb		98
56) TRICHLOROETHYLENE	10.660	95	218646	107.55	PPb		95
57) 1,2-DICHLOROPROPANE	10.916	63	258340	108.03	PPb		99
58) DIBROMOMETHANE	11.052	93	122943	92.77	PPB		98
59) METHYL METHACRYLATE	10.890	100	47345	102.06	PPB		76
60) METHYLCYCLOHEXANE	10.906	83	603171	126.12	PPB		98
61) BROMODICHLOROMETHANE	11.167	83	272339	93.03	PPb		98
62) 2-CHLOROETHYL VINYL ETHER	11.397	63	459652	433.54	PPb		99
63) EPICHLOROHYDRIN	11.518	57	92303	527.62	PPb		99
64) cis-1,3-DICHLOROPROPENE	11.628	75	365063	103.54	PPb		97
65) 4-METHYL-2-PENTANONE	11.727	58	339626	450.75	PPb		99
68) TOLUENE	12.020	92	564516	107.02	PPB		98
69) ETHYL METHACRYLATE	12.187	69	276654	113.51	PPB		98
70) trans-1,3-DICHLOROPROPENE	12.187	75	301508	95.89	PPB		96
71) 1,1,2-TRICHLOROETHANE	12.412	83	156218	100.79	PPB		97
72) TETRACHLOROETHYLENE	12.632	164	191816	101.89	PPb		97
73) 2-HEXANONE	12.600	58	316521	454.07	PPb		97
74) 1,3-DICHLOROPROPANE	12.611	76	300215	96.08	PPB		96
75) BUTYL ACETATE	12.674	56	145269	109.41	PPb		92
76) 3,3-DIMETHYL-1-BUTANOL	12.757	57	313351	1232.27	PPB		96
77) DIBROMOCHLOROMETHANE	12.888	129	207805	90.37	PPb		99
78) ETHYLENE DIBROMIDE	13.061	107	178314	100.35	PPb		93
79) CHLOROBENZENE	13.563	112	628817	102.96	PPb		100
80) 1,1,1,2-TETRACHLOROETHANE	13.620	131	274541	96.52	PPB		97
81) ETHYLBENZENE	13.625	91	1102348	106.56	PPb		97
82) m,p-XYLENE	13.740	106	854947	221.34	PPb		94
83) o-XYLENE	14.195	91	964499	105.01	PPb		100
84) STYRENE	14.195	104	708337	107.02	PPB		98
86) BROMOFORM	14.473	173	145299	100.53	PPB		95
87) CUMENE	14.572	105	1284608	113.37	PPB		97
88) cis-1,4-DICHLORO-2-BUTENE	14.619	88	72692	93.24	PPB		93
91) 1,1,2,2-TETRACHLOROETHANE	14.870	83	275555	101.51	PPB		98
92) trans-1,4-DICHLORO-2-B...	14.922	53	60825	100.32	PPB		95
93) 1,2,3-TRICHLOROPROPANE	14.964	110	60054	90.86	PPB		89
94) N-PROPYLBENZENE	15.022	91	1415102	107.55	PPB		100

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227855.D
Acq On : 9 Nov 2017 4:20 am
Operator : CHELSEAS
Sample : ic9358-100
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 13 12:31:47 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration

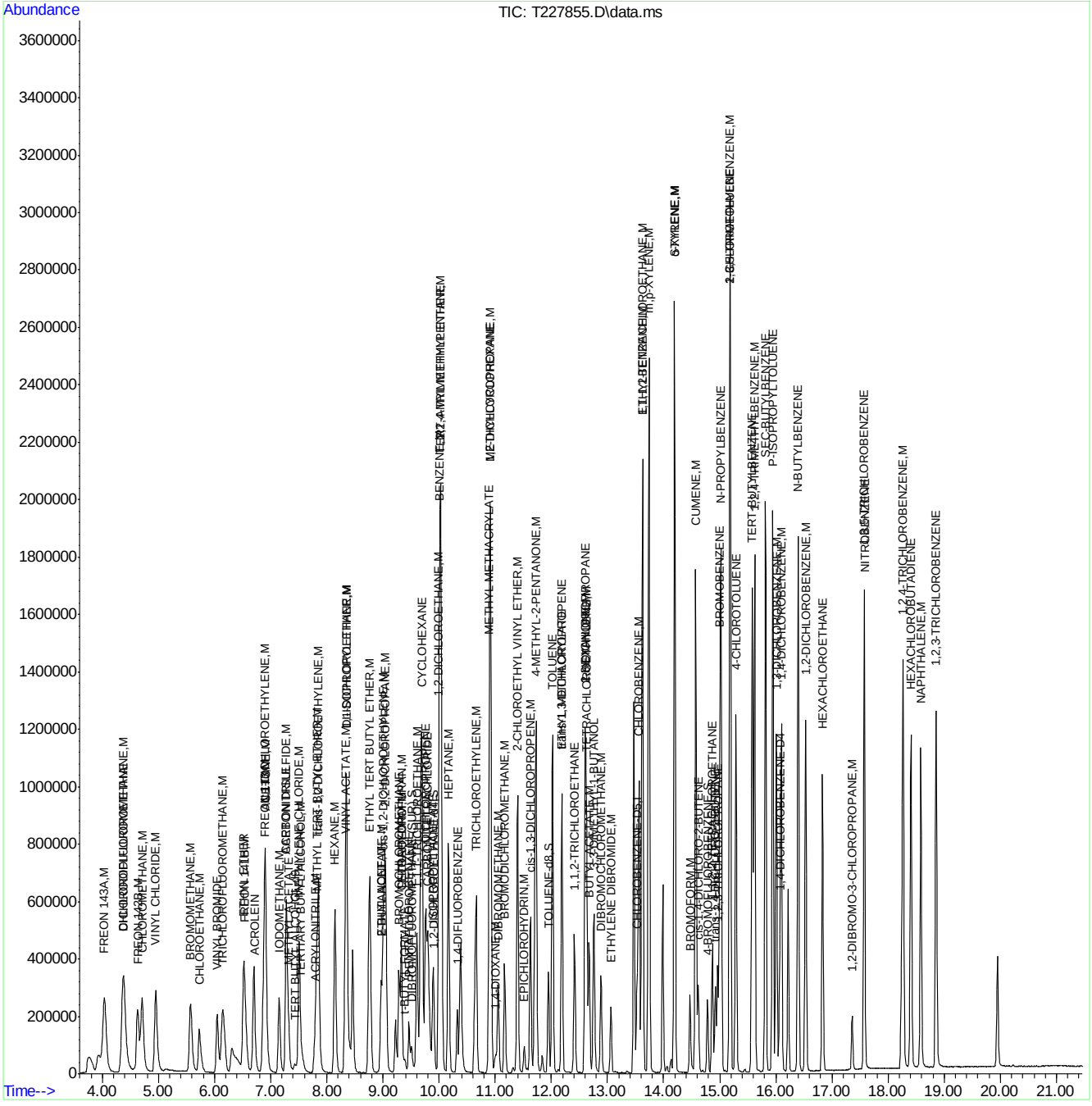
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
95) BROMOBENZENE	15.001	156	282763	99.92	PPB		96
96) 2-CHLOROTOLUENE	15.179	126	299225	106.98	PPB		97
97) 4-CHLOROTOLUENE	15.289	91	802581	102.98	PPB		99
98) 1,3,5-TRIMETHYLBENZENE	15.184	105	1106372	111.59	PPB		99
99) TERT-BUTYLBENZENE	15.576	119	997027	116.28	PPB		97
100) 1,2,4-TRIMETHYLBENZENE	15.623	105	1108722	113.17	PPB		98
101) SEC-BUTYLBENZENE	15.817	105	1575542	119.08	PPB		98
102) P-ISOPROPYLTOLUENE	15.942	119	1260361	110.48	PPB		98
103) 1,3-DICHLOROBENZENE	16.010	146	570094	97.92	PPb		98
104) 1,4-DICHLOROBENZENE	16.099	146	574727	97.50	PPb		98
105) N-BUTYLBENZENE	16.403	134	316509	110.77	PPB		93
106) 1,2-DICHLOROBENZENE	16.533	146	598228	100.34	PPb		97
107) HEXACHLOROETHANE	16.831	203	152019	111.48	PPB		96
108) 1,2-DIBROMO-3-CHLOROPR...	17.360	157	63547	101.02	PPB		90
109) HEXACHLOROBUTADIENE	18.411	225	320981	108.85	PPB		99
110) 1,3,5-TRICHLOROBENZENE	17.574	180	614658	102.33	PPB		99
111) NITROBENZENE	17.585	77	22421	98.92	PPB	#	71
112) 1,2,4-TRICHLOROBENZENE	18.270	180	563970	104.07	PPB		99
113) 1,2,3-TRICHLOROBENZENE	18.856	180	512117	99.80	PPB		99
114) NAPHTHALENE	18.584	128	1048689	103.62	PPb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227855.D
Acq On : 9 Nov 2017 4:20 am
Operator : CHELSEAS
Sample : ic9358-100
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 13 12:31:47 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:14:21 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227856.D
Acq On : 9 Nov 2017 4:50 am
Operator : CHELSEAS
Sample : ic9358-200
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 13 12:31:54 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:18:51 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.439	65	86052	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.463	168	148706	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.321	114	214017	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.527	117	206346	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.069	152	121059	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.510	113	61667	30.08	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.27%				
50) 1,2-DICHLOROETHANE-d4	9.913	65	59703	29.13	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 97.10%				
67) TOLUENE-d8	11.947	98	266837	30.33	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.10%				
90) 4-BROMOFLUOROBENZENE	14.787	174	88552	30.59	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.97%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.538	59	354648	1067.55	PPb		92
3) 1,4-DIOXANE	11.001	88	133725	4977.44	PPb		89
5) CHLORODIFLUOROMETHANE	4.374	51	1147811	208.33	PPB		96
6) DICHLORODIFLUOROMETHANE	4.369	85	1113234	217.15	PPb		98
7) FREON 143A	4.045	69	1289798	215.30	PPB		98
8) FREON 142B	4.630	65	803142	240.59	PPB		96
9) CHLOROMETHANE	4.714	50	1171888	190.37	PPb		97
10) VINYL CHLORIDE	4.949	62	1200646	221.91	PPb		99
11) BROMOMETHANE	5.567	96	444741	149.68	PPb		99
12) CHLOROETHANE	5.723	64	495649	212.08	PPb		98
13) VINYL BROMIDE	6.042	106	484207	223.97	PPB		97
14) TRICHLOROFLUOROMETHANE	6.142	101	819165	213.48	PPb		97
16) FREON 141B	6.534	81	727059	220.59	PPB		86
17) ETHYL ETHER	6.513	74	229174	199.00	PPB		83
18) 1,1-DICHLOROETHYLENE	6.900	61	712512	198.91	PPb		95
19) FREON 113	6.879	151	493883	205.17	PPb		95
20) ACROLEIN	6.717	56	71634	220.91	PPB	#	66
21) ACETONE	6.911	58	145084	859.78	PPb		92
22) CARBON DISULFIDE	7.277	76	1740385	191.20	PPb		98
23) IODOMETHANE	7.151	142	832570	201.76	PPb		98
24) ACETONITRILE	7.282	41	585575	1681.98	PPB		90
25) METHYL ACETATE	7.319	43	298912	164.25	PPB		93
26) METHYLENE CHLORIDE	7.507	84	483700	185.48	PPb		98
27) ACRYLONITRILE	7.774	53	146896	214.01	PPb		95
28) METHYL TERT BUTYL ETHER	7.821	73	1500633	191.81	PPb		100
29) trans-1,2-DICHLOROETHY...	7.852	61	666796	201.44	PPb		97
30) HEXANE	8.145	57	706036	200.51	PPb		98
31) 1,1-DICHLOROETHANE	8.354	63	798581	193.96	PPb		97
32) VINYL ACETATE	8.318	86	58307	217.64	PPB	#	73
33) DI-ISOPROPYL ETHER	8.344	45	1874995	200.51	PPb		99
34) ETHYL TERT BUTYL ETHER	8.762	59	1772360	213.71	PPb		99
35) 2-BUTANONE	8.961	72	163807	868.18	PPb		99
36) cis-1,2-DICHLOROETHYLENE	9.008	96	482063	190.29	PPb		94

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227856.D
Acq On : 9 Nov 2017 4:50 am
Operator : CHELSEAS
Sample : ic9358-200
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 13 12:31:54 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:18:51 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
37) 2,2-DICHLOROPROPANE	9.039	77	816245	196.03	PPB		97
38) ETHYL ACETATE	8.977	45	54387	158.62	PPb	#	47
39) BROMOCHLOROMETHANE	9.285	128	219161	206.79	PPB		95
40) TETRAHYDROFURAN	9.332	42	122135	175.96	PPb		94
41) CHLOROFORM	9.327	83	718127	194.50	PPb		97
42) t-BUTYL FORMATE	9.390	59	56929	209.78	PPB		93
43) 1,1,1-TRICHLOROETHANE	9.604	97	803466	211.16	PPb		97
44) CYCLOHEXANE	9.693	84	935144	219.07	PPB		90
46) 1,1-DICHLOROPROPENE	9.756	75	609784	205.22	PPB		98
47) CARBON TETRACHLORIDE	9.798	117	706463	210.17	PPB		98
48) ISOPROPYL ACETATE	9.892	87	83598	165.44	PPB	#	91
51) BENZENE	10.002	78	1811456	183.41	PPb		98
52) 1,2-DICHLOROETHANE	9.991	62	460881	190.59	PPb		98
53) 2,2,4-TRIMETHYLPENTANE	10.028	57	2465467	227.77	PPB		99
54) TERT-AMYL METHYL ETHER	10.033	73	1641979	191.22	PPb		99
55) HEPTANE	10.164	57	426125	207.31	PPb		99
56) TRICHLOROETHYLENE	10.661	95	447647	200.86	PPb		97
57) 1,2-DICHLOROPROPANE	10.917	63	517193	191.98	PPb		100
58) DIBROMOMETHANE	11.053	93	242876	188.31	PPB		97
59) METHYL METHACRYLATE	10.891	100	97959	224.01	PPB		77
60) METHYLCYCLOHEXANE	10.906	83	1229274	216.32	PPB		97
61) BROMODICHLOROMETHANE	11.168	83	558031	202.63	PPb		100
62) 2-CHLOROETHYL VINYL ETHER	11.398	63	925690	1062.35	PPb		98
63) EPICHLOROHYDRIN	11.518	57	186404	745.31	PPb		97
64) cis-1,3-DICHLOROPROPENE	11.628	75	740166	197.28	PPb		97
65) 4-METHYL-2-PENTANONE	11.728	58	693496	798.17	PPb		95
68) TOLUENE	12.021	92	1129906	193.10	PPB		93
69) ETHYL METHACRYLATE	12.188	69	557005	207.05	PPB		98
70) trans-1,3-DICHLOROPROPENE	12.188	75	604428	193.87	PPB		97
71) 1,1,2-TRICHLOROETHANE	12.413	83	313092	193.70	PPB		98
72) TETRACHLOROETHYLENE	12.627	164	391519	196.00	PPb		95
73) 2-HEXANONE	12.601	58	630301	770.49	PPb		98
74) 1,3-DICHLOROPROPANE	12.612	76	608054	193.12	PPB		94
75) BUTYL ACETATE	12.674	56	295877	216.07	PPb		91
76) 3,3-DIMETHYL-1-BUTANOL	12.758	57	662521	1959.08	PPB		95
77) DIBROMOCHLOROMETHANE	12.883	129	420373	204.78	PPb		96
78) ETHYLENE DIBROMIDE	13.061	107	360250	205.64	PPb		95
79) CHLOROBENZENE	13.563	112	1259150	192.99	PPb		99
80) 1,1,1,2-TETRACHLOROETHANE	13.621	131	563053	212.32	PPB		97
81) ETHYLBENZENE	13.626	91	2168585	195.29	PPb		94
82) m,p-XYLENE	13.741	106	1720491	402.62	PPb		85
83) o-XYLENE	14.196	91	1932497	200.64	PPb		97
84) STYRENE	14.201	104	1424466	204.53	PPb		99
86) BROMOFORM	14.473	173	299483	208.88	PPb		98
87) CUMENE	14.573	105	2543522	206.73	PPb		93
88) cis-1,4-DICHLORO-2-BUTENE	14.620	88	150773	42.99	PPB		92
91) 1,1,2,2-TETRACHLOROETHANE	14.871	83	541895	186.29	PPB		98
92) trans-1,4-DICHLORO-2-B...	14.923	53	120870	197.42	PPB		99
93) 1,2,3-TRICHLOROPROPANE	14.960	110	121874	213.82	PPB		92
94) N-PROPYLBENZENE	15.023	91	2746270	196.46	PPB		95

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227856.D
Acq On : 9 Nov 2017 4:50 am
Operator : CHELSEAS
Sample : ic9358-200
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 13 12:31:54 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:18:51 2017
Response via : Initial Calibration

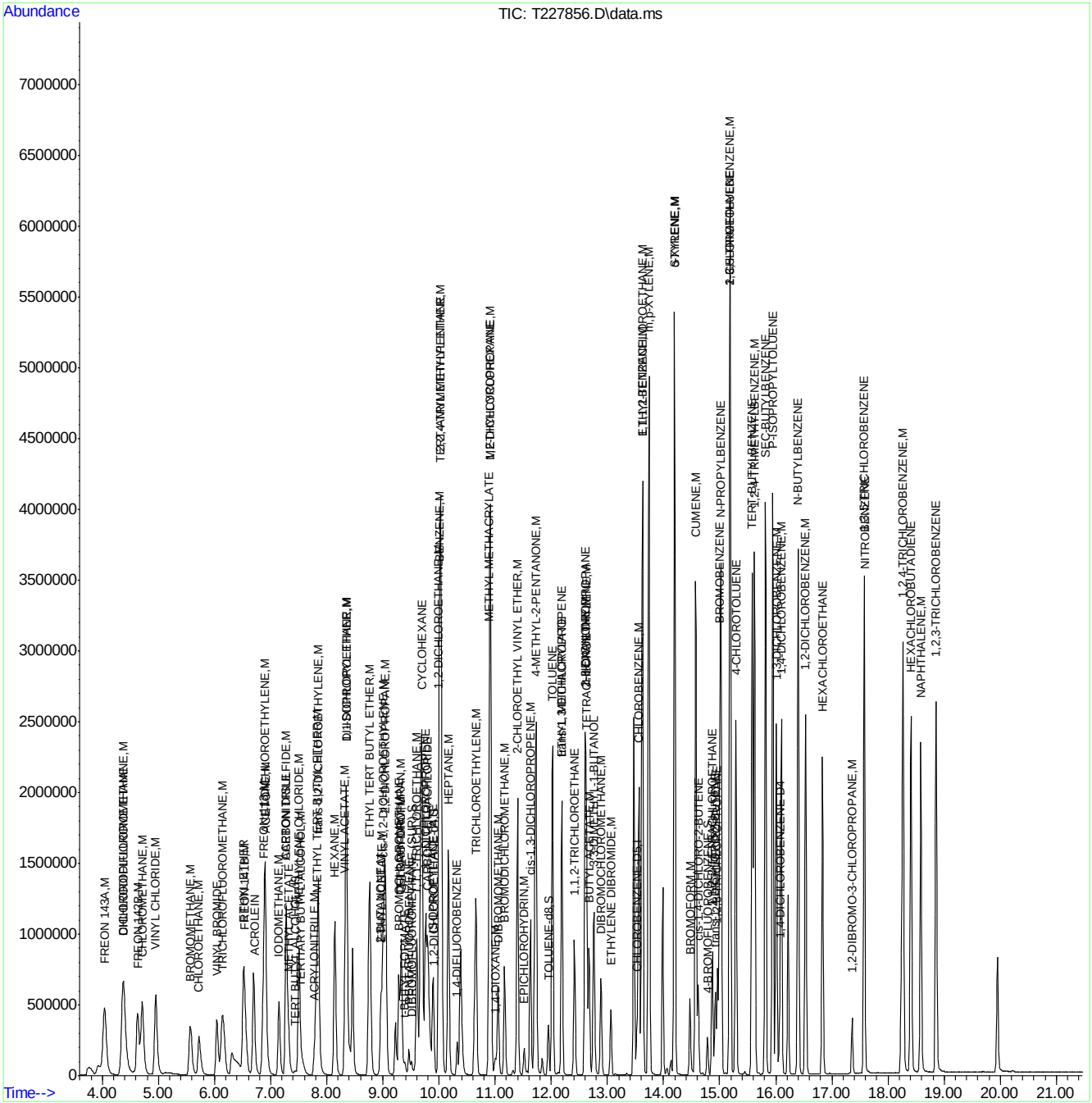
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
95) BROMOBENZENE	15.002	156	574099	197.89	PPB		97
96) 2-CHLOROTOLUENE	15.180	126	609719	208.80	PPB		95
97) 4-CHLOROTOLUENE	15.289	91	1625821	196.65	PPB		99
98) 1,3,5-TRIMETHYLBENZENE	15.185	105	2240742	218.95	PPB		98
99) TERT-BUTYLBENZENE	15.577	119	2067489	231.55	PPB		94
100) 1,2,4-TRIMETHYLBENZENE	15.619	105	2230453	210.49	PPB		98
101) SEC-BUTYLBENZENE	15.818	105	3104043	216.11	PPB		93
102) P-ISOPROPYLTOLUENE	15.943	119	2579702	214.58	PPB		95
103) 1,3-DICHLOROBENZENE	16.011	146	1171027	194.58	PPb		98
104) 1,4-DICHLOROBENZENE	16.100	146	1165591	187.91	PPb		98
105) N-BUTYLBENZENE	16.398	134	655385	209.96	PPB		92
106) 1,2-DICHLOROBENZENE	16.534	146	1207991	190.70	PPb		97
107) HEXACHLOROETHANE	16.832	203	332384	250.46	PPB		95
108) 1,2-DIBROMO-3-CHLOROPR...	17.360	157	133490	200.71	PPB		86
109) HEXACHLOROBUTADIENE	18.407	225	700478	217.20	PPB		99
110) 1,3,5-TRICHLOROBENZENE	17.575	180	1285320	202.19	PPB		99
111) NITROBENZENE	17.585	77	50498	139.06	PPB	#	76
112) 1,2,4-TRICHLOROBENZENE	18.271	180	1176795	211.71	PPB		99
113) 1,2,3-TRICHLOROBENZENE	18.856	180	1072240	224.90	PPB		99
114) NAPHTHALENE	18.584	128	2179382	221.37	PPb		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227856.D
Acq On : 9 Nov 2017 4:50 am
Operator : CHELSEAS
Sample : ic9358-200
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 13 12:31:54 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 08:18:51 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227859.D
Acq On : 9 Nov 2017 6:20 am
Operator : CHELSEAS
Sample : icv9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 09 09:29:15 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 09:23:34 2017
Response via : Initial Calibration

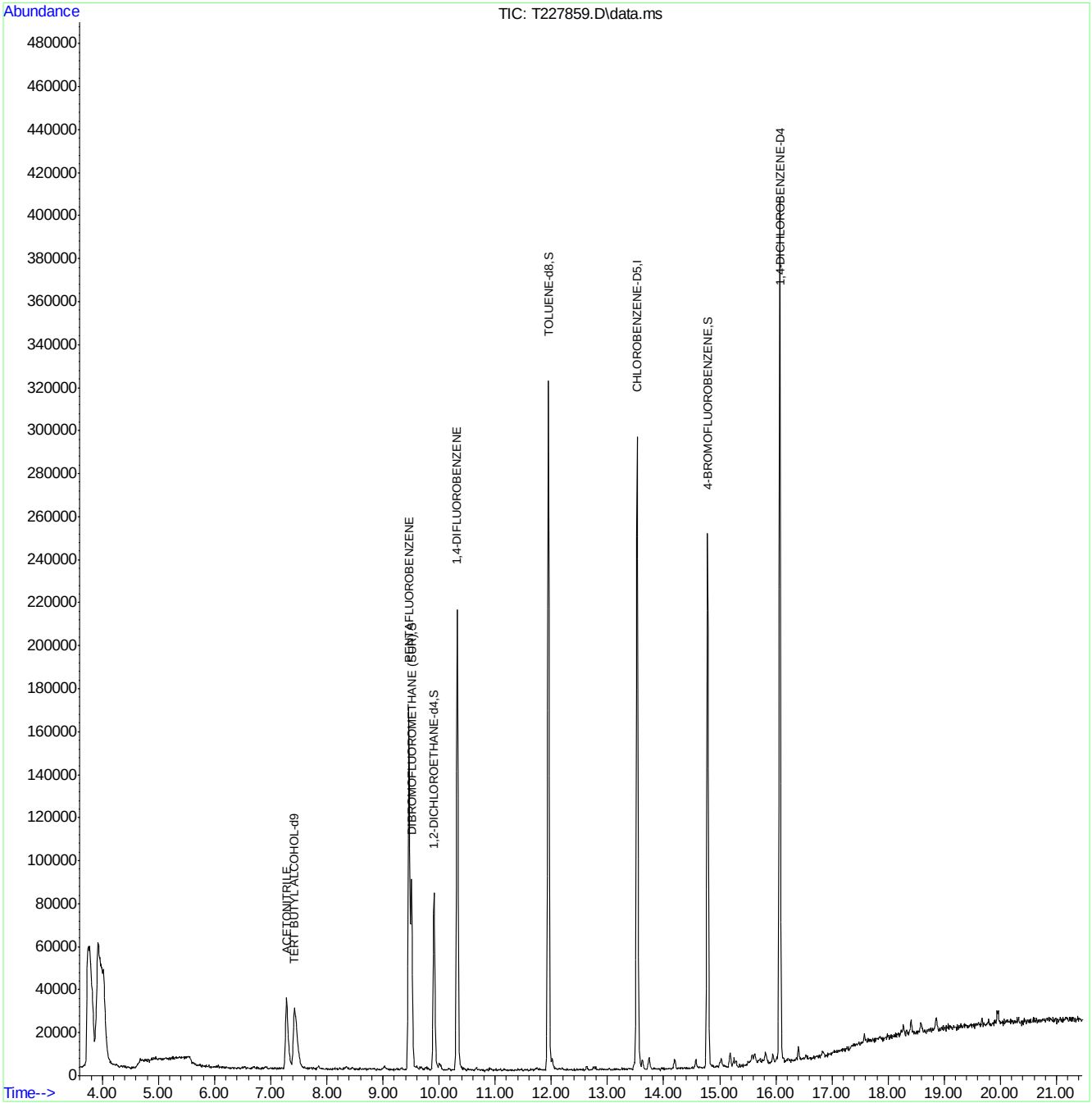
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.422	65	74877	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.462	168	139921	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.325	114	198637	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.526	117	191919	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.073	152	125141	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.509	113	58557	30.36	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 101.20%			
50) 1,2-DICHLOROETHANE-d4	9.906	65	59738	31.40	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 104.67%			
67) TOLUENE-d8	11.946	98	245328	29.98	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.93%			
90) 4-BROMOFLUOROBENZENE	14.786	174	86169	28.79	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 95.97%			
Target Compounds						Qvalue
24) ACETONITRILE	7.281	41	58106	193.13	PPB	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227859.D
Acq On : 9 Nov 2017 6:20 am
Operator : CHELSEAS
Sample : icv9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 09 09:29:15 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Nov 09 09:23:34 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227860.D
Acq On : 9 Nov 2017 6:50 am
Operator : CHELSEAS
Sample : icv9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 13 12:32:12 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) TERT BUTYL ALCOHOL-d9	7.430	65	77839	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.465	168	147688	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.323	114	204127	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.529	117	195077	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.071	152	118079	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.507	113	58845	28.91	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.37%				
50) 1,2-DICHLOROETHANE-d4	9.909	65	59043	30.20	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 100.67%				
67) TOLUENE-d8	11.944	98	251198	30.20	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.67%				
90) 4-BROMOFLUOROBENZENE	14.784	174	84592	29.96	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.87%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.530	59	29178	97.10	PPb		98
3) 1,4-DIOXANE	11.003	88	12908	531.15	PPb		88
5) CHLORODIFLUOROMETHANE	4.371	51	103396	18.90	PPB		96
6) DICHLORODIFLUOROMETHANE	4.371	85	85401	15.91	PPb		94
7) FREON 143A	4.026	69	75560	12.70	PPB		95
8) FREON 142B	4.617	65	77333	21.42	PPB		100
9) CHLOROMETHANE	4.690	50	87979	16.52	PPb		100
10) VINYL CHLORIDE	4.941	62	91862	17.10	PPb		97
11) BROMOMETHANE	5.568	96	54159	18.78	PPb		98
12) CHLOROETHANE	5.725	64	47407	19.32	PPb		99
13) VINYL BROMIDE	6.044	106	44968	20.13	PPB		99
14) TRICHLOROFLUOROMETHANE	6.144	101	73069	19.17	PPb		98
16) FREON 141B	6.536	81	66317	20.26	PPB		99
17) ETHYL ETHER	6.510	74	23416	20.48	PPB		90
18) 1,1-DICHLOROETHYLENE	6.897	61	68867	19.36	PPb		96
19) FREON 113	6.876	151	53564	22.41	PPb		98
20) ACROLEIN	6.719	56	6629	18.44	PPB	#	71
21) ACETONE	6.907	58	13582	78.23	PPb		95
22) CARBON DISULFIDE	7.273	76	178802	21.11	PPb		100
23) IODOMETHANE	7.148	142	79741	19.46	PPb		96
24) ACETONITRILE	7.284	41	52318	164.75	PPB		91
25) METHYL ACETATE	7.315	43	27002	16.32	PPB		99
26) METHYLENE CHLORIDE	7.504	84	48885	19.49	PPb		93
27) ACRYLONITRILE	7.776	53	16862	22.24	PPb		98
28) METHYL TERT BUTYL ETHER	7.817	73	302407	40.63	PPb		98
29) trans-1,2-DICHLOROETHY...	7.849	61	67046	20.39	PPb		96
30) HEXANE	8.147	57	60619	17.99	PPb		99
31) 1,1-DICHLOROETHANE	8.351	63	82024	20.06	PPb		95
32) VINYL ACETATE	8.319	86	6475	22.41	PPB	#	86
33) DI-ISOPROPYL ETHER	8.340	45	191884	20.66	PPb		93
34) ETHYL TERT BUTYL ETHER	8.759	59	171375	20.81	PPb		99
35) 2-BUTANONE	8.963	72	14860	76.06	PPb		75
36) cis-1,2-DICHLOROETHYLENE	9.005	96	49567	19.70	PPb		88

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227860.D
Acq On : 9 Nov 2017 6:50 am
Operator : CHELSEAS
Sample : icv9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 13 12:32:12 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
37) 2,2-DICHLOROPROPANE	9.036	77	75955	19.01	PPB		97
38) ETHYL ACETATE	8.984	45	6505	22.73	PPb	#	1
39) BROMOCHLOROMETHANE	9.282	128	21956	20.86	PPB		93
40) TETRAHYDROFURAN	9.334	42	13685	20.82	PPb		93
41) CHLOROFORM	9.324	83	72188	20.58	PPb		97
42) t-BUTYL FORMATE	9.386	59	27167	100.80	PPB		97
43) 1,1,1-TRICHLOROETHANE	9.606	97	76862	20.34	PPb		96
44) CYCLOHEXANE	9.690	84	85566	19.36	PPB		99
46) 1,1-DICHLOROPROPENE	9.758	75	61230	20.75	PPB		97
47) CARBON TETRACHLORIDE	9.794	117	67018	20.08	PPB		97
48) ISOPROPYL ACETATE	9.889	87	8082	20.07	PPB	#	94
51) BENZENE	10.004	78	185810	20.35	PPb		100
52) 1,2-DICHLOROETHANE	9.993	62	48068	20.84	PPb		98
53) 2,2,4-TRIMETHYLPENTANE	10.025	57	217868	20.06	PPB		97
54) TERT-AMYL METHYL ETHER	10.030	73	158775	20.59	PPb		99
55) HEPTANE	10.166	57	44890	22.90	PPb		95
56) TRICHLOROETHYLENE	10.657	95	44312	20.85	PPb		97
57) 1,2-DICHLOROPROPANE	10.914	63	54258	21.12	PPb		96
58) DIBROMOMETHANE	11.050	93	23887	20.48	PPB		98
59) METHYL METHACRYLATE	10.887	100	9350	21.47	PPB	#	61
60) METHYLCYCLOHEXANE	10.908	83	107097	19.76	PPB		93
61) BROMODICHLOROMETHANE	11.165	83	54861	20.89	PPb		100
62) 2-CHLOROETHYL VINYL ETHER	11.400	63	132527	152.12	PPb		98
63) EPICHLOROHYDRIN	11.520	57	18140	104.27	PPb		94
64) cis-1,3-DICHLOROPROPENE	11.630	75	73108	20.43	PPb		97
65) 4-METHYL-2-PENTANONE	11.730	58	66263	79.96	PPb		99
68) TOLUENE	12.022	92	111892	20.23	PPB		98
69) ETHYL METHACRYLATE	12.185	69	51741	20.34	PPB		95
70) trans-1,3-DICHLOROPROPENE	12.185	75	61840	20.98	PPB		98
71) 1,1,2-TRICHLOROETHANE	12.415	83	31520	20.63	PPB		95
72) TETRACHLOROETHYLENE	12.629	164	50740	26.87	PPb		97
73) 2-HEXANONE	12.598	58	61316	79.28	PPb		96
74) 1,3-DICHLOROPROPANE	12.608	76	62785	21.09	PPB		96
75) BUTYL ACETATE	12.676	56	30310	22.40	PPb		86
76) 3,3-DIMETHYL-1-BUTANOL	12.760	57	51905	191.66	PPB		95
77) DIBROMOCHLOROMETHANE	12.885	129	40863	21.06	PPb		98
78) ETHYLENE DIBROMIDE	13.063	107	35641	21.52	PPb		97
79) CHLOROBENZENE	13.560	112	126670	20.54	PPb		99
80) 1,1,1,2-TETRACHLOROETHANE	13.618	131	52659	21.00	PPB		95
81) ETHYLBENZENE	13.623	91	217451	20.71	PPb		99
82) m,p-XYLENE	13.738	106	170362	42.17	PPb		99
83) o-XYLENE	14.193	91	187303	20.57	PPb		96
84) STYRENE	14.198	104	138134	20.98	PPb		98
86) BROMOFORM	14.470	173	28660	21.14	PPB		97
87) CUMENE	14.575	105	243214	20.91	PPB		98
88) cis-1,4-DICHLORO-2-BUTENE	14.617	88	13630	20.37	PPB	#	84
91) 1,1,2,2-TETRACHLOROETHANE	14.868	83	54520	19.22	PPB		98
92) trans-1,4-DICHLORO-2-B...	14.920	53	12561	21.03	PPB		91
93) 1,2,3-TRICHLOROPROPANE	14.967	110	12535	21.32	PPB		86
94) N-PROPYLBENZENE	15.025	91	284952	20.90	PPB		99

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227860.D
Acq On : 9 Nov 2017 6:50 am
Operator : CHELSEAS
Sample : icv9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 13 12:32:12 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration

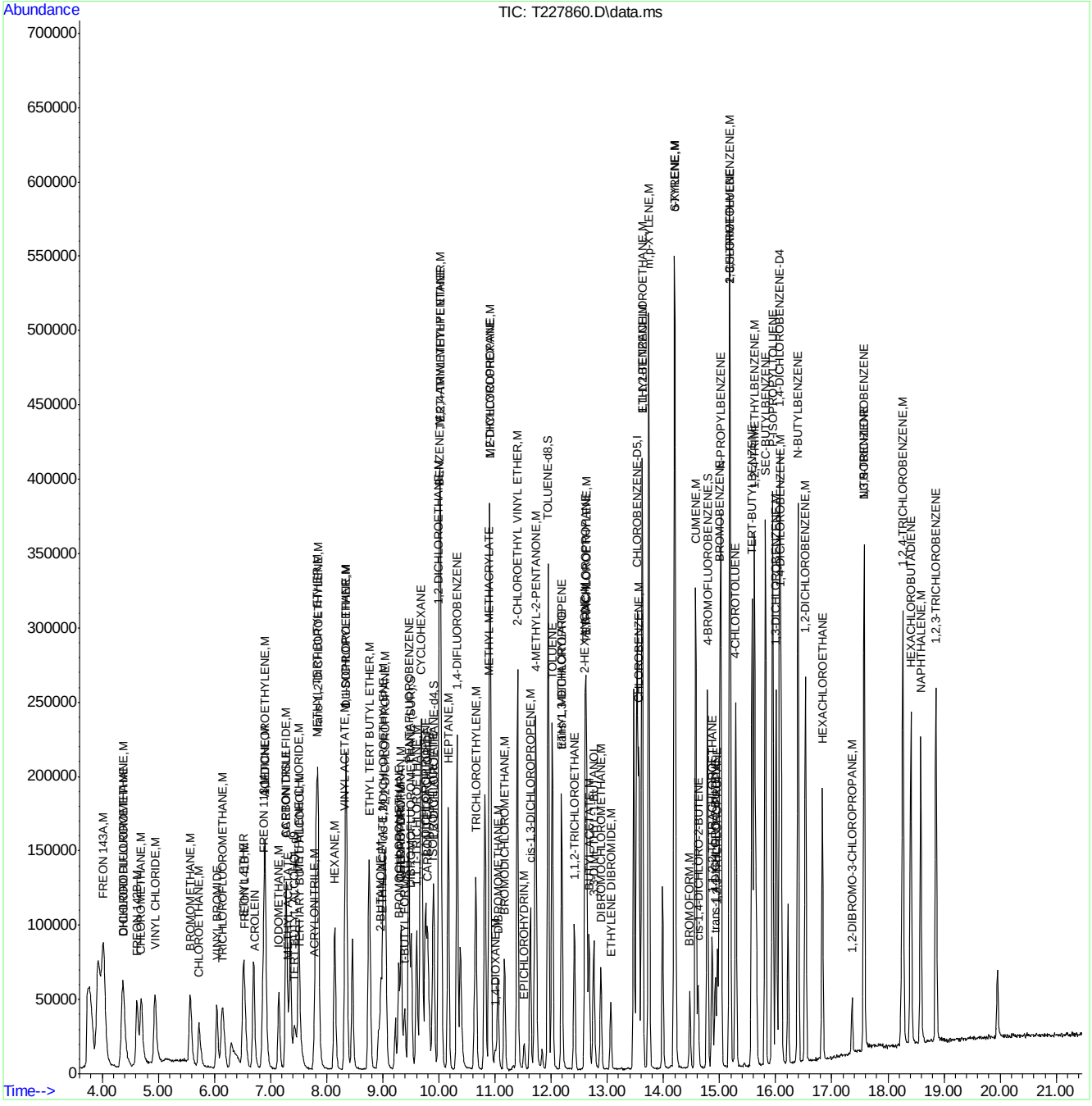
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
95) BROMOBENZENE	15.004	156	57790	20.42	PPB		94
96) 2-CHLOROTOLUENE	15.181	126	58480	20.53	PPB		96
97) 4-CHLOROTOLUENE	15.286	91	162528	20.15	PPB		95
98) 1,3,5-TRIMETHYLBENZENE	15.187	105	210209	21.06	PPB		99
99) TERT-BUTYLBENZENE	15.579	119	181950	19.79	PPB		100
100) 1,2,4-TRIMETHYLBENZENE	15.621	105	217762	21.07	PPB		99
101) SEC-BUTYLBENZENE	15.814	105	296794	20.04	PPB		98
102) P-ISOPROPYLTOLUENE	15.945	119	248378	21.18	PPB		98
103) 1,3-DICHLOROBENZENE	16.013	146	119673	20.39	PPb		96
104) 1,4-DICHLOROBENZENE	16.097	146	121729	20.12	PPb		98
105) N-BUTYLBENZENE	16.400	134	62583	20.56	PPB		97
106) 1,2-DICHLOROBENZENE	16.531	146	123396	19.97	PPb		98
107) HEXACHLOROETHANE	16.834	203	27316	19.71	PPB		93
108) 1,2-DIBROMO-3-CHLOROPR...	17.357	157	12623	19.57	PPB		85
109) HEXACHLOROBUTADIENE	18.408	225	61050	19.41	PPB		100
110) 1,3,5-TRICHLOROBENZENE	17.577	180	132336	21.34	PPB		99
111) NITROBENZENE	17.582	77	3995	18.35	PPB	#	77
112) 1,2,4-TRICHLOROBENZENE	18.267	180	110194	19.79	PPB		99
113) 1,2,3-TRICHLOROBENZENE	18.858	180	97966	20.24	PPB		99
114) NAPHTHALENE	18.586	128	196853	20.15	PPb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDChem\1\DATA\
Data File : T227860.D
Acq On : 9 Nov 2017 6:50 am
Operator : CHELSEAS
Sample : icv9358-20
Misc : MS21916,VT9358,W,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 13 12:32:12 2017
Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Fri Nov 10 15:42:16 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9392\
Data File : t228686.d
Acq On : 12 Dec 2017 7:49 am
Operator : CHELSEAS
Sample : cc9358-20 Inst : GCMST
Misc : MS22930,VT9392,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 02:36:19 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Sat Dec 09 01:17:20 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) TERT BUTYL ALCOHOL-d9	7.427	65	102767	300.00	PPb		0.00
4) PENTAFLUOROBENZENE	9.461	168	168284	30.00	PPB		0.00
49) 1,4-DIFLUOROBENZENE	10.319	114	261009	30.00	PPb		0.00
66) CHLOROBENZENE-D5	13.525	117	250821	30.00	PPb		0.00
89) 1,4-DICHLOROBENZENE-D4	16.067	152	146142	30.00	PPB		0.00
System Monitoring Compounds							
45) DIBROMOFLUOROMETHANE (...	9.503	113	76943	33.17	PPb		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 110.57%				
50) 1,2-DICHLOROETHANE-d4	9.906	65	84484	33.80	PPB		0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 112.67%				
67) TOLUENE-d8	11.940	98	332678	31.11	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 103.70%				
90) 4-BROMOFLUOROBENZENE	14.780	174	102369	29.29	PPB		0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.63%				
Target Compounds							Qvalue
2) TERTIARY BUTYL ALCOHOL	7.531	59	38972	98.23	PPb		95
3) 1,4-DIOXANE	10.999	88	15009	467.79	PPb		95
5) CHLORODIFLUOROMETHANE	4.362	51	132007	21.17	PPB		94
6) DICHLORODIFLUOROMETHANE	4.362	85	107549	17.58	PPb		96
9) CHLOROMETHANE	4.691	50	118081	19.46	PPb		95
10) VINYL CHLORIDE	4.937	62	128307	20.96	PPb		98
11) BROMOMETHANE	5.559	96	76123	23.17	PPb		98
12) CHLOROETHANE	5.722	64	65104	23.29	PPb		98
13) VINYL BROMIDE	6.041	106	60452	23.75	PPB		96
14) TRICHLOROFLUOROMETHANE	6.140	101	91561	21.09	PPb		95
17) ETHYL ETHER	6.511	74	32428	24.89	PPB		87
18) 1,1-DICHLOROETHYLENE	6.898	61	90882	22.42	PPb		96
19) FREON 113	6.883	151	54206	19.90	PPb		97
20) ACROLEIN	6.715	56	10039	24.50	PPB	#	70
21) ACETONE	6.904	58	17908	90.53	PPb		86
22) CARBON DISULFIDE	7.270	76	223184	23.13	PPb		97
23) IODOMETHANE	7.144	142	98376	21.07	PPb		93
24) ACETONITRILE	7.280	41	88638	244.96	PPB		92
25) METHYL ACETATE	7.317	43	41482	22.01	PPB		97
26) METHYLENE CHLORIDE	7.505	84	65357	22.87	PPb		96
27) ACRYLONITRILE	7.772	53	21282	24.64	PPb		99
28) METHYL TERT BUTYL ETHER	7.814	73	195586	23.06	PPb		97
29) trans-1,2-DICHLOROETHY...	7.850	61	89659	23.94	PPb		95
30) HEXANE	8.143	57	84934	22.12	PPb		97
31) 1,1-DICHLOROETHANE	8.352	63	110458	23.71	PPb		99
32) VINYL ACETATE	8.321	86	8789	26.70	PPb	#	49
33) DI-ISOPROPYL ETHER	8.337	45	265675	25.11	PPb		91
34) ETHYL TERT BUTYL ETHER	8.755	59	226747	24.16	PPb		98
35) 2-BUTANONE	8.959	72	21013	94.39	PPb		95
36) cis-1,2-DICHLOROETHYLENE	9.006	96	62651	21.85	PPb		89
37) 2,2-DICHLOROPROPANE	9.032	77	106760	23.45	PPB		93
38) ETHYL ACETATE	8.975	45	8613	26.41	PPb	#	29
39) BROMOCHLOROMETHANE	9.283	128	27661	23.06	PPB		90
40) TETRAHYDROFURAN	9.336	42	19947	26.63	PPb		94
41) CHLOROFORM	9.325	83	94836	23.73	PPb		98
42) t-BUTYL FORMATE	9.383	59	34108	111.06	PPB		96
43) 1,1,1-TRICHLOROETHANE	9.597	97	96558	22.42	PPb		94
44) CYCLOHEXANE	9.691	84	103775	20.60	PPB		96
46) 1,1-DICHLOROPROPENE	9.754	75	74568	22.18	PPB		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9392\
Data File : t228686.d
Acq On : 12 Dec 2017 7:49 am
Operator : CHELSEAS
Sample : cc9358-20 Inst : GCMST
Misc : MS22930,VT9392,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 02:36:19 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Sat Dec 09 01:17:20 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
47)	CARBON TETRACHLORIDE	9.791	117	81182	21.34	PPB		98
48)	ISOPROPYL ACETATE	9.890	87	10781	23.50	PPB	#	86
51)	BENZENE	10.000	78	244581	20.95	PPb		99
52)	1,2-DICHLOROETHANE	9.989	62	66376	22.51	PPb		96
53)	2,2,4-TRIMETHYLPENTANE	10.026	57	258253	18.60	PPB		95
54)	TERT-AMYL METHYL ETHER	10.026	73	212695	21.57	PPb		98
55)	HEPTANE	10.167	57	50119	19.99	PPb		95
56)	TRICHLOROETHYLENE	10.659	95	55838	20.54	PPb		95
57)	1,2-DICHLOROPROPANE	10.910	63	69303	21.09	PPb		98
58)	DIBROMOMETHANE	11.046	93	32224	21.61	PPB		93
59)	METHYL METHACRYLATE	10.894	100	11929	21.42	PPB	#	65
60)	METHYLCYCLOHEXANE	10.905	83	131228	18.94	PPB		97
61)	BROMODICHLOROMETHANE	11.166	83	72557	21.60	PPb		96
62)	2-CHLOROETHYL VINYL ETHER	11.396	63	173430	155.69	PPb		99
63)	EPICHLOROHYDRIN	11.511	57	26095	117.31	PPb		99
64)	cis-1,3-DICHLOROPROPENE	11.626	75	94982	20.76	PPb		92
65)	4-METHYL-2-PENTANONE	11.726	58	91446	86.30	PPb		91
68)	TOLUENE	12.019	92	146017	20.53	PPB		99
69)	ETHYL METHACRYLATE	12.186	69	72692	22.23	PPB		94
70)	trans-1,3-DICHLOROPROPENE	12.181	75	82977	21.90	PPB		95
71)	1,1,2-TRICHLOROETHANE	12.411	83	41981	21.37	PPB		97
72)	TETRACHLOROETHYLENE	12.625	164	44673	18.40	PPb		87
73)	2-HEXANONE	12.599	58	83289	83.76	PPb		94
74)	1,3-DICHLOROPROPANE	12.610	76	81299	21.24	PPB		90
75)	BUTYL ACETATE	12.672	56	39201	22.53	PPb		99
76)	3,3-DIMETHYL-1-BUTANOL	12.756	57	74173	213.02	PPB		94
77)	DIBROMOCHLOROMETHANE	12.882	129	50300	20.16	PPb		91
78)	ETHYLENE DIBROMIDE	13.054	107	46524	21.85	PPb		89
79)	CHLOROBENZENE	13.562	112	160100	20.19	PPb		99
80)	1,1,1,2-TETRACHLOROETHANE	13.614	131	65397	20.29	PPB		99
81)	ETHYLBENZENE	13.624	91	278451	20.63	PPb		99
82)	m,p-XYLENE	13.739	106	213769	41.15	PPb		99
83)	o-XYLENE	14.194	91	242165	20.68	PPb		97
84)	STYRENE	14.194	104	172960	20.43	PPb		99
86)	BROMOFORM	14.472	173	31379	18.01	PPb		96
87)	CUMENE	14.571	105	305702	20.44	PPb		100
88)	cis-1,4-DICHLORO-2-BUTENE	14.618	88	13851	16.10	PPB		97
91)	1,1,2,2-TETRACHLOROETHANE	14.864	83	74940	21.34	PPB		99
92)	trans-1,4-DICHLORO-2-B...	14.916	53	12528	16.95	PPB	#	79
93)	1,2,3-TRICHLOROPROPANE	14.958	110	15999	21.99	PPB		91
94)	N-PROPYLBENZENE	15.021	91	356964	21.15	PPB	#	97
95)	BROMOBENZENE	15.000	156	68661	19.61	PPB		97
96)	2-CHLOROTOLUENE	15.178	126	71939	20.41	PPB		90
97)	4-CHLOROTOLUENE	15.288	91	205339	20.57	PPB		98
98)	1,3,5-TRIMETHYLBENZENE	15.183	105	263887	21.36	PPB		97
99)	TERT-BUTYLBENZENE	15.575	119	226445	19.90	PPB		96
100)	1,2,4-TRIMETHYLBENZENE	15.617	105	266140	20.81	PPB		98
101)	SEC-BUTYLBENZENE	15.816	105	365326	19.93	PPB		98
102)	P-ISOPROPYLTOLUENE	15.941	119	295916	20.39	PPB		98
103)	1,3-DICHLOROBENZENE	16.004	146	142066	19.55	PPb		97
104)	1,4-DICHLOROBENZENE	16.098	146	147075	19.64	PPb		96
105)	N-BUTYLBENZENE	16.396	134	74801	19.85	PPB		93
106)	1,2-DICHLOROBENZENE	16.532	146	149171	19.51	PPb		100
107)	HEXACHLOROETHANE	16.830	203	30823	17.97	PPB		91
108)	1,2-DIBROMO-3-CHLOROPR...	17.359	157	15048	18.85	PPB		83
109)	HEXACHLOROBUTADIENE	18.405	225	67755	17.40	PPB		97
110)	1,3,5-TRICHLOROBENZENE	17.573	180	143671	18.72	PPB		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9392\
Data File : t228686.d
Acq On : 12 Dec 2017 7:49 am
Operator : CHELSEAS
Sample : cc9358-20 Inst : GCMST
Misc : MS22930,VT9392,W,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9358.M
Quant Results File: MT9358.RES
Quant Time: Dec 14 02:36:19 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Sat Dec 09 01:17:20 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
111) NITROBENZENE	17.578	77	4444	16.49	PPB	#	55
112) 1,2,4-TRICHLOROBENZENE	18.263	180	128393	18.63	PPB		98
113) 1,2,3-TRICHLOROBENZENE	18.854	180	104452	17.44	PPB		94
114) NAPHTHALENE	18.582	128	219327	18.14	PPb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9392\
Data File : t228686.d
Acq On : 12 Dec 2017 7:49 am
Operator : CHELSEAS
Sample : cc9358-20 Inst : GCMST
Misc : MS22930,VT9392,W,,,,1
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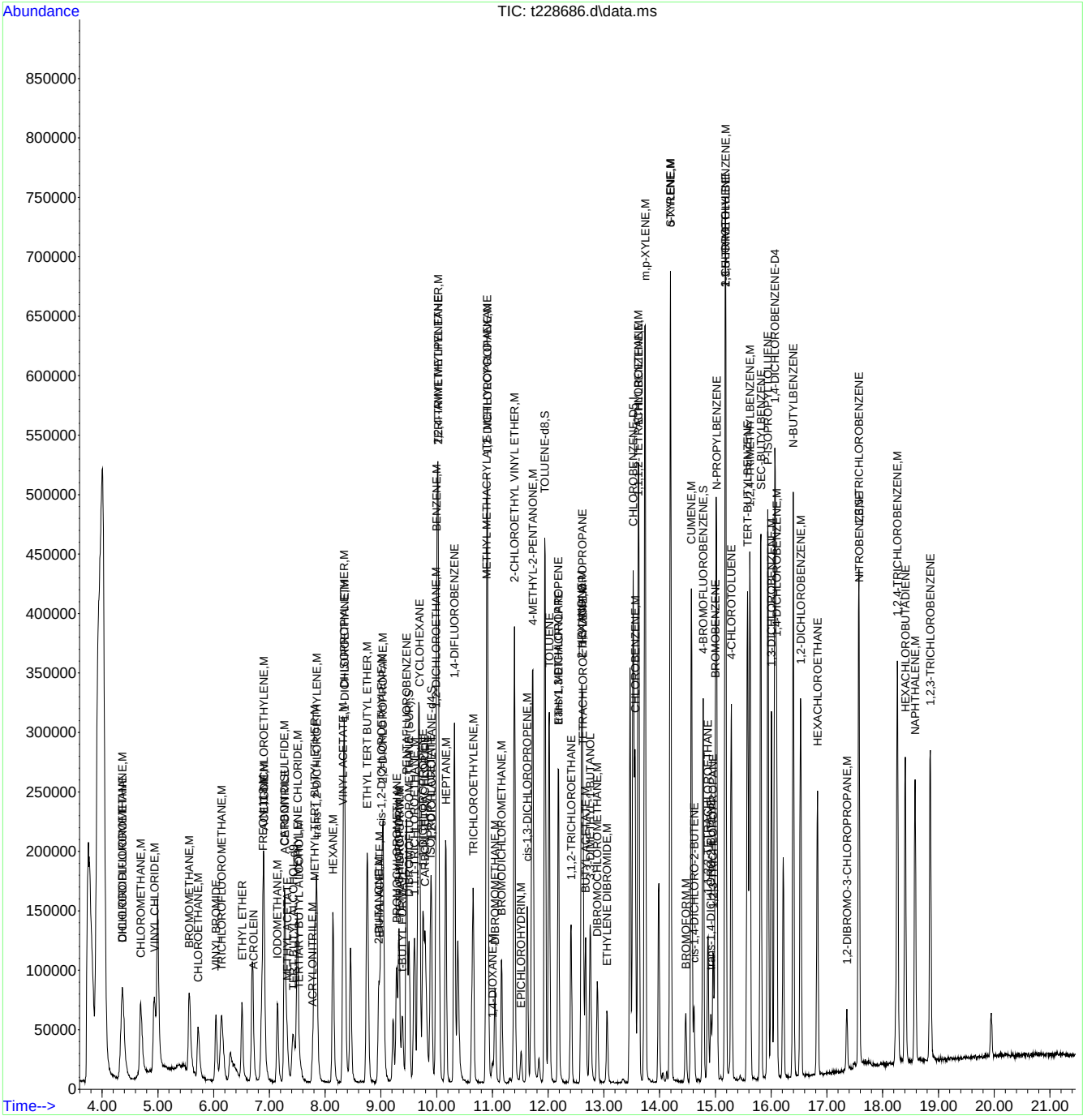
Quant Time: Dec 14 02:36:19 2017
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Sat Dec 09 01:17:20 2017
Response via : Initial Calibration



SGS

VOLATILE ANALYSIS LOG

Batch ID: VN 11221

Date: 11/30/2017.

Print Analyst Name: AUSTIN PARK

Analyst Signature:

Columns: RX1624 (60mx 0.32mmx 1.8µm)

Method V8260C

Initial Cal. Method ~~MN11119~~ MN11221 JP 11/30

Standard Data

Lot #		Description	Conc.
017-2814-68	18	ABK	100ppm
017-2814-59	22	E	100ppm
017-2814-45	4	C	100ppm
017-2814-31	5	FREON MIX	100ppm
017-2814-64	INT/SUR		250/150/625ppm JP 11/30

Standard Data

Lot #		Description	Conc.
017-2814-62	9	EXT-AB MIX	100ppm
017-2814-48	10	EXT. Hexane	100ppm.
017-2814-73	2	EXT. E	100ppm.
017-2814-76	3	EXT. C	100ppm
017-2814-33	1	EXT. F143A	100ppm
017-2814-32.1		EXT. F14B + F142B	100ppm.

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: Date: 12/1/2017

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N266321	BFB.				1							ok		
	266322	IC11221-0.5	624 initial calibration	AQ		2	5						ok	0.5µL ABK-C-E FREON MIX / 100mL	
	266323	IC11221-0.2	v	AQ		3	5						ok	0.2µL ABK-C-E FREON MIX / 100mL	
	266324	IC11221-1	v	AQ		4	5						ok	1µL ABK-C-E FREON MIX / 100mL	
	266325	IC11221-2	v	AQ		5	5						ok	2µL ABK-C-E FREON MIX / 100mL	
	266326	IC11221-5	v	AQ		6	5						ok	5µL ABK-C-E FREON MIX / 100mL	
	266327	IC11221-20	✓	AQ		7	5						ok	20µL ABK-C-E FREON MIX / 100mL	
	266328	IC11221-50	✓	AQ		8	5						ok	50µL ABK-C-E FREON MIX / 100mL	
	266329	IC11221-100	✓	AQ		9	5						ok	100µL ABK-C-E FREON MIX / 100mL	
	266330	IC11221-200	✓	AQ		10	5						ok	200µL ABK-C-E FREON MIX / 100mL	
	266331	IB				11							clip		
	266332	IB				12							clip		
	266333	ICV11221-20	✓	AQ		13	5						ok	20µL EXT-AB, EXT-E EXT-Hexane EXT-C, EXT-F143A EXT-F14B/142B / 100mL	
	266334	IB.				14									

11/30/2017

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

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Form: OR001-10

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11223

Date: 12.4.17

Print Analyst Name: Chelsea SanFilippo

Analyst Signature: CWS

Columns: RXI624(60mx0.25mmx1.4um

Method: V624

Initial Cal. Method: MN11221

Standard Data

Lot #	Description	Conc.
VO172574-704	1,3 Butadiene	100ppm
VO172574-836.1	1,3 Butadiene ext.	100ppm
VO172574-64	IS	150/1500

Standard Data

Lot #	Description	Conc.

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: _____ Date: 12/5/2017

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N2d6343	BFB		A		1	5						ok	2:36pm	
	2d6344	IC11221-0.5	624 1,3 Butadiene IC	A		2	5						ok	1ul 1,3 Butadiene/ 200mL	
	2d6345	IC11221-1.0	✓	A		3	5						ok	2ul 1,3 Butadiene/ 200mL	
	2d6346	IC11221-2.0	✓	A		4	5						ok	4ul 1,3 Butadiene/ 200mL	
	2d6347	IC11221-5.0	✓	A		5	5						ok	5ul 1,3 Butadiene/ 100mL	
	2d6348	IC11221-20.0	✓	A		6	5						ok	20ul 1,3 Butadiene/ 100mL	
	2d6349	IC11221-50.0	✓	A		7	5						ok	25ul 1,3 Butadiene/ 50mL	
	2d6350	IC11221-100.0	✓	A		8	5						ok	100ul 1,3 Butadiene/ 100mL	
	2d6351	IC11221-200.0	✓	A		9	5						ok	100ul 1,3 Butadiene/ 50mL	
	2d6352	IB				10	5								
	2d6353	IB				11	5								
	2d6354	ICV11221-20.0	✓	A		12	5						ok	20ul ext. 1,3 Butadiene/ 100mL	
	2d6355	IB				13	5								
													CWS 12.4.17		

MTX = Matrix Designate W for water, S for soil, O for oil. L+ = Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

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7.8.2

7

Notes

Concentration	Initial IS Area	Addended IS area	Compound area	adjusted compound area
~~0.2~~	182189	212010	2045	1757
0.5	227072	215821 ✓	2320	2441
1	223746	227717 ✓	3979	3910
2	232828	222120 ✓	6350	6656
~~4~~ 5	227336	215108 ✓	16418	17351
~~8~~ 12/5/17	204428	180768	75755	85670
20	221089	225676 ✓	89738	87914
50	248191	216807 ✓	215243	246401
100	261236	217453 ✓	476458	572390
200	279614	208171 ✓	891433	1197367

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SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11233

Print Analyst Name: Chelsea San Filippo

Date: 12.12.17

Analyst Signature: CVS

Columns: RXI624 (60m x 0.25mm x 1.4um)

Method VC624

Initial Cal. Method MTXVN11221 CVS 12.12.17

Standard Data

Lot #	Description	Conc.
VON2574-77.16	A/B/K	100ppm
VON2574-96.6	C	100ppm
VON2574-59.36	E	100ppm
VON2574-104	IS	150/50
PA	216315	

Standard Data

Lot #	Description	Conc.
VON2574-80.1	Ext. A/B/K	100ppm
VON2574-92.2	Ext. C	100ppm
VON2574-73.3	Ext. E	100ppm
VON2574-93.1	Ext. hex	100ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: Bailey Date: 12/14/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N266563	BFB				1	5				W		OK	8:31 AM	
	266564	CC11221-20				2	5				W		NG		
	266565	CC11221-20				1	5				W		OK	20ul A/B/K, C, E/100mL	
	266566	MB				2	5				W		OK		
	266567	BS				1	5				W		OK	20ul ext. A/B/K, C, E, hex. /100mL	
R	266568	JC56766-3	22907 TCE	GW	2	2	1/50		50X		W		OK		✓
R	266569	JC56766-10	✓	GW	3	3	5		1X		W		OK		✓
R	266570	JC56766-4	✓	GW	2	4	25/50		2X		W		OK		✓
R	266571	JC56756-2	22909 PPL, MTBE	IN	2	5	2.5/50		20X		W		OK		✓
R	266572	JC56709-2	22868 SL	GW	1	6	5		1X		W		OK		✓
R	266573	JC56709-1	✓	GW	3	7	.1/50		500X		W		OK		✓
	266574	JC57095-1	23068 TVO, UWPB	MW	19	8	5		1X		W		ICR	1X BS Hit	7
	266575	JC56762-1	22907 TCE	GW	3	9	5		1x		W		OK		✓
	266576	JC57055-1	22986 SL	GW	3	10	5		1x		W		OK	VC 0.11	✓
	266577	JC57055-2	✓	GW	3	11	5		1x		W		OK	VC 0.11	✓
	266578	JC57059-1	22983 PPL	GW	3	12	5		1x		W		OK		✓
	266579	JC57059-2	✓	GW	4	13	5		1x		W		OK		✓

MTX = Matrix Designate W for water, S for soil, O for oil. L+ = Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

GBS

Form: OR001-10
Rev. Date: 1/19/16

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11233

Date: 12/12/17

Print Analyst Name: Chelsea SanFilippo

Analyst Signature: CWS

Columns: RXI624(60mx0.25mmx1.4um)

Method V624

Initial Cal. Method MN11221

Standard Data

Lot #	Description	Conc.
	pg. 1	

Standard Data

Lot #	Description	Conc.
	pg. 1	

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: BKelly Date: 12/14/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N266580	JC57059-3	22983 PPL	GW	3	14	5		1X		W	W	OK		✓
	266581	JC57059-4	✓	GW	3	15	5		1X		W	W	OK		✓
	266582	JC57059-5	✓	GW	4	16	5		1X		W	W	OK		✓
	266583	JC57059-6	✓	GW	3	17	5		1X		W	W	OK		✓
	266584	JC56947-1MS	22984 TTO	WW	3	18	2.5/50		20X		W	W	OK	zone ext. A/B/K	✓
	266585	JC56947-1MSD	✓	WW	3	19	2.5/50		20X		W	W	OK	C,E, hex. 100mL	✓
	266586	16				20	5				W	W	OK		
	266587	JC56762-2	22907 TCE	WT	3	21	5		1X		W	W	OK		✓
	266588	JC56947-1	22984 TTO	WW	3	22	2.5/50		20X		W	W	OK		✓
	266589	JC56837-1	22929 BTX	SW	5	23	5		1X		W	W	OK		✓
	266590	JC56837-2	✓	SW	6	24	5		1X		W	W	OK		✓

CWS 12.13.17

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

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Form: OR001-10
Rev. Date: 1/19/16

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11234

Date: 12·12·17

Print Analyst Name: Chelsea San Filippo

Analyst Signature: CVS

Columns: RXI624/60m x 0.25mm x 14

Method V624

Initial Cal. Method MN11221

Standard Data

Lot #	Description	Conc.
V0172574-80.1 Ext. A/B/K		100ppm
V0172574-92.2 Ext. C		100ppm
V0172574-73.3 Ext. E		100ppm
V0172574-93.1 Ext. Hex		100ppm
V0172574-64 I/S		150/1500

Standard Data

Lot #	Description	Conc.
pH	216315	

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 12/14/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* < 2
	N266591	1B				25	5				W		OK		
	266592	mb				26	5				W		OK		
	266593	BS				27	5				W		OK	20 ul ext. A/B/K, C, E, hex. 1100mL	
	266594	JC56966-9ms	22980 TCE 12DCE	G W	4	28	5		1X		W		OK	9 ul ext A/B/K, C, E, hex. 140mL	✓
	266595	JC56966-9msd	DCE, T12DCE ✓	G W	7	29	5		1X		W		OK		✓
	266596	1B				30	5				W		OK		
	266597	JC56966-9 CVS12-12-17	22980 TCE 12DCE	G W	6	31	5		1X		W		OK		✓
	266598	JC56966-1	DCE, T12DCE ✓	G W	2	32	5		1X		W		OK		✓
	266599	JC56966-2	✓	G W	1	33	5		1X		W		OK		✓
	266600	JC56966-3	✓	G W	1	34	5		1X		W		OK		✓
	266601	JC56966-4	✓	G W	2	35	5		1X		W		OK		✓
	266602	JC56966-5	✓	G W	2	36	5		1X		W		OK		✓
	266603	JC56966-7	✓	G W	2	37	5		1X		W		OK		✓
	266604	JC56966-8	✓	G W	2	38	5		1X		W		OK	6:27AM	✓
														CVS 12·13·17	

MTX = Matrix Designate W for water, S for soil, O for oil. L+ = Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

GBS

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7.8.4

7

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11237

Date: 12-14-17

Print Analyst Name: Chelsea SanFilippo

Analyst Signature: CVS

Columns: RXI624 (60m x 0.25mm x 1.4)

Method VL624

Initial Cal. Method MN11221

Standard Data

Lot #	Description	Conc.
VO172714	-77.16 A|B|K	100ppm
VO172714	-96.6 C	100ppm
VO172714	-59.36 E	100ppm
VO172714	-64 IS	150|1500
pH	216315	

Standard Data

Lot #	Description	Conc.
VO172714	-80.1 Ext. A|B|K	100ppm
VO172714	-97.5 Ext. C	100ppm
VO172714	-73.5 Ext. E	100ppm
VO172714	-93.1 Ext Hex	100ppm
VO172714	-70 1,3 Butadiene	100ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: _____ Date: 12/14/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N266652	BFB				1	5				W	CV		8:26 AM	
	266653	CCV221-20				2	5				W	CV		20ME A|B|K, C, E, hex, 1,3 BUTKIene/100ML	
	266654	MB				1	5				W	CV			
	266655	BS				2	5				W	CV		20ME EXT. A|B|K, C, E, hex. /100ML	
	266656	IB				3	5				W	CV			
R	266657	JCS7306-5	23149 PPLT,	GW	3	4	5		1X		W	CV		MTBE, UNPR3	6
	266658	JCS7274-1	23126 PPLT,	EF	7	5	5		1X		W	CV		CS2, MEK, MIBK, MMC, Styr, UNPR3	6
	266659	JCS7274-7	CVS 12/14	IN	1	6	5		1X		W	CV	FID	RR10X	6
R	266660	JCS7306-6	23149 PPLT,	GW	2	7	5		1X		W	CV		MTBE, UNPR3	6
R	266660A	JCS7274-4		GW	1		5/50		10X		W	CV		22126	
	266661	JCS7306-7	✓	GW	2	8	5/50		10X		W	CV	HID	RR5X	6
	266662	JCS7306-8	✓	IN	2	9	5/50		10X		W	CV			6
R	266663	JCS7306-7	✓	GW	2	10	10/50		5X		W	CV			6
	266664	JCS7306-7 ms	✓	GW	2	11	10/50		5X		W	CV			6
	266665	JCS7306-7 msd	✓	GW	2	12	10/50		5X		W	CV		20ME EXT. A|B|K, C, E, hex. /100ML	6
	266666	IB				13	5				W	CV			6
	266667	JCS7306-9	✓	WB	1	14	5		1X		W	CV			
	266668	JCS7307-2	✓	WB	1	15	5		1X		W	CV			6

MTX = Matrix Designate W for water, S for soil, O for oil. L+ = Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

GBS

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11237

Date: 12·14·17

Print Analyst Name: Chelsea San Filippo

Analyst Signature: CVS

Columns: RXI 624 (60m x 0.25mm x 1.4µm)

Method: V624

Initial Cal. Method: MN11221

Standard Data

Lot #	Description	Conc.
	pg. 15	

Standard Data

Lot #	Description	Conc.
	pg. 15	

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 12/28/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* < 2
	N266669	JCS7141-8	23086 60IL	WTB	1	16	5		1X		✓		OW		✓
	266670	JCS7141-9	✓	WTB	2	17	5		1X		✓		OW		✓
	266671	JCS7141-2	✓	GW	5	18	2/50		25X		✓		OW	OIDRRIOX	✓
	266672	JCS7141-1	✓	GW	5	19	5		1X		✓		OW		✓
	266673	JCS7141-3	✓	GW	8	20	5		1X		✓		OW		✓
	266674	JCS7141-4	✓	GW	5	21	5		1X		✓		OW		6
	266675	JCS7141-5	✓	GW	5	22	5		1X		✓		OW		✓
	266676	JCS7141-6	✓	GW	6	23	5		1X		✓		OW		4
	266677	JCS7141-7	✓	GW	6	24	5		1X		✓		RR	matrix clu	✓
	266678	JCS6966-14	22980 TCE	GW	2	25	5		1X		✓		RR	DCE, 12DCE, T12DCE	✓
	266679	JCS6966-16	✓	GW	1	26	5		1X		✓		OW		✓
	266680	JCS6966-18	✓	GW	2	27	5		1X		✓		OW		✓
	266681	JC34439-5D	11128	AQ		28	5				✓		OW	1PPB MDL for 1,3Butadiene 5ul 1,3Butadiene/500ML	
	266682	JC34439-5D		AQ		29	5				✓		OW	↓	↓
	266683	JC34439D-5D	20553	AQ		30	5				✓		OW	Q4 1PPB MDL for 1,3Butadiene	↓

CVS 12·14·17

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

GBS

17

7.8.5

7

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN ~~11239~~ 11239 BU421R

Print Analyst Name: Bridget Kelly

Date: 12/15/17

Analyst Signature: Bridget Kelly

Columns: Rx1 624 (60m x 0.25mm x 1.4µm)

Method V624

Initial Cal. Method MN1121

Standard Data

Lot #	Description	Conc.
1012574 79 (17)	ABK	100 ppm
1012574 96 (6)	C	100 ppm
1012574 59 (36)	E	100 ppm
1012574 64	IS	250/250
216315	pH paper	

Standard Data

Lot #	Description	Conc.
1012574 80 (3)	Ext ABK	100 ppm
1012574 97 (5)	Ext C	100 ppm
1012574 73 (5)	Ext E	100 ppm
1012574 93 (1)	Ext hex	100 ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 12/18/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N 266695	RB				1							ok		
	266696	BFB				2							ok	7:22am	
	266697	CC11221-20				3							ok	#21, 24 ↑ 20ul ABK CE 1/100ml	
	266698	MB				4					✓		ok		
	266699	JC57333-1	23168 PPI MTBE	D W		5	S		1X		✓		ok	unpr3	7
	266700	BS				6	S				✓		ok	MeCl ↑ #25 20ul EXT ABK CE hex/100ml	
	266701	RB				7	S				✓		ok		
	266702	JC57342-2	23168 SL unpr3	W B	7	8	S		1X		✓		ok		6
	266703	JC57342-1	✓	W B	1	9	S		1X		✓		ok		6
	266704	JC57351-4	✓	S W		10	S		1X		✓		ok		6
	266705	JC57351-3	✓	O W		11	S		1X		✓		ok		7
	266706	JC57342-3	✓	O W	9	12	S		1X		✓		ok		7
	266707	JC57342-4	✓	O W	9	13	S		1X		✓		ok		6
	266708	JC56966-34	22980 TCE, 12DCE	G W	1	14	S		1X		✓		ok	DCE, T12DCE	✓
	266709	JC57351-4MS	23168 SL	S W	15	15	S		1X		✓		ok	unpr3 ~~20~~ 8ul EXT ABK CE hex/40ml	7
	266710	RB				16	S		1X		✓		ok	BU421SO	~~7~~ CVS1218
	266711	JC57351-3dup	23168 SL	G W	14	17	S		1X		✓		ok	unpr3	7

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

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Form: OR001-10
Rev. Date: 1/19/16

7.8.6 7

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11239 JT 12/15

Date: 12/15/17

Print Analyst Name: Bridget Kelly

Analyst Signature: Bridget Kelly

Columns: RX1624 (60m x 0.25mm x 1.4µm)

Method V624

Initial Cal. Method MN11221

Standard Data		
Lot #	Description	Conc.

Standard Data		
Lot #	Description	Conc.

SOP 221

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 12/18/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N 266712	JC57351-1	23168 SL	WTB	1	18	5		1x		W		ok	UNPr3	7
	266713	JC57351-2	✓	WFB	14	19	5		1x		W		ok	UNPr3	7
R	266714	JC56966-14	22980 TCE,12DCE	GW	1	20	5		1x		W		ok		✓
	266715	JC56966-36	DCE TPDCE ✓	GW	1	21	5		1x		W		ok		✓
	266716	JC56966-35	✓	GW	2	22	12.5/50		4x		W		ok		✓
	266717	JC56966-37	✓	GW	1	23	5		1x		W		ok		✓
	266718	JC56966-38	✓	GW	2	24	5		1x		W		ok		✓
	266719	JC56966-39	✓		2	25	12.5/50		4x		W		ok		✓
	266720	JC56966-19	CVJ 12-18-17 ✓	GW	1	26	5		1x		W		ok		✓
	266721	JC56966-20	✓	GW	1	27	5		1x		W		ok		✓
	266722	JC56966-21	✓	GW	2	28	5		1x		W		ok		✓
	266723	JC56966-23	✓	GW	2	29	5		1x		W		ok		✓
	266724	16				30	5				W		ok		

CVJ 12-18-17

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

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Form: OR001-10
Rev. Date: 1/19/16

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Instrument Run Log VN11239 page 2 of 2

JC56966

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN 11240

Date: 12/15/17

Print Analyst Name: Bridget Kelley

Analyst Signature: Bridget Kelley

Columns: Rx1 624 (60m × 0.25mm × 1.4µm)

Method V 624

Initial Cal. Method MN11221

Standard Data

Lot #	Description	Conc.
V072574-79(17)	ABK	100 ppm
V072574 96(6)	C	100 ppm
V072574 59(36)	E	100 ppm
V072574 64	IS	250 25 ppm
216315	pH paper	

Standard Data

Lot #	Description	Conc.
V072574 80(3)	Ext ABK	100 ppm
V072574 97(5)	Ext C	100 ppm
V072574 73(5)	Ext E	100 ppm
V072574 93(1)	Ext hex	100 ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 12/15/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* < 2
	N266725	Mb				31					W		ok		
	266726	bs				32					W		ok	20uL EXT ABK CE/100mL	
	266727	jc57152-1 ms	23092 BTXMT	IN	2	33	2.5/50		20x		W		ok	20uL EXT ABK CE/100mL	✓
	266728	jc57152-1 msd	✓	IN	2	34	2.5/50		20x		W		ok		✓
	266729	lb				35	5				W		ok		
	266730	jc57152-1	23092 BTXMT	IN	2	36	2.5/50		20x		W		ok		✓
	266731	jc57152-1	✓	IN	2	37	0.25/50		200x		W		ok		✓
	266732	jc57152-2	✓	EF	2	38	5		1x		W		ok		✓
	266733	jc56966-24	22980 TCE,12DCE	GW	1	39	5		1x		W		ok		✓
	266734	jc56966-25	DCE, T12DCE ✓	GW	2	40	5		1x		W		ok		✓
	266735	jc56966-26	✓	GW	2	41	5		1x		W		RR	1X BS Hit	✓
	266736	jc56966-27	✓	GW	2	42	5		1x		W		ok		✓
	266737	jc56966-28	✓	GW	1	43	5		1x		W		RR	1X BS Hit	✓
	266738	jc56966-29	✓	GW	1	44	5		1x		W		ok		✓
	266739	jc56966-30	✓	GW	2	45	5		1x		W		ok		✓
	266740	jc56966-32	✓	GW	2	46	5		1x		W		RR	1X BS Hit	✓
	266741	jc56966-33	✓	GW	1	47	5		1x		W		ok		✓

MTX = Matrix Designate W for water, S for soil, O for oil. L+ = Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt. = volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

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7.8.7

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SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11240

Date: 12/15/17

Print Analyst Name: Bridget Kelly

Analyst Signature: Bridget Kelly

Columns: RTX1624

Method V624

Initial Cal. Method VN11221

Standard Data		
Lot #	Description	Conc.

Standard Data		
Lot #	Description	Conc.

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: _____ Date: 12/18/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N266742	JC56966-15	22980 TCE, 12DCE	GW	2	48	5		1X		W		RR	1X/10X BS Hit	✓
	266743	JC56966-22	PCE, T12DCE ✓	GW	2	49	5		1X		W		RR	7:04AM 1X BS Hit 10X	✓
	266744	JC56966-17	✓	GW	2	50	2.5/50		20x		W		RR	Screen purpose. 1X	✓

CWS 12.18.17

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

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Form: OR001-10
Rev. Date: 1/19/16

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11241

Date: 12.18.17

Print Analyst Name: ChelseaSanFil.ppo

Analyst Signature: CWS

Columns: RXI624(60mX0.25mmx1.4u

Method: V624

Initial Cal. Method: MN11221

Standard Data

Lot #	Description	Conc.
VOM2514-79.34	A|B|K	100ppm
VOM2514-101.5	C	100ppm
VOM2514-59.36	E	100 ppm
VOM2514-104	IS	150/150
pH	216315	

Standard Data

Lot #	Description	Conc.
VOM2514-80.1	Ext A|B|K	100ppm
VOM2514-97.5	Ext. C	100ppm
VOM2514-73.5	Ext. E	100ppm
VOM2514-93.1	Ext. Hex	100ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: _____ Date: 12/19/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N266745	IB				1	5								
	266746	BFB				2	5						NG	failed	
	266747	CC11221-20				3	5						NG	20ue A|B|K,C,E|100mL	
	266748	BFB				1	5				W	OK		8:44AM	
	266749	CC11221-20				2	5				W	OK		20ue A|B|K C,E|100mL	
	266750	MB				1	5				W	OK			
	266751	BS				2	5				W	OK		20ue ext. A|B|K, C, E, hex. |100mL	
	266752	IB				3	5				W	OK			
R	266753	JCS696617	22980 TCE,	GW	1	4	5		1X		W	OK		12TCE, PCE, T12DCE	✓
R	266754	JCS696626	✓	GW	1	5	5		1X		W	OK			✓
R	266755	JCS696628	✓	GW	2	6	5		1X		W	OK			✓
R	266756	JCS696632	✓	GW	1	7	5		1X		W	OK			✓
R	266757	JCS696615	✓	GW	1	8	5		1X		W	OK			✓
R	266758	JCS696615	✓	GW	1	9	5/50		10X		W	OK			✓
	266759	JCS73281	23167 PPL,	GW	4	10	5		1X		W	OK		124TMB, ACE, IPTCLB, NBBNZ	✓
	266760	JCS73282	✓	GW	4	11	5		1X		W	OK			✓
	266761	JCS73283	✓	GW	12	12	5		1X		W	OK			✓

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

GBS

Form: OR001-10
Rev. Date: 1/19/16

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7.8.8

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SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11241

Date: 12.18.17

Print Analyst Name: Chelsea San Filippo

Analyst Signature: CSF

Columns: RTX624(60mx0.25mmx1.4um

Method V624

Initial Cal. Method MN11221

Standard Data		
Lot #	Description	Conc.
	pg.29	

Standard Data		
Lot #	Description	Conc.
	pg.29	

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: _____ Date: 12/19/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N2d6762	JCS73328-4	23167 PPL,	IN	11	13	5		1X		W		OK	124TMB, ACE, IPTOL, NBBNZ	✓
	2d6763	JCS73328-1 ms	✓			14	5		1X		W		OK	9 Hexl. A1B1K, C, E, hex. 1100mL	✓
	2d6764	1B				15	5				W		OK		
	2d6765	JCS73328-2 dup	✓			16	5		1X		W		OK		✓
	2d6766	JCS73328-5	✓	WB	1	17	5		1X		W		OK		✓
	2d6767	JCS71160-17	23090 TCL20r, TDA	WB	5	18	5		1X		W		OK		✓
	2d6768	JCS71160-18	✓	WB	1	19	5		1X		W		OK		✓
	2d6769	JCS71160-1	✓	GW	6	20	5		1X		W		OK		✓
	2d6770	JCS71160-2	✓	GW	6	21	5		1X		W		OK		✓
	2d6771	JCS71160-13 CVS 12/18/17	23090 TCL20r	GW	3	22	5		1X		W		OK		✓
	2d6772	JCS71160-4	23090 TCL20r, TDA	GW	5	23	5		1X		W		OK		✓
	2d6773	JCS71160-5	✓	GW	5	24	5		1X		W	RR	IS out		✓
	2d6774	JCS71160-7	23090 TCL20r, TDA	GW	6	25	5		1X		W		OK		✓
	2d6775	JCS71160-8	✓	GW	6	26	5		1X		W		OK		✓
	2d6776	JCS71160-9	✓	GW	6	27	5		1X		W		OK		✓
	2d6777												NO DATA		

CVS 12-18-17

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Form: OR001-10
Rev. Date: 1/19/16

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11243

Date: 12.19.17

Print Analyst Name: Chelsea San Filippo

Analyst Signature: CVS

Columns: RXI624 (60mx0.25mmx1.4um

Method V624

Initial Cal. Method MN11221

Standard Data

Lot #	Description	Conc.
VOM2514-77.1&6	A|B|K	100ppm
VOM2514-101.5	C	100ppm
VOM2514-59.26	E	100ppm
VOM2514-104	IS	150|500
VOM2514-80.1	Ext. A|B|K	100ppm

Standard Data

Lot #	Description	Conc.
VOM2514-113.2	Ext. C	100ppm
VOM2514-73.5	Ext. E	100ppm
VOM2514-93.1	Ext. Hex	100ppm
pH	216315	

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 12/19/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N266794	IB				1	5								
	266795	BFB				2	5						NG		
	266796	CC11221-20				3	5						NG	tuned	
	266797	BFB				1	5			w		ok		10:22AM	
	266798	CC11221-20				2	5			w		ok		20ul A|B|K, C, E|100mL	
	266799	MB				1	5			w		ok			
	266800	BS				2	5			w		ok		20ul ext. A|B|K, C, E, hex. |100mL	
R	266801	JCS705604	22984 PPL MTBE	IN	2	3	.1/50		500X	w		ok			✓
R	266802	JCS696622	22980 TCE,	GW	1	4	5		1X	w		ok		12DCE, DCE, T12DCE	✓
R	266803	JCS696622	✓	GW	1	5	5/50		10X	w		ok			✓
R	266804	JCS696305	22985 SL	GW	3	6	5		1X	w		ok			✓
R	266805	JCS696305	✓	GW	3	7	5/50		10X	w		not run		OI SK: pred position	✓
R	266806 5	JCS696310	✓	GW	3	8	25/50		2X	w		ok			✓
	266807 6	JCS7103-2	23069 PPL tic,	GW	1	9	2.5/50		20X	w		ok	HD	MTBE, NAP, TBA RRZ SX	✓
R	266808 7	JCS7103-1	✓	GW	2	10	12.5/50		4X	w		ok			✓
	266809 8	JCS7103-2 MS	✓	GW	1	11	2.5/50		20X	w		ok		20ul ext. A|B|K, C, E, hex. |100mL	✓
	266810	JCS7103-2 MSD	✓	GW	1	12	2.5/50		20X	w		ok			✓

CVS 12.20.17

MTX = Matrix Designate W for water, S for soil, O for oil. L+ = Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

GBS

SGS

VOLATILE ANALYSIS LOG

Batch ID: VN11243

Date: 12.19.17

Print Analyst Name: Chelsea San Filippo

Analyst Signature: CVS

Columns: RXI624(60mx0.25mmx1.4um

Method VI624

Initial Cal. Method MN11221

Standard Data		
Lot #	Description	Conc.
	pg 35	

Standard Data		
Lot #	Description	Conc.
	pg 35	

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: _____ Date: 12/19/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	N2606811	IB				13	5				W	CV			
R	2606812A	JCS1963-5	22984 PPL,MTBE	WB	1	14	5/50		10X		W	CV			✓
	2606812	JCS7056-5					5		1X		W	CV			✓
	2606813	JCS7330-7	23197 SL	WB	2	15	5		1X		W	CV			✓
	2606814	JCS7239-1	23129 GOIL	EB	1	16	5		1X		W	CV	FID	RR10X FID	✓
	2606815	JCS7217-2	23266 PPL	WB	6	17	5		1X		W	CV			✓
	2606816	JCS7330-2	23197 SL	WB	3	18	5		1X		W	CV			✓
	2606817	JCS7330-3	✓	WB	3	19	5		1X		W	CV			✓
	2606818	JCS7330-6	✓	WB	7	20	5		1X		W	CV			✓
	2606819	JCS7522-2	23222 SL1	WB	4	21	5		1X		W	CV			✓
	2606820	JCS7234-1	23130 GOIL,	WB	2	22	5		1X		W	CV		1122T, 124TMB, 120CE 135TMB, 2CEVE, F113, THF	✓
	2606821	JCS7234-2	✓	WB	1	23	5		1X		W	CV	FID	RR10X FID	✓
	2606822	JCS7330-1	23197 SL	WB	3	24	5		1X		W	CV	FID	RR10X FID	✓

CVS 12.19.17

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

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Form: OR001-10
Rev. Date: 1/19/16

SGS

VOLATILE ANALYSIS LOG

Batch ID: VT9358

Ext. F141B + F142B V0172574-32.1 100ppm
Ext. F143A V0172574-33.1 100ppm
Ext. ACN V0172574-5.3 100ppm

Date: 11/8/17

Print Analyst Name: Chelsea San Filippo

Analyst Signature: CSF

Columns: DB624 (60m x 0.25mm x 1.4μm)

Method V624

Initial Cal. Method XVT9358

Standard Data

Lot #	Description	Conc.
V0172574-28.21	A/B/K	100ppm
V0172574-46.6	C	100ppm
V0172574-22.48	E	100ppm
V0172574-31.4	Freon Mix	100ppm
V0172574-15	IS	1500/1500

Standard Data

Lot #	Description	Conc.
V0172574-39.3	Ext. A/B	100ppm
V0172574-41.4	Ext. K	100ppm
V0172574-43.3	Ext. C	100ppm
V0172574-3.12	Ext. E	100ppm
V0172574-04.10	Ext. Hex	100ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: BKelly Date: 11/9/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	T227846	BFB					5						Q	10:57 pm	
	227847	IC9358-0.5	624 initial calibration	A			5						NOT USED	5ul ABK, C, E, Freon mix/1000mL	
	227848	IC9358-0.5		A			5						C	5ul ABK, C, E, Freon mix/1000mL	
	227849	IC9358-02	✓	A			5						C	2ul ABK, C, E, freon mix/100mL	
	227850	IC9358-1	✓	A			5						C	5ul ABK, C, E, freon mix/500mL	
	227851	IC9358-2	✓	A			5						C	2ul ABK, C, E, freon mix/100mL	
	227852	IC9358-5	✓	A			5						C	5ul ABK, C, E, freon mix/100mL	
	227853	IC9358-20	✓	A			5						C	20ul ABK, C, E, freon mix/100mL	
	227854	IC9358-50	✓	A			5						C	50 ul ABK, C, E, freon mix/100mL	
	227855	IC9358-100	✓	A			5						C	100ul ABK, C, E, freon mix/100mL	
	227856	IC9358-200	✓	A			5						C	200ul ABK, C, E, freon mix/100mL	
	227857	IB					5								
	227858	IB					5								
	227859	ICV9358-20	✓	A			5						C	20ul acetonitrile/100mL	
	227860	ICV9358-20	✓	A			5						C	20ul Ext A/B, C, E, Hex, K Freon mix, F143A	
		IB					5								
														CSF 11.9.17	

MTX = Matrix Designate W for water, S for soil, O for oil. L+ = Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

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Notes

#7 FLBA ICV ↓ → NO RL

#111 Nitrobenz – IC – NG.

#42 ICV ↑

#62 2CVe ↑

22 MTBE

1.512 3.071 −103.1# 216#
1.536 −1.6 108

260

SGS

VOLATILE ANALYSIS LOG

Batch ID: VT9392|9390

Date: 12.12.17

Print Analyst Name: ChelseaSanFilippo

Analyst Signature: CVS

Columns: PB624 ((60mx0.25mmx1.4um)

Method VC24

Initial Cal. Method MT9358

Standard Data

Lot #	Description	Conc.
VOA7514-77.10	A|B|K	100ppm
VOA7514-96.6	C	100ppm
VOA7514-59.30	E	100ppm
VOA7514-64	IS	150|1500
PH	216315	

Standard Data

Lot #	Description	Conc.
VOA7514-80.1	Ext. A|B|K	100ppm
VOA7514-92.2	Ext. C	100ppm
VOA7514-73.3	Ext. E	100ppm
VOA7514-93.1	Ext. Hex	100ppm
VOA7514-80.4	Ext. A|B|K	100ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: _____ Date: 12/13/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	T228684	IB				1	5						OK		
	228685	BFB				2	5				W		OK	7:19AM	
	228686	CC9358.20				3	5				W		OK	20ueA|B|K,C,E|100mL	
	228687	MB				1	5				W		OK		
	228688	BS				2	5				W		NG		
	228689	BS				3	5				W		OK	20ueExt.A|B|K,C,E,Hex.|100mL used new standards	
R		JCS6840-2							100X					VOID CVS 12.12.17	
R		JCS6840-1							50X						
R		JCS6993-3							10X						
R	228690	JCS6830-1MS	22929 CF		6	4	5		1X		W		OK	VT9390 6ueExt.A|B,C,E, BTX, headspace	✓ hex/some
R	228691	JCS6840-2	22803 TCL	EE	1	5	5|50		100X		W		OK		✓
R	228692	JCS6840-1	✓	IN	1	6	1|50		50X		W		OK		✓
R	228693	JCS6993-3	22984 COIL	GW	9	7	5|50		10X		W		OK		✓
	228694	JCS6877-1	22957 SL6	GW	16	8	5		1X		W		OK		✓
	228695	JCS6819-1	22931 SL	GW	1	9	5		1X		W		OK		✓
	228696	JCS6819-2	✓	GW	1	10	5		1X		W		OK		✓
	228697	JCS6838-1	22934 TVO	EE	9	11	5		1X		W		OK		✓

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

GBS

85

7.8.11

7

SGS

VOLATILE ANALYSIS LOG

Batch ID: VT9392

Date: 12·12·17

Print Analyst Name: Chelsea San Filippo

Analyst Signature: CVS

Columns: DB624 (60mx0.25mmx1.4um)

Method: V624

Initial Cal. Method: MT9358

Standard Data

Lot #	Description	Conc.
	pg. 85	

Standard Data

Lot #	Description	Conc.
	pg. 85	

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 12/13/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* < 2
	T228698	JCS6474-8	22930 TCL42LDT	GW	17	12	5		1X		✓		RR	1X C/O	✓
	228699	JCS6474-10	✓	GW	5	13	5		1X		✓		OW		✓
	228700	JCS6474-9	✓	GW	12	14	5		1X		✓		RR	1X BS Hit	✓
	228701	JCS6811-1 MS	22930 60IL	GW	9	15	2.5/50		20X		✓		OW	20ul ext. A/B/K, C, E, hex./100ML	✓
	228702	JCS6811-1 MSD	✓	GW	9	16	2.5/50		20X		✓		OW		✓
	228703	1B				17	5				✓		OW		
	228704	JCS6474-11	22930 TCL42LDT	WTB	3	18	5		1X		✓		OW		✓
	228705	JCS6819-4	22931 SL	WTB	1	19	5		1X		✓		OW		✓
	228706	JCS6811-6	22930 60IL	WTB	2	20	5		1X		✓		OW		✓
	228707	JCS6811-1	✓	GW	9	21	2.5/50		20X		✓		OW		✓
	228708	JCS6811-3	✓	GW	8	22	1/50		50X		✓		OW/LID	RR 25X	✓
	228709	JCS6811-5	✓	GW	9	23	5/50		10X		✓		OW		✓
	228710	JCS6811-4	✓	GW	5	24	10/50		5X		✓		OW		✓
	228711	JCS6792-2	22934 Benz,	WW	6	25	5		1X		✓		OW	12DCB, 13DCB, 14DCB, CBNZ	✓
	228712	JCS6793-1	22936 SL	WW	5	26	5		1X		✓		OW		✓
	228713	JCS7007-2	22981 TTOSL,	EF	1	27	5		1X		✓		OW	DCE	✓

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate. CVS 12·13·17
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

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Form: OR001-10
Rev. Date: 1/19/16

7.8.11

7

SGS

VOLATILE ANALYSIS LOG

Batch ID: VT9393

Date: 12.12.17

Print Analyst Name: Chelsea San Filippo

Analyst Signature: CVS

Columns: DB624 (60m x 0.25mm x 1.4um)

Method V624

Initial Cal. Method MT935K

Standard Data

Lot #	Description	Conc.
VON2814-80.1	EXT. A/B/K	100ppm
VON2814-92.2	EXT. C	100ppm
VON2814-73.3	EXT. E	100ppm
VON2814-93.1	EXT. Hex	100ppm
VON2814-64	IS/SS	150/150

Standard Data

Lot #	Description	Conc.
	pH 216315	

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: _____ Date: 12/13/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	T228714	IB				28	5				W	W			
	228715	MB				29	5				W	W			
	228716	BS				30	5				W	W		20uL ext. A/B/K.C, E, hex. /100mL	
	228717	JCS616966-31 MS	22480 TCE,	GW	4	31	5		1X		W	W		9 CVS 12.12.17 20uL ext A/B/K.	✓
	228718	JCS616966-31 MSD	12DCE, DCE, T12DCE	GW	7	32	5		1X		W	W		C, E, hex. /40mL	✓
	228719	IB				33	5				W	W			
	228720	JCS616966-40	✓	GW	2	34	5		1X		W	W			✓
	228721	JCS616966-31	✓	GW	8	35	5		1X		W	W			✓
	228722	JCS616966-9/16 CVS 12.12.17	✓	GW	162	36	5		1X		W	W			✓
	228723	JCS616966-10	✓	GW	1	37	5		1X		W	W			✓
	228724	JCS616966-11	✓	GW	1	38	5		1X		W	W			✓
	228725	JCS616966-12	✓	GW	1	39	5		1X		W	W			✓
	228726	JCS616966-13	✓	GW	2	40	5		1X		W	W		6:52AM	✓
													CVS 12.13.17		

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

GBS

Form: OR001-10
Rev. Date: 1/19/16

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

United Technologies Corporation

SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

190401097 200.0003

SGS Job Number: JC58534

Sampling Date: 01/09/18

Report to:

Stantec Consulting Corporation
8770 Guion Road Suite B
Indianapolis, IN 46268
Susan.Hall@Stantec.com

ATTN: Susan Hall

Total number of pages in report: **46**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Diane Komar 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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SGS North America Inc.

Sample Summary

United Technologies Corporation

Job No: JC58534

SECORINI: Zanesville, [redacted] Avenue, Zanesville, OH
Project No: 190401097 200.0003

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC58534-1	01/09/18	11:55	EC	01/10/18	AQ	Ground Water	S2-DB

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	United Technologies Corporation	**Job No**	JC58534
Site:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH	**Report Date**	1/22/2018 3:58:24 PM

On 01/10/2018, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC58534 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method EPA 624

Matrix: AQ **Batch ID:** VT9413

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC58675-2MS, JC58675-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JC58534
Account: United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH
Collected: 01/09/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC58534-1	**S2-DB**					
Trichloroethene		2.7	1.0	0.24	ug/l	EPA 624

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	S2-DB		
Lab Sample ID:	JC58534-1	**Date Sampled:**	01/09/18
Matrix:	AQ - Ground Water	**Date Received:**	01/10/18
Method:	EPA 624	**Percent Solids:**	n/a
Project:	SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T229114.D	1	01/12/18 13:26	CSF	n/a	n/a	VT9413
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	0.40	ug/l	
79-01-6	Trichloroethene	2.7	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	102%		76-122%
2037-26-5	Toluene-D8 (SUR)	97%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	96%		80-120%
1868-53-7	Dibromofluoromethane (S)	100%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SGS ACCUTEST

GW

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # 4077 3094 0473 | Bottle Order Control #
SGS Accutest Quote # | SGS Accutest Job # JC58534

Client / Reporting Information

Company Name: STANTEC
Street Address: 8770 Guion R.D Ste B
City State Zip: Indianapolis IN 46268
Project Contact: Susan.Hall@stantec.com
Phone # | Fax #
Sampler(s) Name(s) | Phone #

Project Information

Project Name: LTC ZANESVILLE
Street: 2200 Linden Ave
City State: Zanesville OH.
Project #
Client Purchase Order #
Project Manager: Kelly James

Billing Information (if different from Report to)

Company Name
Street Address
City State Zip
Attention:

Requested Analysis (see TEST CODE sheet)

VOC 624

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MeOH	ENCORE	LAB USE ONLY
1	B-3DB		1-9-18	11:55	E.C	GW	3	3								X

V651

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [X] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

INITIAL ASESSMENT
LABEL VERIFICATION

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 ERIC Cash	1-9-18 12:30	1 FEDEX	2 FEDEX	1-10-18 950	2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal # 264 [ ] Intact [ ] Not Intact	Preserved where applicable	On Ice [X] Cooler Temp 2.1° C
5		5			

JP

Form:SM088-01CRev.Date:9/13/16

SGS Sample Receipt Summary

Job Number: JC58534 **Client:** _____ **Project:** _____

Date / Time Received: 1/10/2018 9:50:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.1);

Cooler Temps (Corrected) °C: Cooler 1: (3.0);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 216017 pH 12+: 208717 Other: (Specify) _____ _____

Comments

SM089-03
Rev. Date 12/7/17

JC58534: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

United Technologies Corporation

Job No: JC58534

SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH
Project No: 190401097 200.0003

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC58534-1 S2-DB	Collected: 09-JAN-18 11:55 By: EC		Received: 10-JAN-18 By: MH			
JC58534-1	EPA 624	12-JAN-18 13:26	CSF			V624DCE,VMS+ 12DCE, VMS+ T12DCE,VMS+ TCE

SGS Internal Chain of Custody

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH
Received: 01/10/18

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC58534-1.1	Secured Storage	Chelsea San Filippo	01/12/18 11:45	Retrieve from Storage
JC58534-1.1	Chelsea San Filippo	GCMST	01/12/18 11:45	Load on Instrument
JC58534-1.1	GCMST	Chelsea San Filippo	01/15/18 09:41	Unload from Instrument
JC58534-1.1	Chelsea San Filippo	Secured Storage	01/15/18 09:41	Return to Storage

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9413-MB	T229108.D	1	01/12/18	CSF	n/a	n/a	VT9413

The QC reported here applies to the following samples: **Method:** EPA 624

JC58534-1

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	0.40	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.24	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	101%	76-122%
2037-26-5	Toluene-D8 (SUR)	98%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%	80-120%
1868-53-7	Dibromofluoromethane (S)	100%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.77	41	ug/l	J
	system artifact	3.91	80	ug/l	J
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VT9413-BS	T229109.D	1	01/12/18	CSF	n/a	n/a	VT9413

The QC reported here applies to the following samples: **Method:** EPA 624

JC58534-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethene	20	19.8	99	72-115
156-60-5	trans-1,2-Dichloroethene	20	19.9	100	70-121
540-59-0	1,2-Dichloroethene (total)	40	39.7	99	72-117
79-01-6	Trichloroethene	20	18.8	94	78-117

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	100%	76-122%
2037-26-5	Toluene-D8 (SUR)	98%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	80-120%
1868-53-7	Dibromofluoromethane (S)	102%	80-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC58675-2MS	T229122.D	4	01/12/18	CSF	n/a	n/a	VT9413
JC58675-2MSD	T229123.D	4	01/12/18	CSF	n/a	n/a	VT9413
JC58675-2 [a]	T229118.D	4	01/12/18	CSF	n/a	n/a	VT9413

The QC reported here applies to the following samples: **Method:** EPA 624

JC58534-1

CAS No.	Compound	JC58675-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	59.5		80	121	77	80	119	74	2	50-134/14
156-60-5	trans-1,2-Dichloroethene	ND		80	71.7	90	80	72.1	90	1	63-129/18
540-59-0	1,2-Dichloroethene (total)	59.5		160	193	83	160	191	82	1	48-138/15
79-01-6	Trichloroethene	28.0		80	94.6	83	80	97.0	86	3	46-145/12

CAS No.	Surrogate Recoveries	MS	MSD	JC58675-2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	98%	99%	96%	76-122%
2037-26-5	Toluene-D8 (SUR)	98%	98%	98%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	102%	100%	104%	80-120%
1868-53-7	Dibromofluoromethane (S)	101%	99%	100%	80-120%

(a) Results reported from the HCl preserved sample. The reported result for acrolein is for screening only and cannot be used for compliance purposes.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample: VT9412-BFB
Lab File ID: T229087.D
Instrument ID: GCMST
Injection Date: 01/10/18
Injection Time: 18:10

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	13437	19.3		Pass
75	30.0 - 60.0% of mass 95	36149	51.9		Pass
95	Base peak, 100% relative abundance	69709	100.0		Pass
96	5.0 - 9.0% of mass 95	4621	6.63		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	68709	98.6		Pass
175	5.0 - 9.0% of mass 174	5199	7.46	(7.57) [a]	Pass
176	95.0 - 101.0% of mass 174	65877	94.5	(95.9) [a]	Pass
177	5.0 - 9.0% of mass 176	4623	6.63	(7.02) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9412-IC9412	T229088.D	01/10/18	18:40	00:30	Initial cal 0.2
VT9412-IC9412	T229089.D	01/10/18	19:10	01:00	Initial cal 0.5
VT9412-IC9412	T229090.D	01/10/18	19:40	01:30	Initial cal 1
VT9412-IC9412	T229091.D	01/10/18	20:10	02:00	Initial cal 2
VT9412-IC9412	T229092.D	01/10/18	20:40	02:30	Initial cal 5
VT9412-ICC9412	T229093.D	01/10/18	21:10	03:00	Initial cal 20
VT9412-IC9412	T229094.D	01/10/18	21:40	03:30	Initial cal 50
VT9412-IC9412	T229095.D	01/10/18	22:10	04:00	Initial cal 100
VT9412-IC9412	T229096.D	01/10/18	22:40	04:30	Initial cal 200
VT9412-ICV9412	T229099.D	01/11/18	00:10	06:00	Initial cal verification 20
VT9412-ICV9412	T229100.D	01/11/18	00:40	06:30	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample:	VT9412-BFB2	**Injection Date:**	01/11/18
Lab File ID:	T229103.D	**Injection Time:**	09:52
Instrument ID:	GCMST		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15204	19.0		Pass
75	30.0 - 60.0% of mass 95	41360	51.8		Pass
95	Base peak, 100% relative abundance	79842	100.0		Pass
96	5.0 - 9.0% of mass 95	5107	6.40		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	76581	95.9		Pass
175	5.0 - 9.0% of mass 174	5474	6.86	(7.15) [a]	Pass
176	95.0 - 101.0% of mass 174	76306	95.6	(99.6) [a]	Pass
177	5.0 - 9.0% of mass 176	4784	5.99	(6.27) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9412-ICV9412	T229104.D	01/11/18	11:45	01:53	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample:	VT9413-BFB	**Injection Date:**	01/12/18
Lab File ID:	T229106.D	**Injection Time:**	08:54
Instrument ID:	GCMST		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15894	19.1		Pass
75	30.0 - 60.0% of mass 95	44259	53.3		Pass
95	Base peak, 100% relative abundance	83075	100.0		Pass
96	5.0 - 9.0% of mass 95	6230	7.50		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	82416	99.2		Pass
175	5.0 - 9.0% of mass 174	6064	7.30	(7.36) [a]	Pass
176	95.0 - 101.0% of mass 174	79856	96.1	(96.9) [a]	Pass
177	5.0 - 9.0% of mass 176	5387	6.48	(6.75) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VT9413-CC9412	T229107.D	01/12/18	09:33	00:39	Continuing cal 20
VT9413-MB	T229108.D	01/12/18	10:15	01:21	Method Blank
VT9413-BS	T229109.D	01/12/18	10:45	01:51	Blank Spike
ZZZZZZ	T229111.D	01/12/18	11:55	03:01	(unrelated sample)
ZZZZZZ	T229112.D	01/12/18	12:25	03:31	(unrelated sample)
ZZZZZZ	T229113.D	01/12/18	12:55	04:01	(unrelated sample)
JC58534-1	T229114.D	01/12/18	13:26	04:32	S2-DB
ZZZZZZ	T229115.D	01/12/18	13:56	05:02	(unrelated sample)
JC58675-2	T229118.D	01/12/18	15:33	06:39	(used for QC only; not part of job JC58534)
ZZZZZZ	T229119.D	01/12/18	16:03	07:09	(unrelated sample)
ZZZZZZ	T229120.D	01/12/18	16:33	07:39	(unrelated sample)
ZZZZZZ	T229121.D	01/12/18	17:03	08:09	(unrelated sample)
JC58675-2MS	T229122.D	01/12/18	17:33	08:39	Matrix Spike
JC58675-2MSD	T229123.D	01/12/18	18:03	09:09	Matrix Spike Duplicate
ZZZZZZ	T229125.D	01/12/18	19:03	10:09	(unrelated sample)
ZZZZZZ	T229126.D	01/12/18	19:33	10:39	(unrelated sample)
ZZZZZZ	T229127.D	01/12/18	20:03	11:09	(unrelated sample)
ZZZZZZ	T229128.D	01/12/18	20:33	11:39	(unrelated sample)
ZZZZZZ	T229129.D	01/12/18	21:04	12:10	(unrelated sample)
ZZZZZZ	T229130.D	01/12/18	21:34	12:40	(unrelated sample)
ZZZZZZ	T229131.D	01/12/18	22:04	13:10	(unrelated sample)
ZZZZZZ	T229132.D	01/12/18	22:34	13:40	(unrelated sample)
ZZZZZZ	T229133.D	01/12/18	23:04	14:10	(unrelated sample)
ZZZZZZ	T229134.D	01/12/18	23:35	14:41	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Sample:	VT9413-BFB	**Injection Date:**	01/12/18
Lab File ID:	T229106.D	**Injection Time:**	08:54
Instrument ID:	GCMST		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	T229137.D	01/13/18	01:05	16:11	(unrelated sample)
ZZZZZZ	T229138.D	01/13/18	01:35	16:41	(unrelated sample)
ZZZZZZ	T229139.D	01/13/18	02:05	17:11	(unrelated sample)
ZZZZZZ	T229140.D	01/13/18	02:35	17:41	(unrelated sample)
VT9414-MB	T229142.D	01/13/18	03:35	18:41	Method Blank
VT9414-BS	T229143.D	01/13/18	04:05	19:11	Blank Spike
JC58690-4MS	T229144.D	01/13/18	04:35	19:41	Matrix Spike
JC58690-4MSD	T229145.D	01/13/18	05:05	20:11	Matrix Spike Duplicate
JC58690-4	T229147.D	01/13/18	06:05	21:11	(used for QC only; not part of job JC58534)
ZZZZZZ	T229148.D	01/13/18	06:36	21:42	(unrelated sample)
ZZZZZZ	T229149.D	01/13/18	07:06	22:12	(unrelated sample)
ZZZZZZ	T229150.D	01/13/18	07:36	22:42	(unrelated sample)
ZZZZZZ	T229151.D	01/13/18	08:06	23:12	(unrelated sample)
ZZZZZZ	T229152.D	01/13/18	08:36	23:42	(unrelated sample)

Internal Standard Area Summary

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Check Std:	VT9413-CC9412	**Injection Date:**	01/12/18
Lab File ID:	T229107.D	**Injection Time:**	09:33
Instrument ID:	GCMST	**Method:**	EPA 624

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	110252	7.42	262491	9.46	359603	10.32	208447	16.06	338768	13.52
Upper Limit [a]	220504	7.92	524982	9.96	719206	10.82	416894	16.56	677536	14.02
Lower Limit [b]	55126	6.92	131246	8.96	179802	9.82	104224	15.56	169384	13.02

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VT9413-MB	103927	7.43	261000	9.46	364298	10.32	219585	16.06	342013	13.52
VT9413-BS	108895	7.43	242643	9.46	343810	10.32	219317	16.06	332970	13.52
ZZZZZZ	111380	7.43	259622	9.46	354487	10.32	222990	16.06	340838	13.52
ZZZZZZ	113299	7.43	247068	9.46	343818	10.32	226786	16.06	341304	13.52
ZZZZZZ	110707	7.42	245161	9.46	331149	10.32	218153	16.06	327048	13.52
JC58534-1	106723	7.43	240015	9.46	335358	10.32	217112	16.06	323645	13.52
ZZZZZZ	90314	7.43	243202	9.46	331169	10.32	216053	16.06	331536	13.52
JC58675-2	103260	7.44	304428	9.46	427819	10.32	251672	16.06	402050	13.52
ZZZZZZ	93088	7.43	281202	9.46	389601	10.32	244449	16.06	376160	13.52
ZZZZZZ	87142	7.42	267402	9.46	367700	10.32	233309	16.06	361466	13.52
ZZZZZZ	77172	7.43	288066	9.46	402060	10.32	249996	16.06	382665	13.52
JC58675-2MS	68907	7.43	269445	9.46	379009	10.32	240721	16.06	363780	13.52
JC58675-2MSD	73427	7.43	278055	9.47	385145	10.32	245416	16.06	378093	13.52
ZZZZZZ	96188	7.42	257954	9.46	359017	10.32	227856	16.06	342319	13.52
ZZZZZZ	89809	7.42	263043	9.46	357378	10.32	216570	16.06	338873	13.52
ZZZZZZ	96705	7.43	255348	9.46	353650	10.32	226152	16.06	336729	13.52
ZZZZZZ	93170	7.42	236226	9.46	329560	10.32	210645	16.06	318134	13.52
ZZZZZZ	89979	7.43	245285	9.46	335466	10.32	215413	16.06	332339	13.52
ZZZZZZ	98157	7.42	240845	9.46	326357	10.32	217939	16.06	327237	13.52
ZZZZZZ	93951	7.42	236468	9.46	329255	10.32	216998	16.06	323363	13.53
ZZZZZZ	98547	7.43	235176	9.46	326004	10.32	210510	16.06	318095	13.52
ZZZZZZ	90622	7.42	226801	9.46	312363	10.32	205127	16.06	307264	13.52
ZZZZZZ	82499	7.43	259493	9.46	356017	10.32	209260	16.06	339195	13.52
ZZZZZZ	81979	7.42	227175	9.46	318277	10.32	214213	16.06	317309	13.52
ZZZZZZ	92088	7.42	236355	9.46	319449	10.32	211182	16.06	320985	13.52
ZZZZZZ	86901	7.42	233424	9.46	323676	10.32	209147	16.06	313860	13.52
ZZZZZZ	97245	7.43	242808	9.46	327749	10.32	212168	16.06	321459	13.52
VT9414-MB	106724	7.42	249672	9.46	332433	10.32	215719	16.06	325902	13.52
VT9414-BS	102173	7.43	239082	9.46	335240	10.32	213290	16.06	329239	13.52
JC58690-4MS	108036	7.43	247407	9.46	347009	10.32	219536	16.06	338765	13.52
JC58690-4MSD	112410	7.43	263091	9.46	368620	10.32	231126	16.06	354590	13.52
JC58690-4	116604	7.42	253475	9.46	356204	10.32	222795	16.06	346083	13.52
ZZZZZZ	106901	7.42	250727	9.46	345938	10.32	223199	16.06	341075	13.52
ZZZZZZ	111295	7.43	241712	9.46	334905	10.32	218259	16.06	324639	13.52
ZZZZZZ	106575	7.42	247401	9.46	340890	10.32	212684	16.06	323876	13.52

Internal Standard Area Summary

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Check Std:	VT9413-CC9412	**Injection Date:**	01/12/18
Lab File ID:	T229107.D	**Injection Time:**	09:33
Instrument ID:	GCMST	**Method:**	EPA 624

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
ZZZZZZ	99597	7.42	246680	9.46	338480	10.32	222915	16.06	334135	13.52
ZZZZZZ	97758	7.43	241913	9.46	335795	10.32	214539	16.06	323003	13.52

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Chlorobenzene-D5

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JC58534
Account: UTC United Technologies Corporation
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Method: EPA 624 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC58534-1	T229114.D	102	97	96	100
JC58675-2MS	T229122.D	98	98	102	101
JC58675-2MSD	T229123.D	99	98	100	99
VT9413-BS	T229109.D	100	98	98	102
VT9413-MB	T229108.D	101	98	101	100

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4 (SUR)	76-122%
S2 = Toluene-D8 (SUR)	80-120%
S3 = 4-Bromofluorobenzene (SUR)	80-120%
S4 = Dibromofluoromethane (S)	80-120%

Initial Calibration Summary

Job Number: JC58534 **Sample:** VT9412-ICC9412
Account: UTC United Technologies Corporation **Lab FileID:** T229093.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Response Factor Report GCMST

Method : C:\MSDCHEM\1\METHODS\MT9412.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jan 11 09:36:47 2018
Response via : Initial Calibration

Calibration Files
5 =T229092.D 20 =T229093.D 50 =T229094.D 100 =T229095.D
200 =T229096.D 2 =T229091.D 1 =T229090.D 0.5 =T229089.D
0.2 =T229088.D =

Compound	5	20	50	100	200	2	1	0.5	0.2	Avg	%RSD
1) TERT BUTYL ALCOHOL-d9	----------ISTD----------										
2) TERTIARY BUTYL ALCOHOL	1.229	1.192	1.127	1.121	1.198	1.347				1.202	6.88
3) 1,4-DIOXANE	0.079	0.094	0.088	0.088	0.093	0.102				0.091	8.39
4) PENTAFLUOROBENZENE	----------ISTD----------										
5) CHLORODIFLUOROMETHANE	0.998	1.006	0.978	0.954	0.956	1.020				0.985	2.75
6) DICHLORODIFLUOROMETHANE	1.222	1.182	1.111	1.077	1.082	1.118				1.132	5.11
7) FREON 143A	1.065	1.006	1.017	1.060	1.040	1.251	0.732			1.025	14.94
8) FREON 142B	0.883	0.871	0.888	0.903	0.902	0.995	0.626			0.867	13.12
9) CHLOROMETHANE	0.796	0.825	0.843	0.855	0.927	0.823	1.070			0.877	10.77
10) VINYL CHLORIDE	0.940	0.946	0.926	0.948	1.008	0.889	0.862			0.931	5.00
11) BROMOMETHANE	0.597	0.565	0.559	0.551	0.545	0.595	0.612			0.575	4.54
12) CHLOROETHANE	0.442	0.418	0.423	0.421	0.448	0.430	0.458	0.343		0.423	8.36
13) VINYL BROMIDE	0.444	0.442	0.434	0.444	0.485	0.459	0.428	0.547		0.460	8.50
14) TRICHLOROFLUOROMETHANE	1.013	1.011	0.951	0.938	0.987	0.993	0.977	1.068	1.242	1.020	8.96
15) PENTANE										0.000	-1.00
16) FREON 141B	0.759	0.788	0.795	0.796	0.809	0.860	0.734	0.814	0.949	0.812	7.68
17) ETHYL ETHER	0.212	0.202	0.196	0.203	0.202	0.226	0.187	0.232	0.227	0.210	7.42
18) 1,1-DICHLOROETHYLENE	0.707	0.691	0.673	0.674	0.681	0.778	0.621	0.641	0.804	0.697	8.53
19) FREON 113	0.529	0.524	0.501	0.502	0.505	0.555	0.456	0.417	0.551	0.505	8.80
20) ACROLEIN	0.048	0.056	0.051	0.048	0.053					0.051	6.47
21) ACETONE	0.040	0.036	0.035	0.034	0.035	0.045	0.050			0.039	15.09
22) CARBON DISULFIDE	1.440	1.470	1.449	1.462	1.500	1.462	1.350	1.349	1.826	1.479	9.49
23) IODOMETHANE											

	0.863	0.843	0.849	0.844	0.869	0.860	0.845	0.864	1.007	0.872	5.92
24)	ACETONITRILE											
	0.040	0.034	0.035	0.036	0.038	0.048				0.038	13.19
25)	METHYL ACETATE											
	0.219	0.202	0.194	0.201	0.221	0.205				0.207	5.16
26)	METHYLENE CHLORIDE											
	0.424	0.426	0.427	0.432	0.439	0.469	0.447	0.420		0.435	3.68
27)	ACRYLONITRILE											
	0.097	0.111	0.110	0.110	0.116					0.109	6.36
28)	METHYL TERT BUTYL ETHER											
	1.434	1.411	1.442	1.408	1.529	1.505	1.574			1.472	4.37
29)	trans-1,2-DICHLOROETHYLENE											
	0.587	0.572	0.562	0.562	0.581	0.603	0.554	0.563	0.622	0.579	3.86
30)	HEXANE											
	0.547	0.562	0.521	0.529	0.537	0.618	0.511			0.546	6.56
31)	1,1-DICHLOROETHANE											
	0.727	0.738	0.706	0.723	0.733	0.766	0.717	0.694	0.860	0.741	6.62
32)	VINYL ACETATE											
	0.056	0.048	0.050	0.051	0.047	0.066				0.053	13.53
33)	DI-ISOPROPYL ETHER											
	1.404	1.392	1.370	1.384	1.407	1.432	1.418	1.679	1.682	1.463	8.51
34)	ETHYL TERT BUTYL ETHER											
	1.499	1.439	1.481	1.481	1.568	1.497	1.416	1.514	1.638	1.504	4.42
35)	2-BUTANONE											
	0.040	0.038	0.041	0.039	0.041	0.046	0.046			0.042	7.97
36)	cis-1,2-DICHLOROETHYLENE											
	0.483	0.459	0.448	0.459	0.468	0.530	0.470	0.409	0.619	0.483	12.43
37)	2,2-DICHLOROPROPANE											
	0.904	0.877	0.877	0.866	0.879	0.992	0.871	0.908		0.897	4.58
38)	ETHYL ACETATE											
	0.047	0.045	0.044	0.041	0.044	0.064				0.047	17.51
39)	BROMOCHLOROMETHANE											
	0.230	0.231	0.218	0.230	0.230	0.265	0.249	0.273		0.241	8.06
40)	TETRAHYDROFURAN											
	0.094	0.090	0.092	0.093	0.097	0.117				0.097	10.44
41)	CHLOROFORM											
	0.786	0.753	0.749	0.751	0.756	0.824	0.708	0.852	0.952	0.792	9.34
42)	t-BUTYL FORMATE											
	0.210	0.193	0.201	0.198	0.208	0.220	0.227			0.208	5.94
43)	1,1,1-TRICHLOROETHANE											
	0.900	0.908	0.889	0.890	0.907	0.913	0.858	0.878	1.048	0.910	5.96
44)	CYCLOHEXANE											
	0.731	0.727	0.734	0.776	0.813	0.659	0.772	0.631	0.859	0.745	9.52
45)	DIBROMOFLUOROMETHANE (SUR)											
	0.457	0.452	0.463	0.465	0.464	0.463	0.474	0.450	0.459	0.461	1.62
46)	1,1-DICHLOROPROPENE											
	0.605	0.580	0.560	0.560	0.574	0.619	0.529	0.629	0.726	0.598	9.59
47)	CARBON TETRACHLORIDE											
	0.826	0.833	0.815	0.823	0.832	0.858	0.826	0.598	0.874	0.809	10.05
48)	ISOPROPYL ACETATE											
	0.080	0.074	0.074	0.076	0.080	0.088	0.079			0.079	6.03
49)	1,4-DIFLUOROBENZENE	----------	ISTD	----------								
50)	1,2-DICHLOROETHANE-d4											
	0.341	0.343	0.342	0.330	0.333	0.354	0.350	0.344	0.347	0.343	2.20
51)	BENZENE											
	1.173	1.168	1.102	1.108	1.129	1.239	1.138	1.178		1.154	3.90
52)	1,2-DICHLOROETHANE											
	0.417	0.405	0.377	0.372	0.376	0.381	0.401	0.419	0.435	0.398	5.69
53)	2,2,4-TRIMETHYLPENTANE											

	1.085	1.129	1.089	1.189	1.338	1.116	0.928	1.029	1.094	1.111	10.06
54) TERT-AMYL METHYL ETHER											
	1.060	1.011	1.018	1.020	1.080	1.045	1.120	1.293	1.446	1.122	13.34
55) HEPTANE											
	0.226	0.238	0.214	0.220	0.223	0.226	0.236			0.226	3.78
56) TRICHLOROETHYLENE											
	0.320	0.315	0.303	0.310	0.314	0.320	0.292	0.304	0.410	0.321	10.80
57) 1,2-DICHLOROPROPANE											
	0.306	0.294	0.292	0.291	0.301	0.303	0.270	0.300	0.358	0.302	7.78
58) DIBROMOMETHANE											
	0.179	0.173	0.172	0.170	0.177	0.186	0.187	0.176	0.188	0.179	3.78
59) METHYL METHACRYLATE											
	0.063	0.064	0.064	0.063	0.066	0.061	0.057			0.063	4.73
60) METHYLCYCLOHEXANE											
	0.667	0.674	0.662	0.676	0.696	0.677	0.606	0.701	0.572	0.659	6.43
61) BROMODICHLOROMETHANE											
	0.436	0.426	0.416	0.418	0.429	0.470	0.419	0.397		0.426	4.90
62) 2-CHLOROETHYL VINYL ETHER											
	0.157	0.155	0.155	0.156	0.157	0.153	0.147	0.144		0.153	3.16
63) EPICHLOROHYDRIN											
	0.024	0.022	0.023	0.022	0.023	0.023				0.023	3.77
64) cis-1,3-DICHLOROPROPENE											
	0.470	0.493	0.488	0.488	0.494	0.487	0.534	0.460		0.489	4.41
65) 4-METHYL-2-PENTANONE											
	0.093	0.092	0.093	0.092	0.094	0.097	0.096	0.088		0.093	2.99
66) I CHLOROBENZENE-D5	----------ISTD----------										
67) TOLUENE-d8											
	1.253	1.244	1.243	1.262	1.237	1.254	1.231	1.243	1.240	1.245	0.77
68) TOLUENE											
	0.791	0.784	0.737	0.750	0.746	0.849	0.711	0.790	0.959	0.791	9.46
69) ETHYL METHACRYLATE											
	0.352	0.360	0.347	0.350	0.349	0.353	0.347	0.430		0.361	7.79
70) trans-1,3-DICHLOROPROPENE											
	0.477	0.469	0.452	0.448	0.442	0.525	0.526	0.509		0.481	7.17
71) 1,1,2-TRICHLOROETHANE											
	0.222	0.217	0.204	0.206	0.205	0.261	0.232	0.211		0.220	8.73
72) TETRACHLOROETHYLENE											
	0.313	0.301	0.292	0.293	0.295	0.334	0.257			0.298	7.80
73) 2-HEXANONE											
	0.111	0.112	0.107	0.107	0.105	0.110	0.131	0.089		0.109	10.56
74) 1,3-DICHLOROPROPANE											
	0.449	0.418	0.406	0.411	0.409	0.433	0.452	0.504		0.435	7.61
75) BUTYL ACETATE											
	0.160	0.165	0.155	0.156	0.161	0.151	0.216			0.166	13.57
76) 3,3-DIMETHYL-1-BUTANOL											
	0.032	0.033	0.031	0.034	0.036	0.032	0.046			0.035	15.05
77) DIBROMOCHLOROMETHANE											
	0.332	0.332	0.335	0.335	0.340	0.327	0.292	0.330		0.328	4.52
78) ETHYLENE DIBROMIDE											
	0.286	0.276	0.267	0.267	0.271	0.278	0.297	0.239		0.273	6.23
79) CHLOROBENZENE											
	0.957	0.907	0.887	0.890	0.887	0.973	0.863	0.875	1.258	0.944	13.05
80) 1,1,1,2-TETRACHLOROETHANE											
	0.422	0.434	0.417	0.434	0.437	0.447	0.393	0.412		0.424	4.01
81) ETHYLBENZENE											
	1.575	1.584	1.494	1.507	1.455	1.640	1.449	1.488	1.926	1.569	9.47
82) m,p-XYLENE											
	0.578	0.603	0.583	0.580	0.584	0.626	0.563	0.598	0.770	0.609	10.33
83) o-XYLENE											

Initial Calibration Summary

Job Number: JC58534 **Sample:** VT9412-ICC9412
Account: UTC United Technologies Corporation **Lab FileID:** T229093.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

		1.374	1.380	1.303	1.307	1.271	1.410	1.307	1.466	1.755	1.397	10.59
84)	STYRENE											
		1.003	1.008	0.969	0.967	0.955	0.983	0.937	0.978	1.327	1.014	11.79
85)	n-AMYL ACETATE											
											0.000	-1.00
86)	BROMOFORM											
		0.211	0.226	0.223	0.226	0.227	0.216	0.232	0.207		0.221	3.91
87)	CUMENE											
		1.805	1.796	1.734	1.740	1.666	1.800	1.498	1.616	1.806	1.718	6.19
88)	cis-1,4-DICHLORO-2-BUTENE											
		0.143	0.141	0.137	0.133	0.132	0.125	0.168	0.161		0.143	10.29
89)	1,4-DICHLOROBENZENE-D ----------ISTD----------											
90)	4-BROMOFLUOROBENZENE											
		0.741	0.736	0.741	0.739	0.743	0.722	0.715	0.708	0.740	0.732	1.80
91)	1,1,2,2-TETRACHLOROETHANE											
		0.567	0.566	0.544	0.542	0.561	0.558	0.622	0.608		0.571	5.10
92)	trans-1,4-DICHLORO-2-BUTENE											
		0.127	0.130	0.125	0.125	0.122	0.132				0.127	2.85
93)	1,2,3-TRICHLOROPROPANE											
		0.193	0.168	0.162	0.158	0.159	0.172	0.210			0.175	11.27
94)	N-PROPYLBENZENE											
		3.230	3.174	3.039	3.038	2.904	3.218	2.873	2.902	4.006	3.154	11.03
95)	BROMOBENZENE											
		0.730	0.716	0.705	0.715	0.724	0.718	0.731	0.716		0.719	1.20
96)	2-CHLOROTOLUENE											
		0.722	0.697	0.677	0.705	0.729	0.705	0.552	0.752		0.692	8.81
97)	4-CHLOROTOLUENE											
		1.857	1.848	1.754	1.768	1.764	1.924	1.817	1.721		1.807	3.70
98)	1,3,5-TRIMETHYLBENZENE											
		2.477	2.538	2.425	2.491	2.490	2.515	2.119	2.211	2.796	2.451	7.93
99)	TERT-BUTYLBENZENE											
		2.238	2.252	2.275	2.277	2.298	2.165	1.948	1.649	2.722	2.203	13.09
100)	1,2,4-TRIMETHYLBENZENE											
		2.535	2.533	2.447	2.428	2.426	2.550	2.342	2.418	3.295	2.553	11.23
101)	SEC-BUTYLBENZENE											
		3.371	3.395	3.324	3.360	3.221	3.350	2.812	2.948	3.702	3.276	7.97
102)	P-ISOPROPYLTOLUENE											
		2.909	2.937	2.879	2.865	2.838	2.907	2.682	2.652	3.312	2.887	6.54
103)	1,3-DICHLOROBENZENE											
		1.479	1.449	1.376	1.360	1.379	1.501	1.398	1.500		1.430	4.10
104)	1,4-DICHLOROBENZENE											
		1.494	1.474	1.414	1.399	1.401	1.587	1.452	1.633	1.941	1.533	11.30
105)	N-BUTYLBENZENE											
		0.744	0.740	0.707	0.712	0.737	0.765	0.635	0.718		0.720	5.46
106)	1,2-DICHLOROBENZENE											
		1.578	1.511	1.442	1.417	1.428	1.649	1.466	1.512		1.500	5.35
107)	HEXACHLOROETHANE											
		0.336	0.333	0.344	0.362	0.392	0.301	0.346	0.305		0.340	8.67
108)	1,2-DIBROMO-3-CHLOROPROPANE											
		0.167	0.163	0.156	0.158	0.164	0.185	0.218			0.173	12.77
109)	HEXACHLOROBUTADIENE											
		0.785	0.783	0.751	0.773	0.817	0.815	0.761	0.775	1.101	0.818	13.25
110)	1,3,5-TRICHLOROBENZENE											
		1.548	1.558	1.469	1.470	1.498	1.638	1.522	1.667	2.045	1.602	11.23
111)	NITROBENZENE											
		0.058	0.041	0.043	0.043	0.046	0.088				0.053	34.06
112)	1,2,4-TRICHLOROBENZENE											
		1.444	1.381	1.359	1.353	1.384	1.370	1.231	1.439		1.370	4.81
113)	1,2,3-TRICHLOROBENZENE											

Initial Calibration Summary

Job Number: JC58534 **Sample:** VT9412-ICC9412
Account: UTC United Technologies Corporation **Lab FileID:** T229093.D
Project: SECORINI: Zanesville, [NON RESPONSIVE] Avenue, Zanesville, OH

```
            1.244 1.237 1.205 1.216 1.256 1.155 1.104 1.221          1.205    4.22
114)  NAPHTHALENE
            2.317 2.344 2.344 2.343 2.369 2.228 2.437 2.362          2.343    2.49
115)  INDANE
            2.179 2.200 2.081 2.050 2.083 1.980 2.404 1.983          2.120    6.58
116)  ETHYLENIMINE
                                                                     0.000   -1.00
117)  BIS(CHLOROMETHYL)ETHER
                                                                     0.000   -1.00
 ---------------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MT9412.M          Thu Jan 11 13:34:55 2018   MSDT
```

6.7.1

6

Initial Calibration Verification

Job Number: JC58534 **Sample:** VT9412-ICV9412
Account: UTC United Technologies Corporation **Lab FileID:** T229099.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T229099.D Vial: 13
Acq On : 11 Jan 2018 12:10 am Operator: CHELSEAS
Sample : icv9412-20 Inst : GCMST
Misc : MS23653,VT9412,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9412.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jan 11 09:36:47 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	113	-0.01	7.42
2	M	TERTIARY BUTYL ALCOHOL		----------NA----------				
3	M	1,4-DIOXANE		----------NA----------				
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	108	0.00	9.46
5		CHLORODIFLUOROMETHANE		----------NA----------				
6	M	DICHLORODIFLUOROMETHANE		----------NA----------				
7	M	FREON 143A	1.025	0.679	33.8	73	0.00	4.01
8	M	FREON 142B	0.867	0.836	3.6	104	0.00	4.62
9	M	CHLOROMETHANE		----------NA----------				
10	M	VINYL CHLORIDE		----------NA----------				
11	M	BROMOMETHANE		----------NA----------				
12	M	CHLOROETHANE		----------NA----------				
13		VINYL BROMIDE		----------NA----------				
14	M	TRICHLOROFLUOROMETHANE		----------NA----------				
15	M	PENTANE		----------NA----------				
16	M	FREON 141B	0.812	0.715	11.9	98	0.00	6.53
17		ETHYL ETHER		----------NA----------				
18	M	1,1-DICHLOROETHYLENE		----------NA----------				
19	M	FREON 113		----------NA----------				
20		ACROLEIN		----------NA----------				
21	M	ACETONE		----------NA----------				
22	M	CARBON DISULFIDE		----------NA----------				
23	M	IODOMETHANE		----------NA----------				
24		ACETONITRILE	0.038	0.038	0.0	120	0.00	7.28
25		METHYL ACETATE		----------NA----------				
26	M	METHYLENE CHLORIDE		----------NA----------				
27	M	ACRYLONITRILE		----------NA----------				
28	M	METHYL TERT BUTYL ETHER		----------NA----------				
29	M	trans-1,2-DICHLOROETHYLEN		----------NA----------				
30	M	HEXANE		----------NA----------				
31	M	1,1-DICHLOROETHANE		----------NA----------				
32	M	VINYL ACETATE		----------NA----------				
33	M	DI-ISOPROPYL ETHER		----------NA----------				
34	M	ETHYL TERT BUTYL ETHER		----------NA----------				
35	M	2-BUTANONE		----------NA----------				
36	M	cis-1,2-DICHLOROETHYLENE		----------NA----------				
37	M	2,2-DICHLOROPROPANE		----------NA----------				
38	M	ETHYL ACETATE		----------NA----------				
39		BROMOCHLOROMETHANE		----------NA----------				
40	M	TETRAHYDROFURAN		----------NA----------				
41	M	CHLOROFORM		----------NA----------				

Initial Calibration Verification

Job Number: JC58534 **Sample:** VT9412-ICV9412
Account: UTC United Technologies Corporation **Lab FileID:** T229099.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

42		t-BUTYL FORMATE		----------NA----------					
43	M	1,1,1-TRICHLOROETHANE		----------NA----------					
44		CYCLOHEXANE		----------NA----------					
45	S	DIBROMOFLUOROMETHANE (SUR	0.461	0.453	1.7	109	0.00	9.50	
46		1,1-DICHLOROPROPENE		----------NA----------					
47		CARBON TETRACHLORIDE		----------NA----------					
48		ISOPROPYL ACETATE		----------NA----------					
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	109	0.00	10.32	
50	S	1,2-DICHLOROETHANE-d4	0.343	0.336	2.0	106	0.00	9.90	
51	M	BENZENE		----------NA----------					
52	M	1,2-DICHLOROETHANE		----------NA----------					
53		2,2,4-TRIMETHYLPENTANE		----------NA----------					
54	M	TERT-AMYL METHYL ETHER		----------NA----------					
55	M	HEPTANE		----------NA----------					
56	M	TRICHLOROETHYLENE		----------NA----------					
57	M	1,2-DICHLOROPROPANE		----------NA----------					
58	M	DIBROMOMETHANE		----------NA----------					
59		METHYL METHACRYLATE		----------NA----------					
60		METHYLCYCLOHEXANE		----------NA----------					
61	M	BROMODICHLOROMETHANE		----------NA----------					
62	M	2-CHLOROETHYL VINYL ETHER		----------NA----------					
63	M	EPICHLOROHYDRIN		----------NA----------					
64	M	cis-1,3-DICHLOROPROPENE		----------NA----------					
65	M	4-METHYL-2-PENTANONE		----------NA----------					
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	107	0.00	13.52	
67	S	TOLUENE-d8	1.245	1.242	0.2	107	0.00	11.94	
68		TOLUENE		----------NA----------					
69		ETHYL METHACRYLATE		----------NA----------					
70		trans-1,3-DICHLOROPROPENE		----------NA----------					
71		1,1,2-TRICHLOROETHANE		----------NA----------					
72	M	TETRACHLOROETHYLENE		----------NA----------					
73	M	2-HEXANONE		----------NA----------					
74		1,3-DICHLOROPROPANE		----------NA----------					
75	M	BUTYL ACETATE		----------NA----------					
76		3,3-DIMETHYL-1-BUTANOL		----------NA----------					
77	M	DIBROMOCHLOROMETHANE		----------NA----------					
78	M	ETHYLENE DIBROMIDE		----------NA----------					
79	M	CHLOROBENZENE		----------NA----------					
80	M	1,1,1,2-TETRACHLOROETHANE		----------NA----------					
81	M	ETHYLBENZENE		----------NA----------					
82	M	m,p-XYLENE		----------NA----------					
83	M	o-XYLENE		----------NA----------					
84	M	STYRENE		----------NA----------					
85		n-AMYL ACETATE		----------NA----------					
86	M	BROMOFORM		----------NA----------					
87	M	CUMENE		----------NA----------					
88		cis-1,4-DICHLORO-2-BUTENE		----------NA----------					
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	108	0.00	16.06	
90	S	4-BROMOFLUOROBENZENE	0.732	0.732	0.0	107	0.00	14.78	
91		1,1,2,2-TETRACHLOROETHANE		----------NA----------					
92		trans-1,4-DICHLORO-2-BUTE		----------NA----------					
93		1,2,3-TRICHLOROPROPANE		----------NA----------					
94		N-PROPYLBENZENE		----------NA----------					
95		BROMOBENZENE		----------NA----------					
96		2-CHLOROTOLUENE		----------NA----------					
97		4-CHLOROTOLUENE		----------NA----------					
98	M	1,3,5-TRIMETHYLBENZENE		----------NA----------					

Initial Calibration Verification

Job Number: JC58534 **Sample:** VT9412-ICV9412
Account: UTC United Technologies Corporation **Lab FileID:** T229099.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

99		TERT-BUTYLBENZENE			----------NA----------				
100	M	1,2,4-TRIMETHYLBENZENE			----------NA----------				
101		SEC-BUTYLBENZENE			----------NA----------				
102		P-ISOPROPYLTOLUENE			----------NA----------				
103	M	1,3-DICHLOROBENZENE			----------NA----------				
104	M	1,4-DICHLOROBENZENE			----------NA----------				
105		N-BUTYLBENZENE			----------NA----------				
106	M	1,2-DICHLOROBENZENE			----------NA----------				
107		HEXACHLOROETHANE			----------NA----------				
108	M	1,2-DIBROMO-3-CHLOROPROPA			----------NA----------				
109		HEXACHLOROBUTADIENE			----------NA----------				
110		1,3,5-TRICHLOROBENZENE			----------NA----------				
111		NITROBENZENE			----------NA----------				
112	M	1,2,4-TRICHLOROBENZENE			----------NA----------				
113		1,2,3-TRICHLOROBENZENE			----------NA----------				
114	M	NAPHTHALENE			----------NA----------				
115	M	INDANE	2.120	2.142	-1.0	105	0.00	16.37	
116		ETHYLENIMINE			----------NA----------				
117		BIS(CHLOROMETHYL)ETHER			----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T229093.D MT9412.M Thu Jan 11 13:34:39 2018 MSDT

Initial Calibration Verification

Job Number: JC58534 **Sample:** VT9412-ICV9412
Account: UTC United Technologies Corporation **Lab FileID:** T229100.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T229100.D Vial: 14
Acq On : 11 Jan 2018 12:40 am Operator: CHELSEAS
Sample : icv9412-20 Inst : GCMST
Misc : MS23653,VT9412,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9412.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jan 11 09:36:47 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	109	0.00	7.43
2	M	TERTIARY BUTYL ALCOHOL	1.202	1.161	3.4	106	0.00	7.53
3	M	1,4-DIOXANE	0.091	0.092	-1.1	107	0.00	11.00
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	106	0.00	9.46
5		CHLORODIFLUOROMETHANE	0.985	0.910	7.6	96	0.00	4.37
6	M	DICHLORODIFLUOROMETHANE	1.132	1.182	-4.4	106	0.00	4.37
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE	0.877	0.804	8.3	103	0.00	4.70
10	M	VINYL CHLORIDE	0.931	0.854	8.3	95	0.00	4.94
11	M	BROMOMETHANE	0.575	0.539	6.3	101	0.00	5.57
12	M	CHLOROETHANE	0.423	0.415	1.9	105	0.00	5.74
13		VINYL BROMIDE	0.460	0.516	-12.2	123	0.00	6.05
14	M	TRICHLOROFLUOROMETHANE	1.020	0.935	8.3	98	0.00	6.15
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER	0.210	0.200	4.8	105	0.00	6.51
18	M	1,1-DICHLOROETHYLENE	0.697	0.604	13.3	92	0.00	6.90
19	M	FREON 113	0.505	0.598	-18.4	121	0.00	6.89
20		ACROLEIN	0.051	0.053	-3.9	101	0.00	6.72
21	M	ACETONE	0.039	0.034	12.8	100	-0.01	6.90
22	M	CARBON DISULFIDE	1.479	1.363	7.8	98	0.00	7.28
23	M	IODOMETHANE	0.872	0.817	6.3	102	0.00	7.15
24		ACETONITRILE	0.038	0.032	15.8	99	0.00	7.28
25		METHYL ACETATE	0.207	0.199	3.9	104	0.00	7.32
26	M	METHYLENE CHLORIDE	0.435	0.429	1.4	106	0.00	7.50
27	M	ACRYLONITRILE	0.109	0.125	-14.7	119	0.01	7.78
28	M	METHYL TERT BUTYL ETHER	1.472	1.473	-0.1	111	0.00	7.82
29	M	trans-1,2-DICHLOROETHYLEN	0.579	0.552	4.7	102	0.00	7.85
30	M	HEXANE	0.546	0.417	23.6	78	0.00	8.14
31	M	1,1-DICHLOROETHANE	0.741	0.717	3.2	103	0.00	8.35
32	M	VINYL ACETATE	0.053	0.038	28.3	83	0.00	8.32
33	M	DI-ISOPROPYL ETHER	1.463	1.400	4.3	106	0.00	8.34
34	M	ETHYL TERT BUTYL ETHER	1.504	1.500	0.3	110	0.00	8.76
35	M	2-BUTANONE	0.042	0.040	4.8	111	0.00	8.96
36	M	cis-1,2-DICHLOROETHYLENE	0.483	0.463	4.1	107	0.00	9.00
37	M	2,2-DICHLOROPROPANE	0.897	0.831	7.4	100	0.00	9.03
38	M	ETHYL ACETATE	0.047	0.051	-8.5	118	0.00	8.98
39		BROMOCHLOROMETHANE	0.241	0.232	3.7	106	0.00	9.28
40	M	TETRAHYDROFURAN	0.097	0.099	-2.1	116	0.00	9.33
41	M	CHLOROFORM	0.792	0.767	3.2	108	0.00	9.32

Initial Calibration Verification

Job Number: JC58534 **Sample:** VT9412-ICV9412
Account: UTC United Technologies Corporation **Lab FileID:** T229100.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

42		t-BUTYL FORMATE	0.208	0.214	-2.9	117	0.00	9.38
43	M	1,1,1-TRICHLOROETHANE	0.910	0.877	3.6	102	0.00	9.60
44		CYCLOHEXANE	0.745	0.796	-6.8	116	0.00	9.68
45	S	DIBROMOFLUOROMETHANE (SUR	0.461	0.456	1.1	107	0.00	9.51
46		1,1-DICHLOROPROPENE	0.598	0.575	3.8	105	0.00	9.75
47		CARBON TETRACHLORIDE	0.809	0.805	0.5	102	0.00	9.79
48		ISOPROPYL ACETATE	0.079	0.079	0.0	113	0.01	9.89
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	107	0.00	10.32
50	S	1,2-DICHLOROETHANE-d4	0.343	0.335	2.3	105	0.00	9.91
51	M	BENZENE	1.154	1.144	0.9	105	0.00	10.00
52	M	1,2-DICHLOROETHANE	0.398	0.384	3.5	102	0.00	9.99
53		2,2,4-TRIMETHYLPENTANE	1.111	1.071	3.6	102	0.00	10.02
54	M	TERT-AMYL METHYL ETHER	1.122	1.033	7.9	110	0.00	10.02
55	M	HEPTANE	0.226	0.229	-1.3	103	0.00	10.16
56	M	TRICHLOROETHYLENE	0.321	0.327	-1.9	111	0.00	10.66
57	M	1,2-DICHLOROPROPANE	0.302	0.289	4.3	105	0.00	10.91
58	M	DIBROMOMETHANE	0.179	0.176	1.7	109	0.00	11.04
59		METHYL METHACRYLATE	0.063	0.062	1.6	104	0.00	10.89
60		METHYLCYCLOHEXANE	0.659	0.615	6.7	98	0.00	10.91
61	M	BROMODICHLOROMETHANE	0.426	0.419	1.6	105	0.00	11.16
62	M	2-CHLOROETHYL VINYL ETHER	0.153	0.153	0.0	106	0.00	11.39
63	M	EPICHLOROHYDRIN	0.023	0.021	8.7	104	-0.01	11.51
64	M	cis-1,3-DICHLOROPROPENE	0.489	0.491	-0.4	107	0.00	11.62
65	M	4-METHYL-2-PENTANONE	0.093	0.096	-3.2	112	0.00	11.72
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	107	0.00	13.52
67	S	TOLUENE-d8	1.245	1.257	-1.0	108	0.00	11.94
68		TOLUENE	0.791	0.763	3.5	104	0.00	12.02
69		ETHYL METHACRYLATE	0.361	0.334	7.5	99	0.00	12.18
70		trans-1,3-DICHLOROPROPENE	0.481	0.453	5.8	103	0.00	12.18
71		1,1,2-TRICHLOROETHANE	0.220	0.215	2.3	106	0.00	12.41
72	M	TETRACHLOROETHYLENE	0.298	0.531	-78.2#	188	0.00	12.63
73	M	2-HEXANONE	0.109	0.102	6.4	97	0.00	12.59
74		1,3-DICHLOROPROPANE	0.435	0.443	-1.8	113	0.00	12.61
75	M	BUTYL ACETATE	0.166	0.167	-0.6	108	0.00	12.67
76		3,3-DIMETHYL-1-BUTANOL	0.035	0.031	11.4	101	0.00	12.75
77	M	DIBROMOCHLOROMETHANE	0.328	0.350	-6.7	113	0.00	12.88
78	M	ETHYLENE DIBROMIDE	0.273	0.283	-3.7	109	0.00	13.06
79	M	CHLOROBENZENE	0.944	0.931	1.4	110	0.00	13.55
80	M	1,1,1,2-TETRACHLOROETHANE	0.424	0.436	-2.8	107	0.00	13.61
81	M	ETHYLBENZENE	1.569	1.585	-1.0	107	0.00	13.62
82	M	m,p-XYLENE	0.609	0.607	0.3	107	0.00	13.74
83	M	o-XYLENE	1.397	1.371	1.9	106	0.00	14.19
84	M	STYRENE	1.014	1.009	0.5	107	0.00	14.19
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.221	0.241	-9.0	114	0.00	14.46
87	M	CUMENE	1.718	1.818	-5.8	108	0.00	14.57
88		cis-1,4-DICHLORO-2-BUTENE	0.143	0.132	7.7	100	0.00	14.61
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	109	0.00	16.06
90	S	4-BROMOFLUOROBENZENE	0.732	0.734	-0.3	109	0.00	14.78
91		1,1,2,2-TETRACHLOROETHANE	0.571	0.511	10.5	98	0.00	14.86
92		trans-1,4-DICHLORO-2-BUTE	0.127	0.149	-17.3	125	0.00	14.91
93		1,2,3-TRICHLOROPROPANE	0.175	0.167	4.6	108	-0.01	14.95
94		N-PROPYLBENZENE	3.154	3.136	0.6	108	0.00	15.02
95		BROMOBENZENE	0.719	0.718	0.1	109	0.00	15.00
96		2-CHLOROTOLUENE	0.692	0.671	3.0	105	0.00	15.17
97		4-CHLOROTOLUENE	1.807	1.847	-2.2	109	0.00	15.28
98	M	1,3,5-TRIMETHYLBENZENE	2.451	2.425	1.1	104	0.00	15.18

Initial Calibration Verification

Job Number: JC58534 **Sample:** VT9412-ICV9412
Account: UTC United Technologies Corporation **Lab FileID:** T229100.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

99		TERT-BUTYLBENZENE	2.203	2.225	-1.0	108	0.00	15.57
100	M	1,2,4-TRIMETHYLBENZENE	2.553	2.520	1.3	108	0.00	15.61
101		SEC-BUTYLBENZENE	3.276	3.312	-1.1	106	0.00	15.81
102		P-ISOPROPYLTOLUENE	2.887	2.886	0.0	107	0.00	15.94
103	M	1,3-DICHLOROBENZENE	1.430	1.455	-1.7	109	0.00	16.00
104	M	1,4-DICHLOROBENZENE	1.533	1.479	3.5	109	0.00	16.09
105		N-BUTYLBENZENE	0.720	0.719	0.1	106	0.00	16.40
106	M	1,2-DICHLOROBENZENE	1.500	1.476	1.6	106	0.00	16.52
107		HEXACHLOROETHANE	0.340	0.306	10.0	100	0.00	16.83
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.173	0.163	5.8	109	0.01	17.36
109		HEXACHLOROBUTADIENE	0.818	0.744	9.0	103	0.00	18.39
110		1,3,5-TRICHLOROBENZENE	1.602	1.520	5.1	106	0.00	17.57
111		NITROBENZENE	0.053	0.046	13.2	121	0.00	17.57
112	M	1,2,4-TRICHLOROBENZENE	1.370	1.366	0.3	108	0.00	18.26
113		1,2,3-TRICHLOROBENZENE	1.205	1.159	3.8	102	0.00	18.85
114	M	NAPHTHALENE	2.343	2.315	1.2	108	0.00	18.58
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T229093.D MT9412.M Thu Jan 11 13:34:40 2018 MSDT

Initial Calibration Verification

Job Number: JC58534 **Sample:** VT9412-ICV9412
Account: UTC United Technologies Corporation **Lab FileID:** T229104.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\MSDChem\1\DATA\T229104.D Vial: 18
Acq On : 11 Jan 2018 11:45 am Operator: CHELSEAS
Sample : icv9412-20 Inst : GCMST
Misc : MS23653,VT9412,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9412.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jan 11 09:36:47 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	111	-0.02	7.42
2	M	TERTIARY BUTYL ALCOHOL	1.202	0.933	22.4	87	0.00	7.53
3	M	1,4-DIOXANE		----------NA----------				
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	111	0.00	9.46
5		CHLORODIFLUOROMETHANE		----------NA----------				
6	M	DICHLORODIFLUOROMETHANE		----------NA----------				
7	M	FREON 143A		----------NA----------				
8	M	FREON 142B		----------NA----------				
9	M	CHLOROMETHANE		----------NA----------				
10	M	VINYL CHLORIDE		----------NA----------				
11	M	BROMOMETHANE		----------NA----------				
12	M	CHLOROETHANE		----------NA----------				
13		VINYL BROMIDE		----------NA----------				
14	M	TRICHLOROFLUOROMETHANE		----------NA----------				
15	M	PENTANE		----------NA----------				
16	M	FREON 141B		----------NA----------				
17		ETHYL ETHER		----------NA----------				
18	M	1,1-DICHLOROETHYLENE		----------NA----------				
19	M	FREON 113		----------NA----------				
20		ACROLEIN		----------NA----------				
21	M	ACETONE		----------NA----------				
22	M	CARBON DISULFIDE		----------NA----------				
23	M	IODOMETHANE		----------NA----------				
24		ACETONITRILE		----------NA----------				
25		METHYL ACETATE		----------NA----------				
26	M	METHYLENE CHLORIDE		----------NA----------				
27	M	ACRYLONITRILE		----------NA----------				
28	M	METHYL TERT BUTYL ETHER	1.472	1.339	9.0	105	0.00	7.82
29	M	trans-1,2-DICHLOROETHYLEN		----------NA----------				
30	M	HEXANE		----------NA----------				
31	M	1,1-DICHLOROETHANE		----------NA----------				
32	M	VINYL ACETATE		----------NA----------				
33	M	DI-ISOPROPYL ETHER	1.463	1.290	11.8	103	0.00	8.34
34	M	ETHYL TERT BUTYL ETHER	1.504	1.332	11.4	102	0.00	8.75
35	M	2-BUTANONE		----------NA----------				
36	M	cis-1,2-DICHLOROETHYLENE		----------NA----------				
37	M	2,2-DICHLOROPROPANE		----------NA----------				
38	M	ETHYL ACETATE		----------NA----------				
39		BROMOCHLOROMETHANE		----------NA----------				
40	M	TETRAHYDROFURAN		----------NA----------				
41	M	CHLOROFORM		----------NA----------				

Initial Calibration Verification

Job Number: JC58534 **Sample:** VT9412-ICV9412
Account: UTC United Technologies Corporation **Lab FileID:** T229104.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

42		t-BUTYL FORMATE		----------NA----------					
43	M	1,1,1-TRICHLOROETHANE		----------NA----------					
44		CYCLOHEXANE		----------NA----------					
45	S	DIBROMOFLUOROMETHANE (SUR	0.461	0.457	0.9	112	0.00	9.50	
46		1,1-DICHLOROPROPENE		----------NA----------					
47		CARBON TETRACHLORIDE		----------NA----------					
48		ISOPROPYL ACETATE		----------NA----------					
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	112	0.00	10.32	
50	S	1,2-DICHLOROETHANE-d4	0.343	0.343	0.0	112	0.00	9.90	
51	M	BENZENE	1.154	1.073	7.0	103	0.00	10.00	
52	M	1,2-DICHLOROETHANE	0.398	0.356	10.6	99	0.00	9.99	
53		2,2,4-TRIMETHYLPENTANE		----------NA----------					
54	M	TERT-AMYL METHYL ETHER	1.122	0.931	17.0	103	0.00	10.02	
55	M	HEPTANE		----------NA----------					
56	M	TRICHLOROETHYLENE	0.321	0.283	11.8	101	0.00	10.65	
57	M	1,2-DICHLOROPROPANE		----------NA----------					
58	M	DIBROMOMETHANE		----------NA----------					
59		METHYL METHACRYLATE		----------NA----------					
60		METHYLCYCLOHEXANE		----------NA----------					
61	M	BROMODICHLOROMETHANE		----------NA----------					
62	M	2-CHLOROETHYL VINYL ETHER		----------NA----------					
63	M	EPICHLOROHYDRIN		----------NA----------					
64	M	cis-1,3-DICHLOROPROPENE		----------NA----------					
65	M	4-METHYL-2-PENTANONE		----------NA----------					
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	115	0.00	13.52	
67	S	TOLUENE-d8	1.245	1.214	2.5	112	0.00	11.94	
68		TOLUENE	0.791	0.690	12.8	101	0.00	12.01	
69		ETHYL METHACRYLATE		----------NA----------					
70		trans-1,3-DICHLOROPROPENE		----------NA----------					
71		1,1,2-TRICHLOROETHANE		----------NA----------					
72	M	TETRACHLOROETHYLENE	0.298	0.274	8.1	105	0.00	12.62	
73	M	2-HEXANONE		----------NA----------					
74		1,3-DICHLOROPROPANE		----------NA----------					
75	M	BUTYL ACETATE		----------NA----------					
76		3,3-DIMETHYL-1-BUTANOL		----------NA----------					
77	M	DIBROMOCHLOROMETHANE		----------NA----------					
78	M	ETHYLENE DIBROMIDE	0.273	0.232	15.0	96	0.00	13.06	
79	M	CHLOROBENZENE	0.944	0.851	9.9	108	0.00	13.55	
80	M	1,1,1,2-TETRACHLOROETHANE		----------NA----------					
81	M	ETHYLBENZENE	1.569	1.475	6.0	107	0.00	13.62	
82	M	m,p-XYLENE	0.609	0.556	8.7	106	0.00	13.73	
83	M	o-XYLENE	1.397	1.234	11.7	103	0.00	14.19	
84	M	STYRENE		----------NA----------					
85		n-AMYL ACETATE		----------NA----------					
86	M	BROMOFORM		----------NA----------					
87	M	CUMENE	1.718	1.702	0.9	109	0.00	14.56	
88		cis-1,4-DICHLORO-2-BUTENE		----------NA----------					
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	114	0.00	16.06	
90	S	4-BROMOFLUOROBENZENE	0.732	0.753	-2.9	116	0.00	14.78	
91		1,1,2,2-TETRACHLOROETHANE		----------NA----------					
92		trans-1,4-DICHLORO-2-BUTE		----------NA----------					
93		1,2,3-TRICHLOROPROPANE		----------NA----------					
94		N-PROPYLBENZENE	3.154	3.023	4.2	108	0.00	15.02	
95		BROMOBENZENE		----------NA----------					
96		2-CHLOROTOLUENE		----------NA----------					
97		4-CHLOROTOLUENE		----------NA----------					
98	M	1,3,5-TRIMETHYLBENZENE	2.451	2.323	5.2	104	0.00	15.18	

Initial Calibration Verification

Job Number: JC58534 **Sample:** VT9412-ICV9412
Account: UTC United Technologies Corporation **Lab FileID:** T229104.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

99		TERT-BUTYLBENZENE	2.203	2.068	6.1	104	0.00	15.57
100	M	1,2,4-TRIMETHYLBENZENE	2.553	2.438	4.5	109	0.00	15.61
101		SEC-BUTYLBENZENE	3.276	3.178	3.0	106	0.00	15.81
102		P-ISOPROPYLTOLUENE	2.887	2.819	2.4	109	0.00	15.94
103	M	1,3-DICHLOROBENZENE	1.430	1.396	2.4	109	0.00	16.00
104	M	1,4-DICHLOROBENZENE	1.533	1.411	8.0	109	0.00	16.09
105		N-BUTYLBENZENE	0.720	0.711	1.3	109	0.00	16.39
106	M	1,2-DICHLOROBENZENE	1.500	1.415	5.7	106	0.00	16.52
107		HEXACHLOROETHANE		----------NA----------				
108	M	1,2-DIBROMO-3-CHLOROPROPA		----------NA----------				
109		HEXACHLOROBUTADIENE		----------NA----------				
110		1,3,5-TRICHLOROBENZENE		----------NA----------				
111		NITROBENZENE		----------NA----------				
112	M	1,2,4-TRICHLOROBENZENE		----------NA----------				
113		1,2,3-TRICHLOROBENZENE		----------NA----------				
114	M	NAPHTHALENE	2.343	2.061	12.0	100	0.00	18.57
115	M	INDANE		----------NA----------				
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T229093.D MT9412.M Thu Jan 11 13:34:41 2018 MSDT

Continuing Calibration Summary

Job Number: JC58534 **Sample:** VT9413-CC9412
Account: UTC United Technologies Corporation **Lab FileID:** T229107.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\vt9413\t229107.d Vial: 3
Acq On : 12 Jan 2018 9:33 am Operator: CHELSEAS
Sample : cc9412-20 Inst : GCMST
Misc : MS23653,VT9413,W,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MT9412.M (RTE Integrator)
Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
Last Update : Thu Jan 11 09:36:47 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		TERT BUTYL ALCOHOL-d9	1.000	1.000	0.0	115	0.00	7.42
2	M	TERTIARY BUTYL ALCOHOL	1.202	0.991	17.6	96	0.00	7.54
3	M	1,4-DIOXANE	0.091	0.073	19.8	91	0.00	11.00
4		PENTAFLUOROBENZENE	1.000	1.000	0.0	119	0.00	9.46
5		CHLORODIFLUOROMETHANE	0.985	0.793	19.5	93	0.00	4.37
6	M	DICHLORODIFLUOROMETHANE	1.132	0.997	11.9	100	0.00	4.37
7	M	FREON 143A	1.025	0.750	26.8	88	0.00	4.02
8	M	FREON 142B	0.867	0.777	10.4	106	0.00	4.62
9	M	CHLOROMETHANE	0.877	0.743	15.3	107	0.00	4.69
10	M	VINYL CHLORIDE	0.931	0.798	14.3	100	0.00	4.93
11	M	BROMOMETHANE	0.575	0.542	5.7	114	0.00	5.57
12	M	CHLOROETHANE	0.423	0.397	6.1	113	0.00	5.73
13		VINYL BROMIDE	0.460	0.379	17.6	102	0.00	6.04
14	M	TRICHLOROFLUOROMETHANE	1.020	0.810	20.6	95	0.00	6.14
15	M	PENTANE		----------NA----------				
16	M	FREON 141B	0.812	0.712	12.3	107	0.00	6.53
17		ETHYL ETHER	0.210	0.173	17.6	102	0.00	6.52
18	M	1,1-DICHLOROETHYLENE	0.697	0.564	19.1	97	0.00	6.90
19	M	FREON 113	0.505	0.385	23.8	87	-0.01	6.88
20		ACROLEIN	0.051	0.044	13.7	94	0.00	6.71
21	M	ACETONE	0.039	0.029	25.6	94	-0.01	6.90
22	M	CARBON DISULFIDE	1.479	1.196	19.1	96	0.00	7.28
23	M	IODOMETHANE	0.872	0.716	17.9	101	0.00	7.15
24		ACETONITRILE	0.038	0.032	15.8	111	0.00	7.28
25		METHYL ACETATE	0.207	0.175	15.5	102	0.00	7.31
26	M	METHYLENE CHLORIDE	0.435	0.367	15.6	102	-0.01	7.50
27	M	ACRYLONITRILE	0.109	0.100	8.3	106	0.00	7.77
28	M	METHYL TERT BUTYL ETHER	1.472	1.208	17.9	102	0.00	7.82
29	M	trans-1,2-DICHLOROETHYLEN	0.579	0.489	15.5	101	0.00	7.86
30	M	HEXANE	0.546	0.421	22.9	89	0.00	8.14
31	M	1,1-DICHLOROETHANE	0.741	0.616	16.9	99	0.00	8.35
32	M	VINYL ACETATE	0.053	0.057	-7.5	142	0.00	8.32
33	M	DI-ISOPROPYL ETHER	1.463	1.181	19.3	101	0.00	8.34
34	M	ETHYL TERT BUTYL ETHER	1.504	1.219	18.9	101	0.00	8.75
35	M	2-BUTANONE	0.042	0.032	23.8	98	0.00	8.96
36	M	cis-1,2-DICHLOROETHYLENE	0.483	0.398	17.6	103	0.00	9.01
37	M	2,2-DICHLOROPROPANE	0.897	0.779	13.2	105	0.00	9.03
38	M	ETHYL ACETATE	0.047	0.037	21.3	97	0.00	8.97
39		BROMOCHLOROMETHANE	0.241	0.204	15.4	105	0.00	9.28
40	M	TETRAHYDROFURAN	0.097	0.090	7.2	118	0.00	9.33
41	M	CHLOROFORM	0.792	0.652	17.7	103	0.00	9.33

Continuing Calibration Summary

Job Number: JC58534 **Sample:** VT9413-CC9412
Account: UTC United Technologies Corporation **Lab FileID:** T229107.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

42		t-BUTYL FORMATE	0.208	0.201	3.4	124	0.00	9.38
43	M	1,1,1-TRICHLOROETHANE	0.910	0.746	18.0	97	0.00	9.60
44		CYCLOHEXANE	0.745	0.543	27.1	89	0.00	9.69
45	S	DIBROMOFLUOROMETHANE (SUR	0.461	0.451	2.2	118	0.00	9.51
46		1,1-DICHLOROPROPENE	0.598	0.469	21.6	96	0.00	9.76
47		CARBON TETRACHLORIDE	0.809	0.690	14.7	98	0.00	9.80
48		ISOPROPYL ACETATE	0.079	0.064	19.0	102	0.00	9.89
49		1,4-DIFLUOROBENZENE	1.000	1.000	0.0	116	0.00	10.32
50	S	1,2-DICHLOROETHANE-d4	0.343	0.351	-2.3	119	0.00	9.91
51	M	BENZENE	1.154	1.008	12.7	100	0.00	10.00
52	M	1,2-DICHLOROETHANE	0.398	0.349	12.3	100	0.00	9.99
53		2,2,4-TRIMETHYLPENTANE	1.111	0.866	22.1	89	0.00	10.02
54	M	TERT-AMYL METHYL ETHER	1.122	0.894	20.3	103	0.00	10.02
55	M	HEPTANE	0.226	0.178	21.2	87	0.00	10.16
56	M	TRICHLOROETHYLENE	0.321	0.261	18.7	97	0.00	10.65
57	M	1,2-DICHLOROPROPANE	0.302	0.257	14.9	102	0.00	10.91
58	M	DIBROMOMETHANE	0.179	0.160	10.6	108	0.00	11.05
59		METHYL METHACRYLATE	0.063	0.057	9.5	103	0.00	10.88
60		METHYLCYCLOHEXANE	0.659	0.507	23.1	87	0.00	10.91
61	M	BROMODICHLOROMETHANE	0.426	0.377	11.5	103	0.00	11.16
62	M	2-CHLOROETHYL VINYL ETHER	0.153	0.141	7.8	106	0.00	11.39
63	M	EPICHLOROHYDRIN	0.023	0.020	13.0	107	0.00	11.51
64	M	cis-1,3-DICHLOROPROPENE	0.489	0.433	11.5	102	0.00	11.62
65	M	4-METHYL-2-PENTANONE	0.093	0.084	9.7	106	0.00	11.72
66	I	CHLOROBENZENE-D5	1.000	1.000	0.0	117	0.00	13.52
67	S	TOLUENE-d8	1.245	1.243	0.2	117	0.00	11.94
68		TOLUENE	0.791	0.669	15.4	100	0.00	12.02
69		ETHYL METHACRYLATE	0.361	0.311	13.9	101	0.00	12.18
70		trans-1,3-DICHLOROPROPENE	0.481	0.409	15.0	102	0.00	12.18
71		1,1,2-TRICHLOROETHANE	0.220	0.182	17.3	98	0.00	12.41
72	M	TETRACHLOROETHYLENE	0.298	0.257	13.8	100	0.00	12.63
73	M	2-HEXANONE	0.109	0.093	14.7	97	0.00	12.59
74		1,3-DICHLOROPROPANE	0.435	0.369	15.2	103	0.00	12.60
75	M	BUTYL ACETATE	0.166	0.147	11.4	104	0.00	12.67
76		3,3-DIMETHYL-1-BUTANOL	0.035	0.027	22.9	96	0.00	12.76
77	M	DIBROMOCHLOROMETHANE	0.328	0.293	10.7	103	0.00	12.88
78	M	ETHYLENE DIBROMIDE	0.273	0.246	9.9	104	0.00	13.05
79	M	CHLOROBENZENE	0.944	0.798	15.5	103	0.00	13.56
80	M	1,1,1,2-TETRACHLOROETHANE	0.424	0.389	8.3	105	0.00	13.61
81	M	ETHYLBENZENE	1.569	1.375	12.4	101	0.00	13.62
82	M	m,p-XYLENE	0.609	0.510	16.3	99	0.00	13.73
83	M	o-XYLENE	1.397	1.165	16.6	99	0.00	14.19
84	M	STYRENE	1.014	0.848	16.4	98	0.00	14.19
85		n-AMYL ACETATE		----------NA----------				
86	M	BROMOFORM	0.221	0.198	10.4	102	0.00	14.47
87	M	CUMENE	1.718	1.555	9.5	101	0.00	14.56
88		cis-1,4-DICHLORO-2-BUTENE	0.143	0.128	10.5	106	0.00	14.61
89		1,4-DICHLOROBENZENE-D4	1.000	1.000	0.0	113	0.00	16.06
90	S	4-BROMOFLUOROBENZENE	0.732	0.751	-2.6	116	0.00	14.78
91		1,1,2,2-TETRACHLOROETHANE	0.571	0.512	10.3	103	0.00	14.86
92		trans-1,4-DICHLORO-2-BUTE	0.127	0.124	2.4	108	0.00	14.92
93		1,2,3-TRICHLOROPROPANE	0.175	0.142	18.9	96	0.00	14.95
94		N-PROPYLBENZENE	3.154	2.774	12.0	99	0.00	15.01
95		BROMOBENZENE	0.719	0.634	11.8	100	0.00	15.00
96		2-CHLOROTOLUENE	0.692	0.613	11.4	100	0.00	15.17
97		4-CHLOROTOLUENE	1.807	1.583	12.4	97	0.00	15.28
98	M	1,3,5-TRIMETHYLBENZENE	2.451	2.179	11.1	97	0.00	15.18

Continuing Calibration Summary

Job Number: JC58534 **Sample:** VT9413-CC9412
Account: UTC United Technologies Corporation **Lab FileID:** T229107.D
Project: SECORINI: Zanesville, NON RESPONSIVE Avenue, Zanesville, OH

99		TERT-BUTYLBENZENE	2.203	1.943	11.8	98	0.00	15.57
100	M	1,2,4-TRIMETHYLBENZENE	2.553	2.242	12.2	100	0.00	15.62
101		SEC-BUTYLBENZENE	3.276	2.955	9.8	99	0.00	15.81
102		P-ISOPROPYLTOLUENE	2.887	2.566	11.1	99	0.00	15.93
103	M	1,3-DICHLOROBENZENE	1.430	1.251	12.5	98	0.00	16.00
104	M	1,4-DICHLOROBENZENE	1.533	1.273	17.0	98	0.00	16.09
105		N-BUTYLBENZENE	0.720	0.668	7.2	102	0.00	16.39
106	M	1,2-DICHLOROBENZENE	1.500	1.297	13.5	97	0.00	16.52
107		HEXACHLOROETHANE	0.340	0.299	12.1	102	0.00	16.83
108	M	1,2-DIBROMO-3-CHLOROPROPA	0.173	0.152	12.1	106	0.00	17.35
109		HEXACHLOROBUTADIENE	0.818	0.655	19.9	95	0.00	18.40
110		1,3,5-TRICHLOROBENZENE	1.602	1.350	15.7	98	0.00	17.57
111		NITROBENZENE	0.053	0.041	22.6	113	0.00	17.58
112	M	1,2,4-TRICHLOROBENZENE	1.370	1.271	7.2	104	0.00	18.26
113		1,2,3-TRICHLOROBENZENE	1.205	1.101	8.6	101	0.00	18.85
114	M	NAPHTHALENE	2.343	2.219	5.3	107	0.00	18.57
115	M	INDANE	2.120	1.899	10.4	98	0.00	16.37
116		ETHYLENIMINE		----------NA----------				
117		BIS(CHLOROMETHYL)ETHER		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T229093.D MT9412.M Mon Jan 15 03:29:05 2018

6.7.5

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9413\
Data File : t229114.d
Acq On : 12 Jan 2018 1:26 pm
Operator : CHELSEAS
Sample : jc58534-1 Inst : GCMST
Misc : MS23720,VT9413,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9412.M
Quant Results File: MT9412.RES
Quant Time: Jan 15 03:44:50 2018
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jan 11 09:36:47 2018
Response via : Initial Calibration

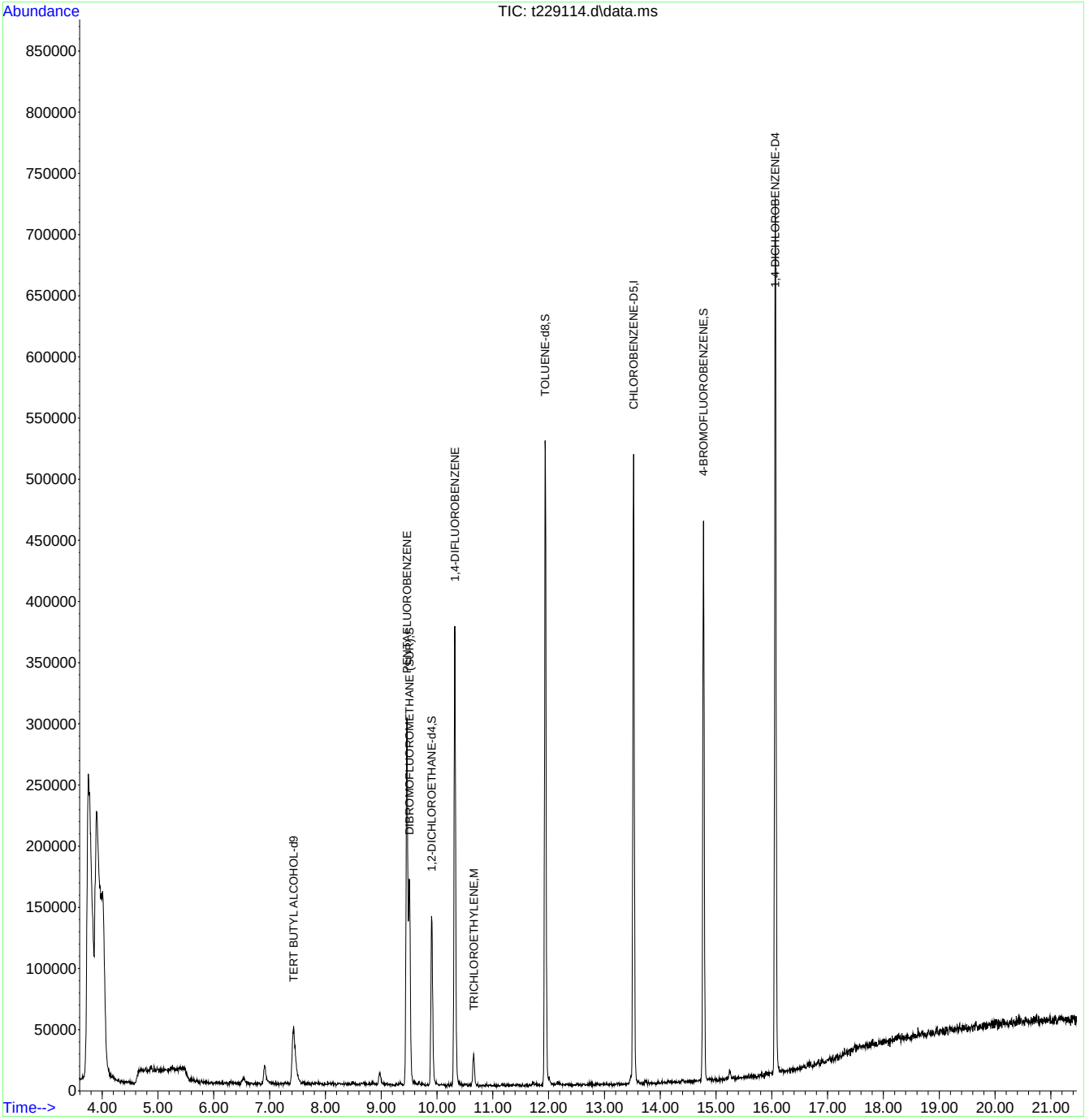
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.431	65	106723	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.460	168	240015	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.317	114	335358	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.522	117	323645	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.063	152	217112	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.507	113	110523	29.98	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.93%			
50) 1,2-DICHLOROETHANE-d4	9.904	65	116951	30.53	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 101.77%			
67) TOLUENE-d8	11.938	98	392576	29.22	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.40%			
90) 4-BROMOFLUOROBENZENE	14.777	174	152806	28.86	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 96.20%			
Target Compounds						Qvalue
56) TRICHLOROETHYLENE	10.662	95	9590	2.67	PPb	88

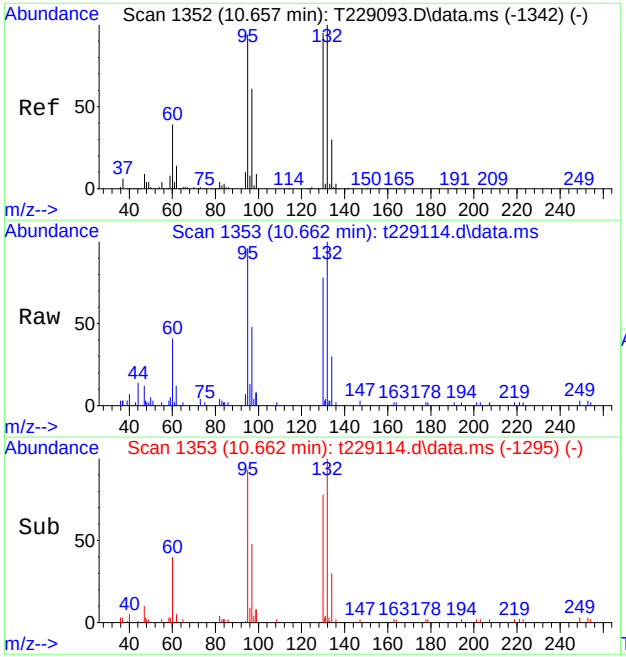
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\vt9413\
Data File : t229114.d
Acq On : 12 Jan 2018 1:26 pm
Operator : CHELSEAS
Sample : jc58534-1 Inst : GCMST
Misc : MS23720,VT9413,W,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9412.M
Quant Results File: MT9412.RES
Quant Time: Jan 15 03:44:50 2018
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jan 11 09:36:47 2018
Response via : Initial Calibration

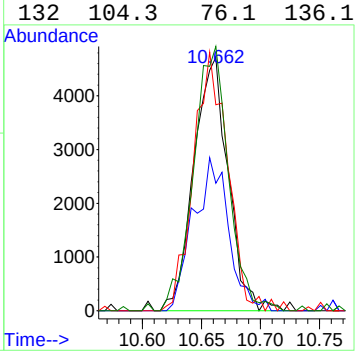




#56
TRICHLOROETHYLENE
Concen: 2.67 PPb
RT: 10.662 min Scan# 1353
Delta R.T. 0.005 min
Lab File: t229114.d
Acq: 12 Jan 2018 1:26 pm

Tgt Ion: 95 Resp: 9590

Ion	Ratio	Lower	Upper
95	100		
97	50.3	34.6	94.6
130	81.3	71.3	131.3
132	104.3	76.1	136.1



Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\data\vt9413\
Data File : t229108.d
Acq On : 12 Jan 2018 10:15 am
Operator : CHELSEAS
Sample : mb Inst : GCMST
Misc : MS23732,VT9413,W,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9412.M
Quant Results File: MT9412.RES
Quant Time: Jan 15 03:31:32 2018
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jan 11 09:36:47 2018
Response via : Initial Calibration

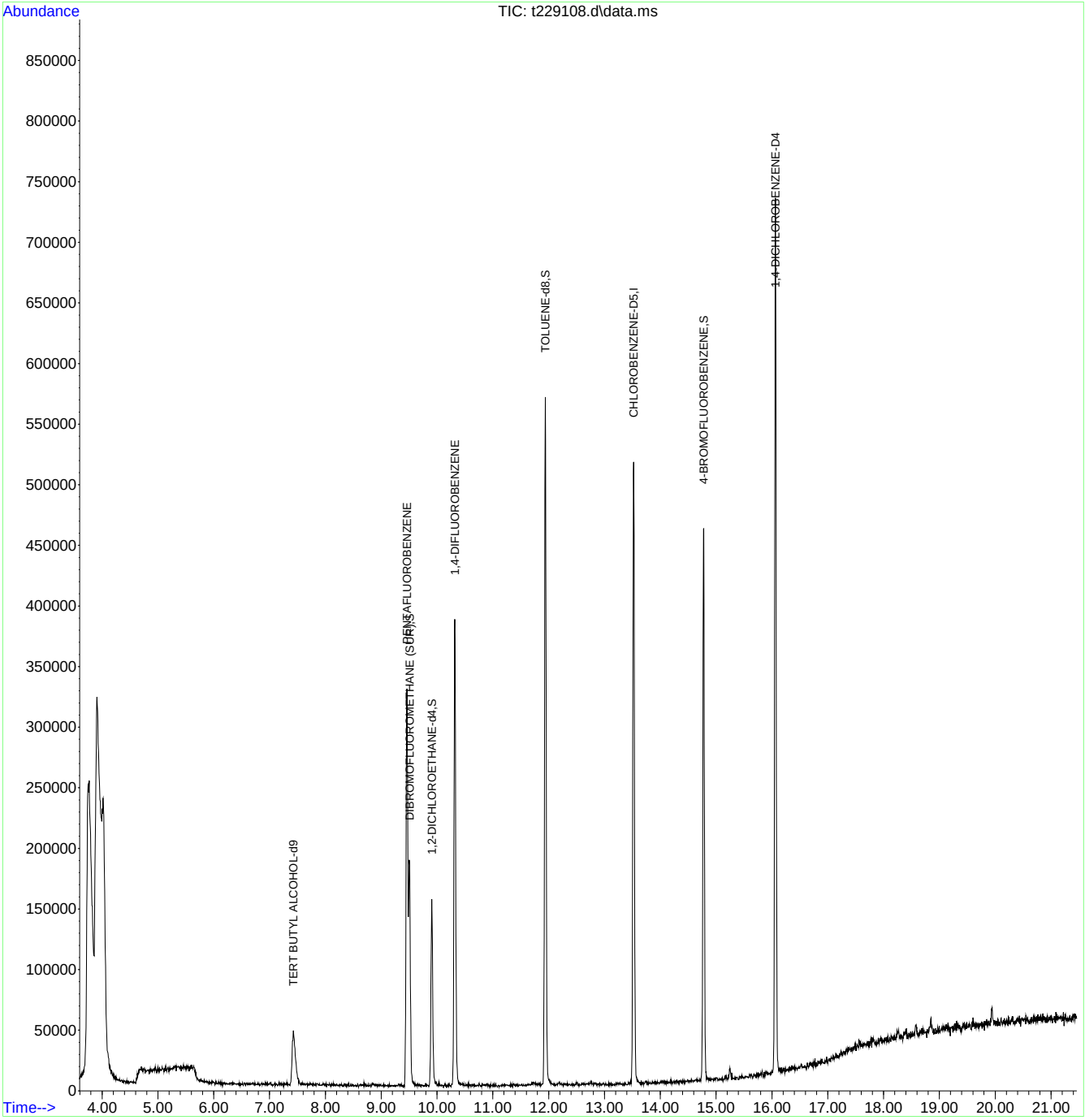
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) TERT BUTYL ALCOHOL-d9	7.428	65	103927	300.00	PPb	0.00
4) PENTAFLUOROBENZENE	9.461	168	261000	30.00	PPB	0.00
49) 1,4-DIFLUOROBENZENE	10.319	114	364298	30.00	PPb	0.00
66) CHLOROBENZENE-D5	13.524	117	342013	30.00	PPb	0.00
89) 1,4-DICHLOROBENZENE-D4	16.064	152	219585	30.00	PPB	0.00
System Monitoring Compounds						
45) DIBROMOFLUOROMETHANE (...	9.508	113	120040	29.95	PPb	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 99.83%			
50) 1,2-DICHLOROETHANE-d4	9.906	65	126337	30.36	PPB	0.00
Spiked Amount 30.000	Range 76 - 122		Recovery = 101.20%			
67) TOLUENE-d8	11.939	98	416094	29.31	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 97.70%			
90) 4-BROMOFLUOROBENZENE	14.778	174	162120	30.27	PPB	0.00
Spiked Amount 30.000	Range 80 - 120		Recovery = 100.90%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT/LSC Reviewed)

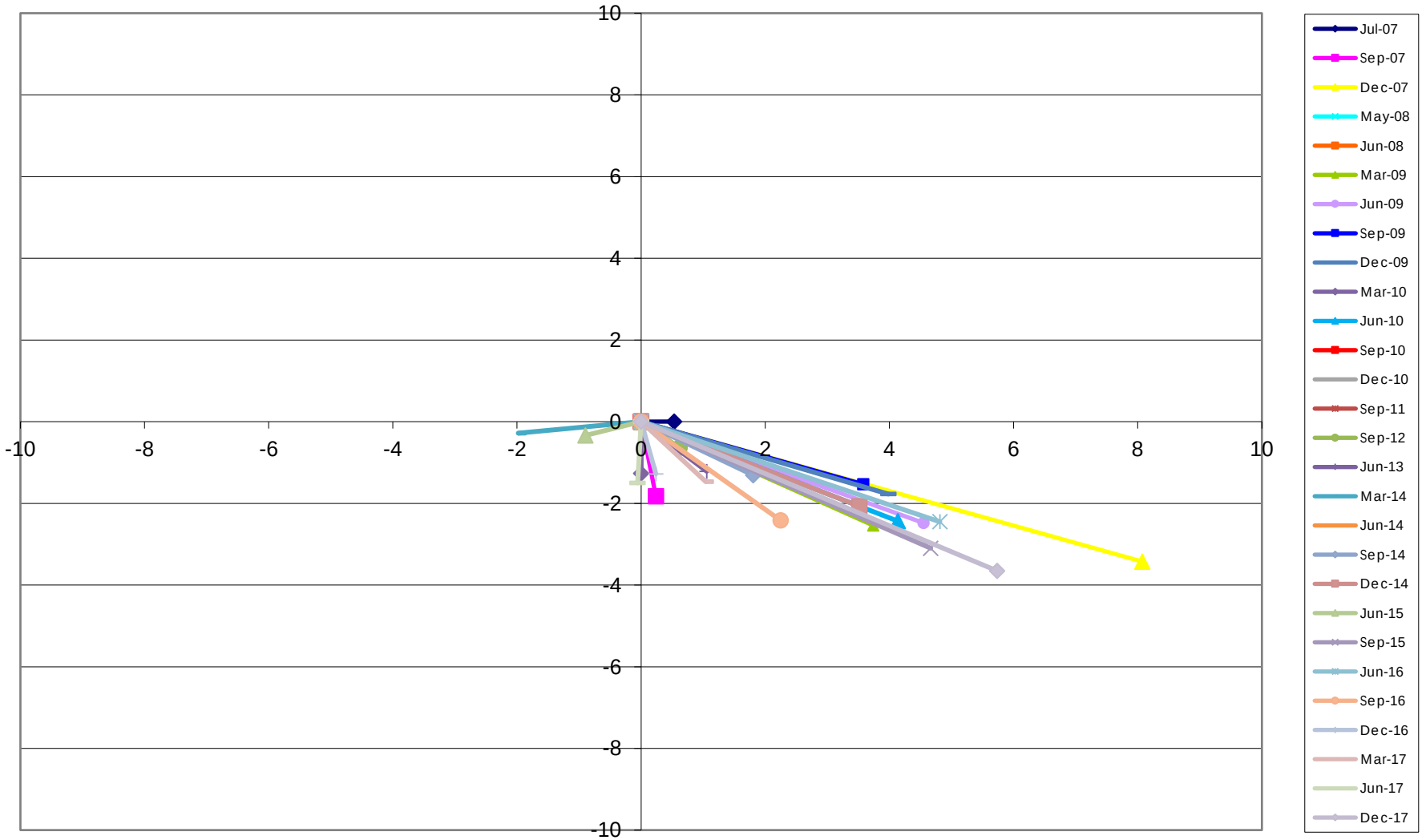
Data Path : C:\msdchem\1\data\vt9413\
Data File : t229108.d
Acq On : 12 Jan 2018 10:15 am
Operator : CHELSEAS
Sample : mb Inst : GCMST
Misc : MS23732,VT9413,W,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MT9412.M
Quant Results File: MT9412.RES
Quant Time: Jan 15 03:31:32 2018
Quant Title : EPA 624, Rxi624 60m x 0.25mm x 1.4um
QLast Update : Thu Jan 11 09:36:47 2018
Response via : Initial Calibration

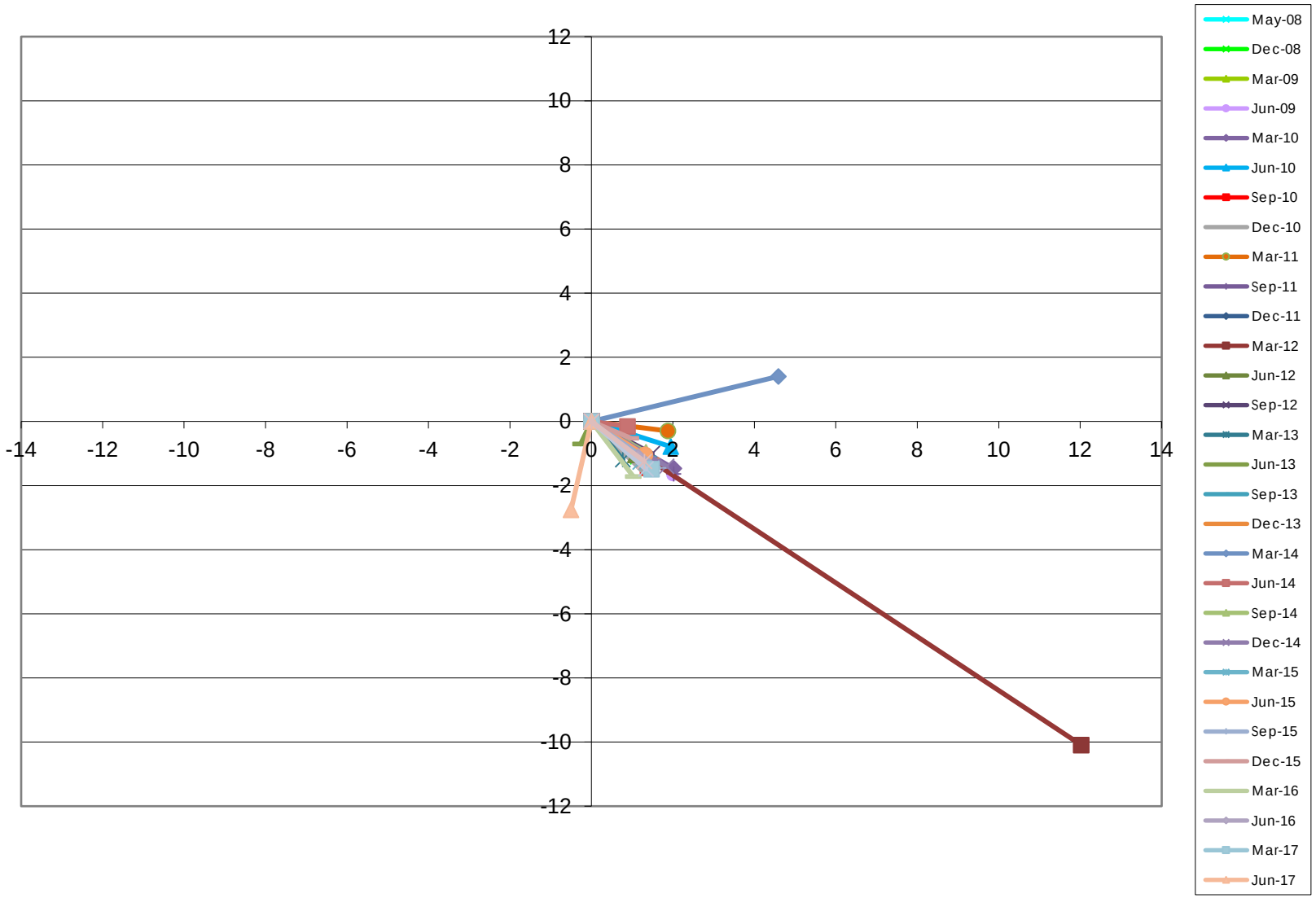


Appendix G SUMMARY OF HISTORICAL TRILINEAR PLOT ANALYSIS

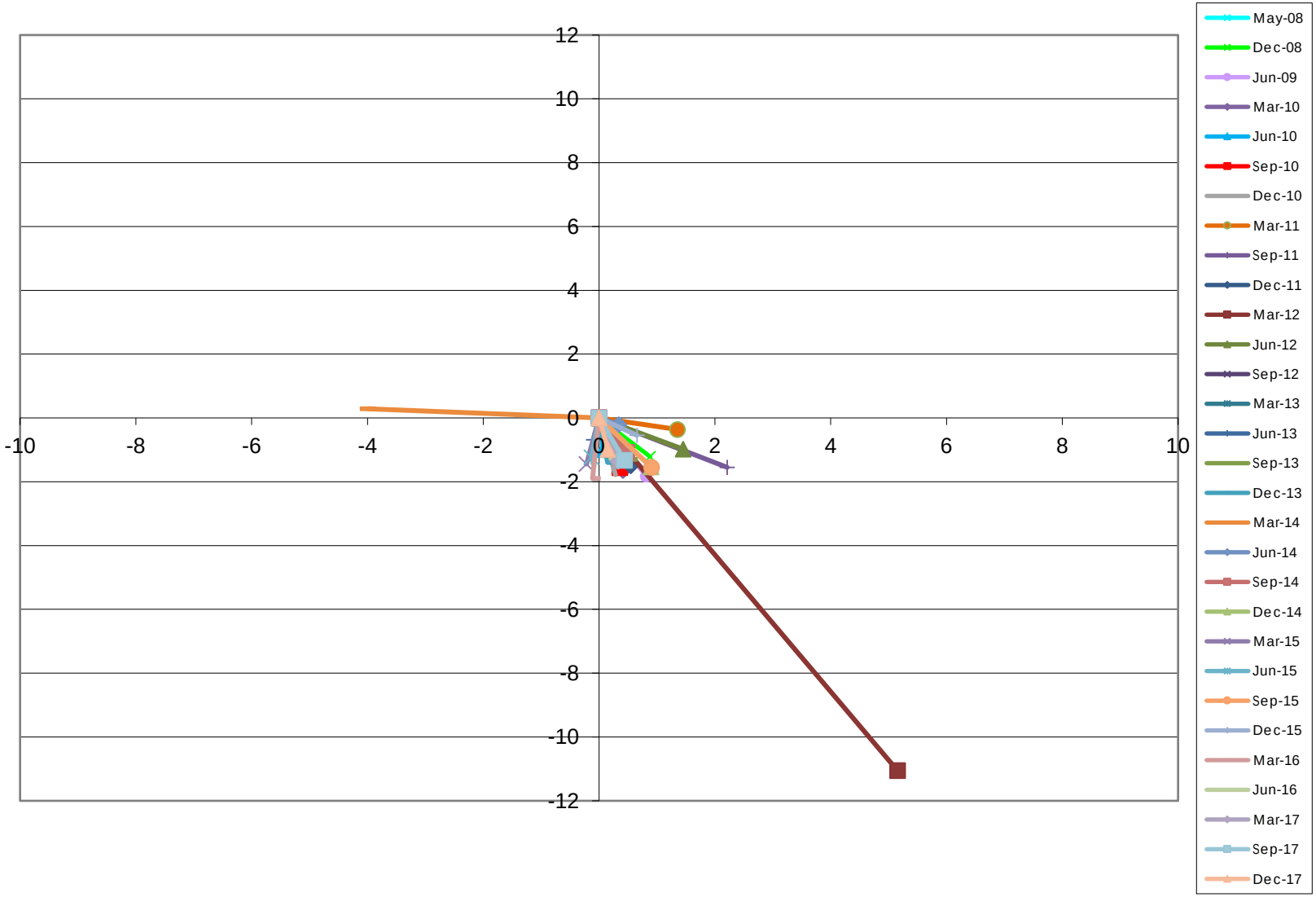
UTC Zanesville Well Field Site
Triplet: B-9S, B-13S, B-11S



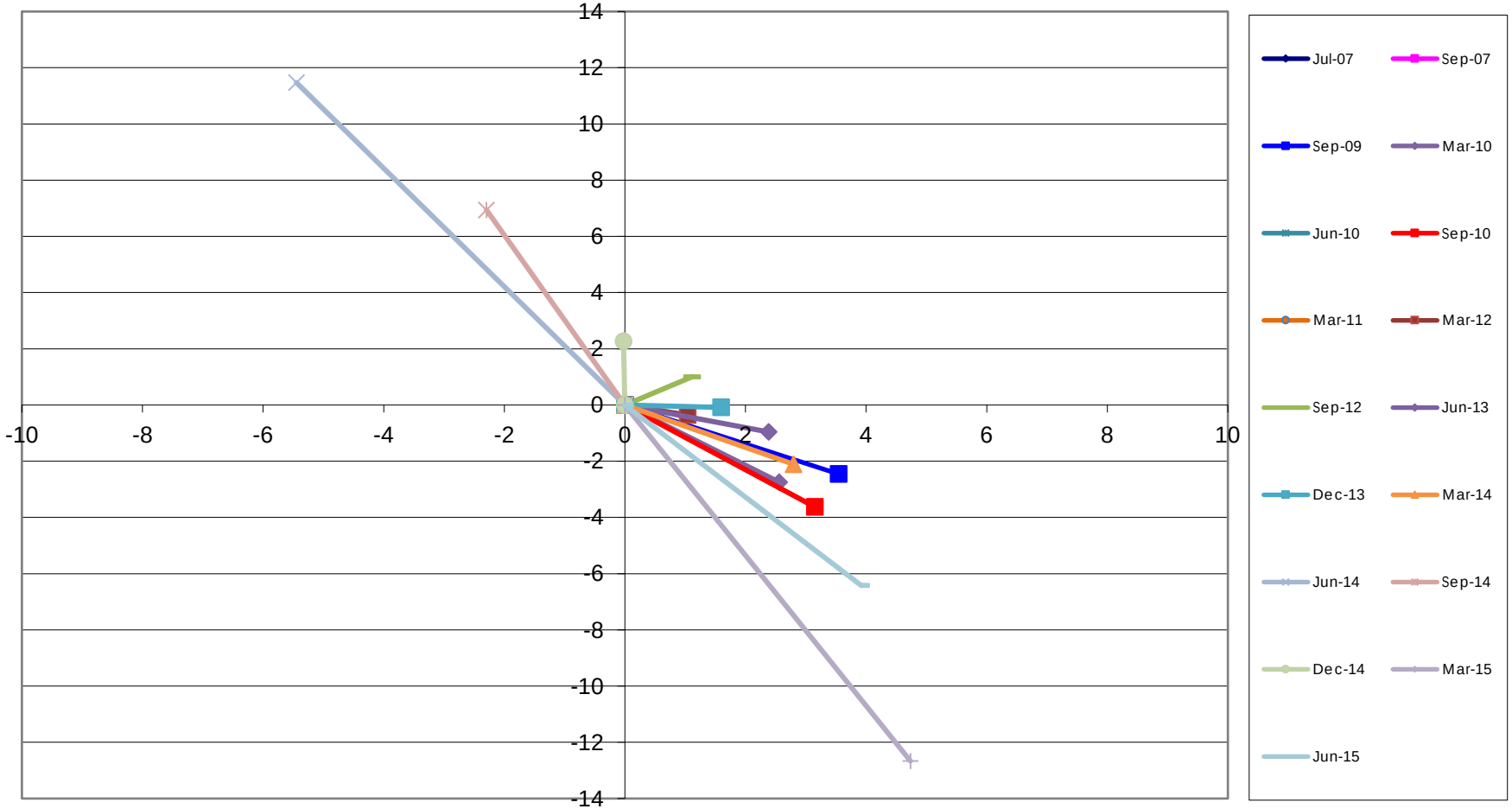
UTC Zanesville Well Field Site
Triplet: C-3S, C-11S, B-23



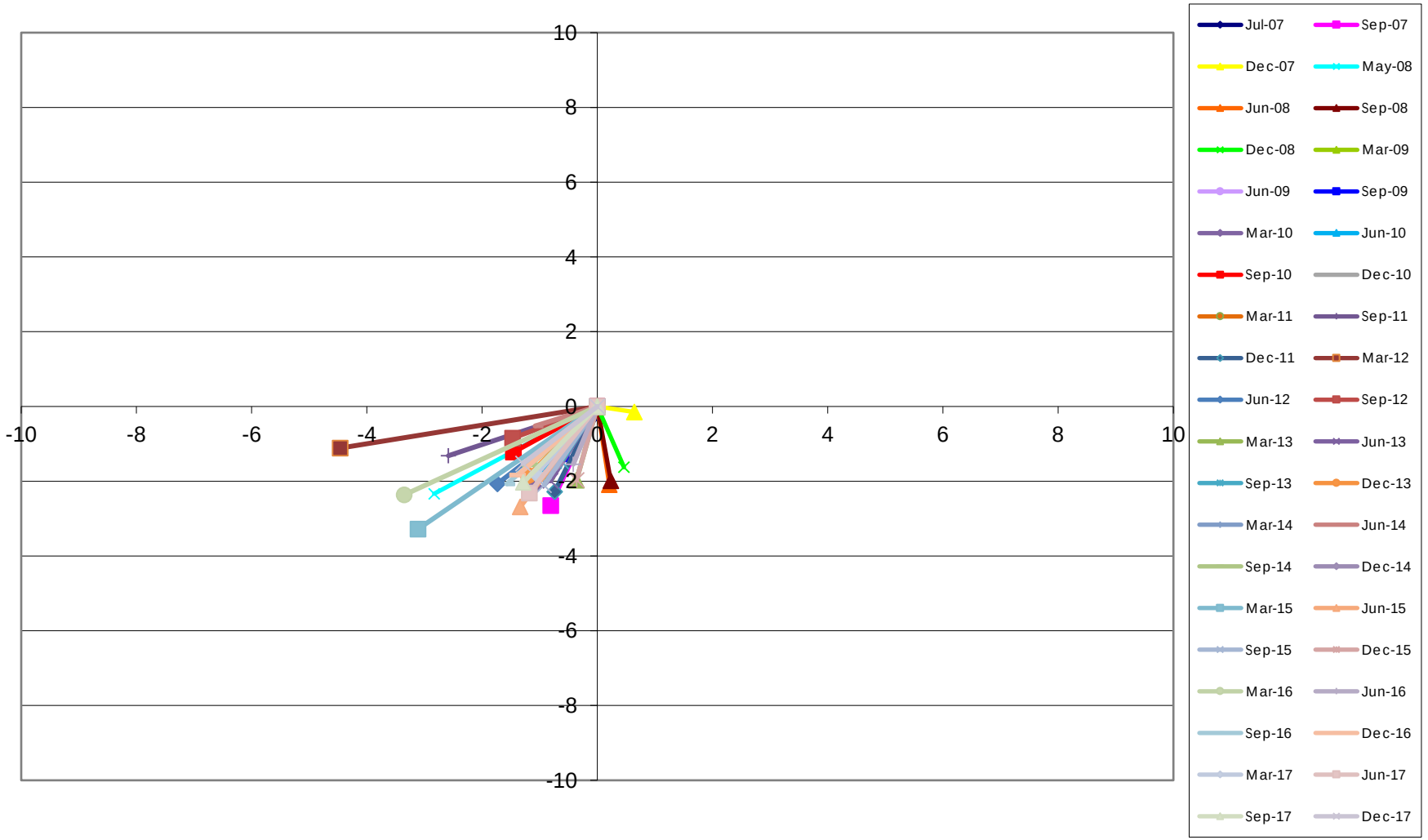
UTC Zanesville Well Field Site
Triplet: C-11S, C-10S, B-23



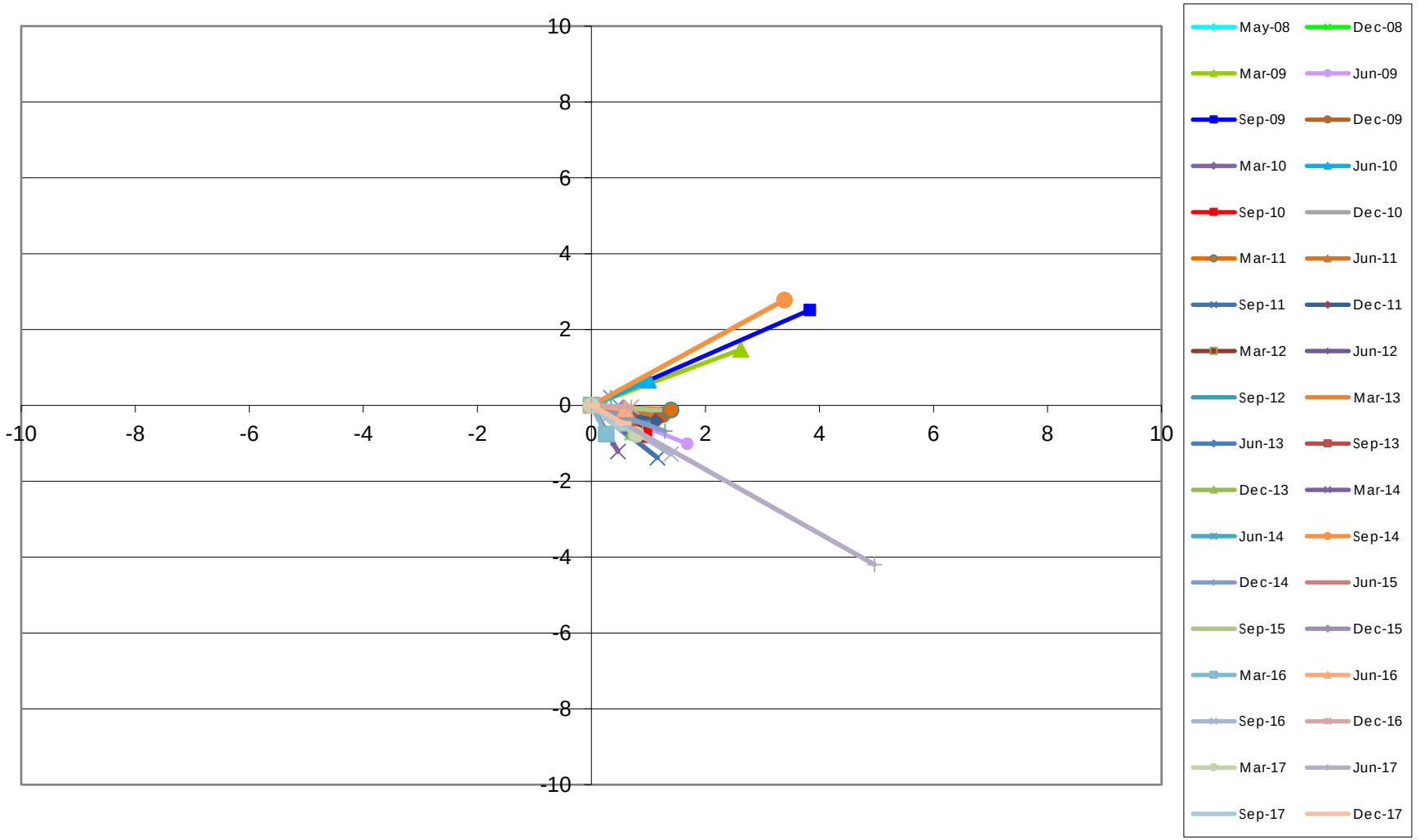
UTC Zanesville Well Field Site
Triplet: B-8I, B-11I, B-2I



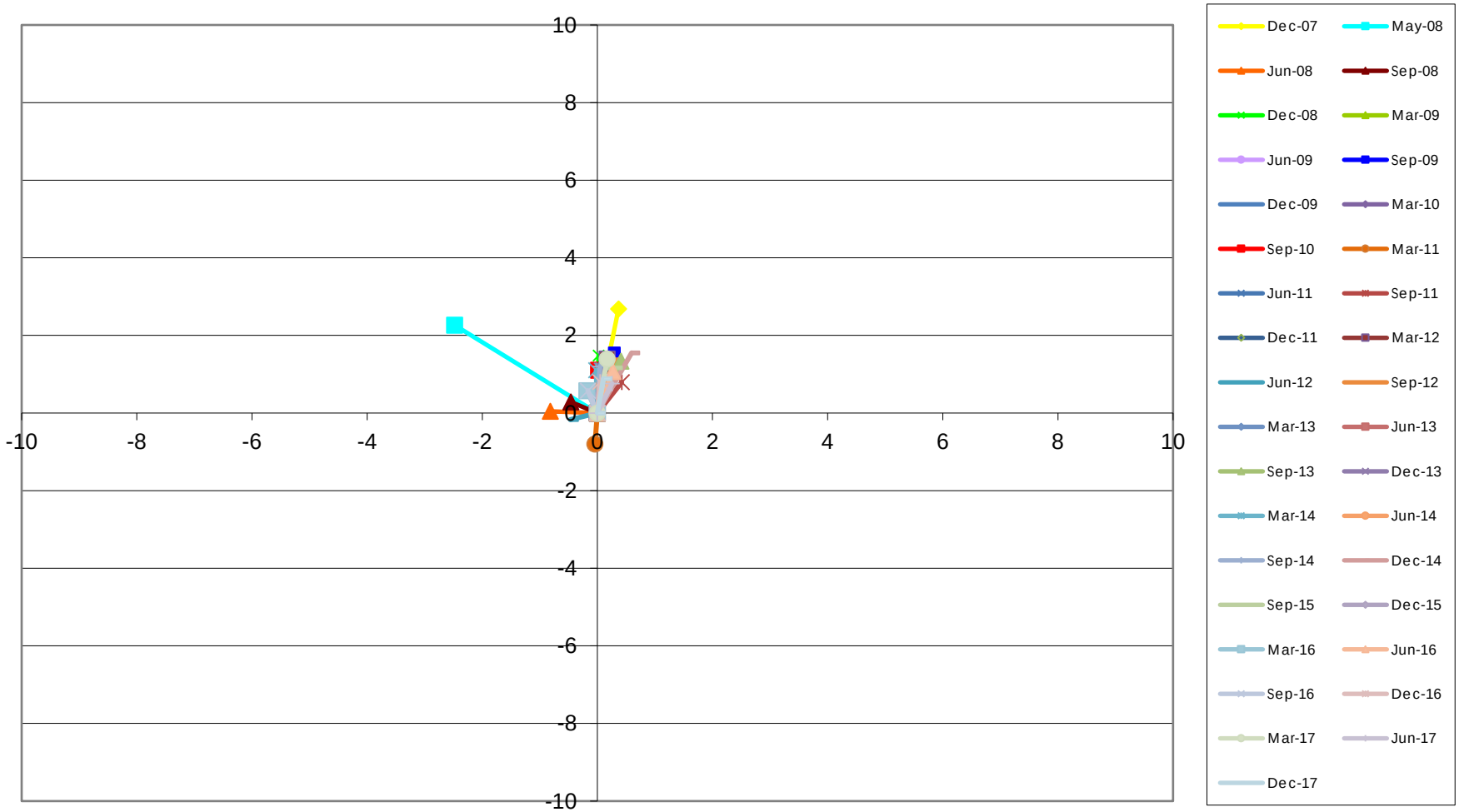
UTC Zanesville Well Field Site
Triplet: B-13I, B-5I, B-11I



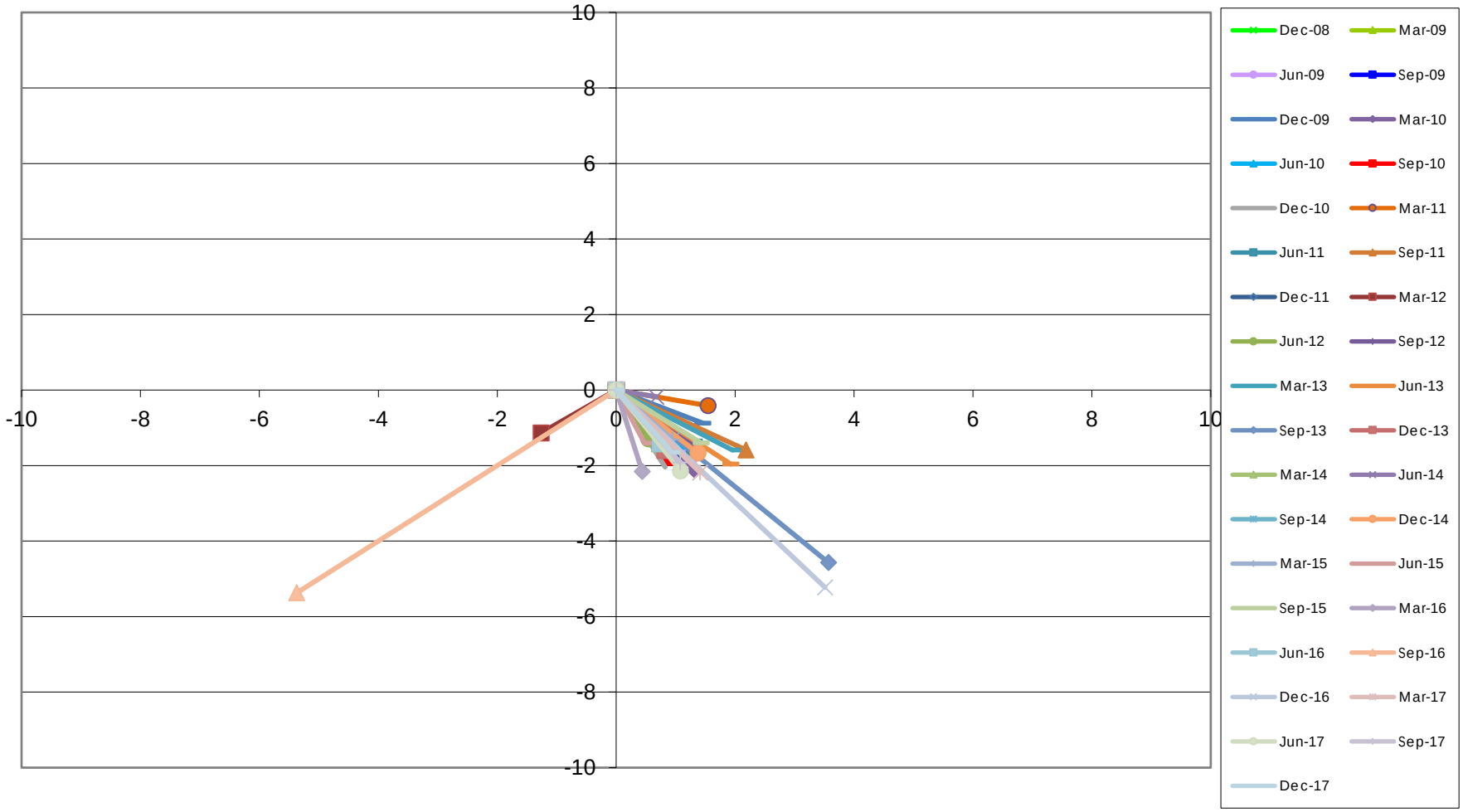
UTC Zanesville Well Field Site
Triplet: C-11I, C-6, C-3I



UTC Zanesville Well Field Site
Triplet: C-9, C-8, C-7



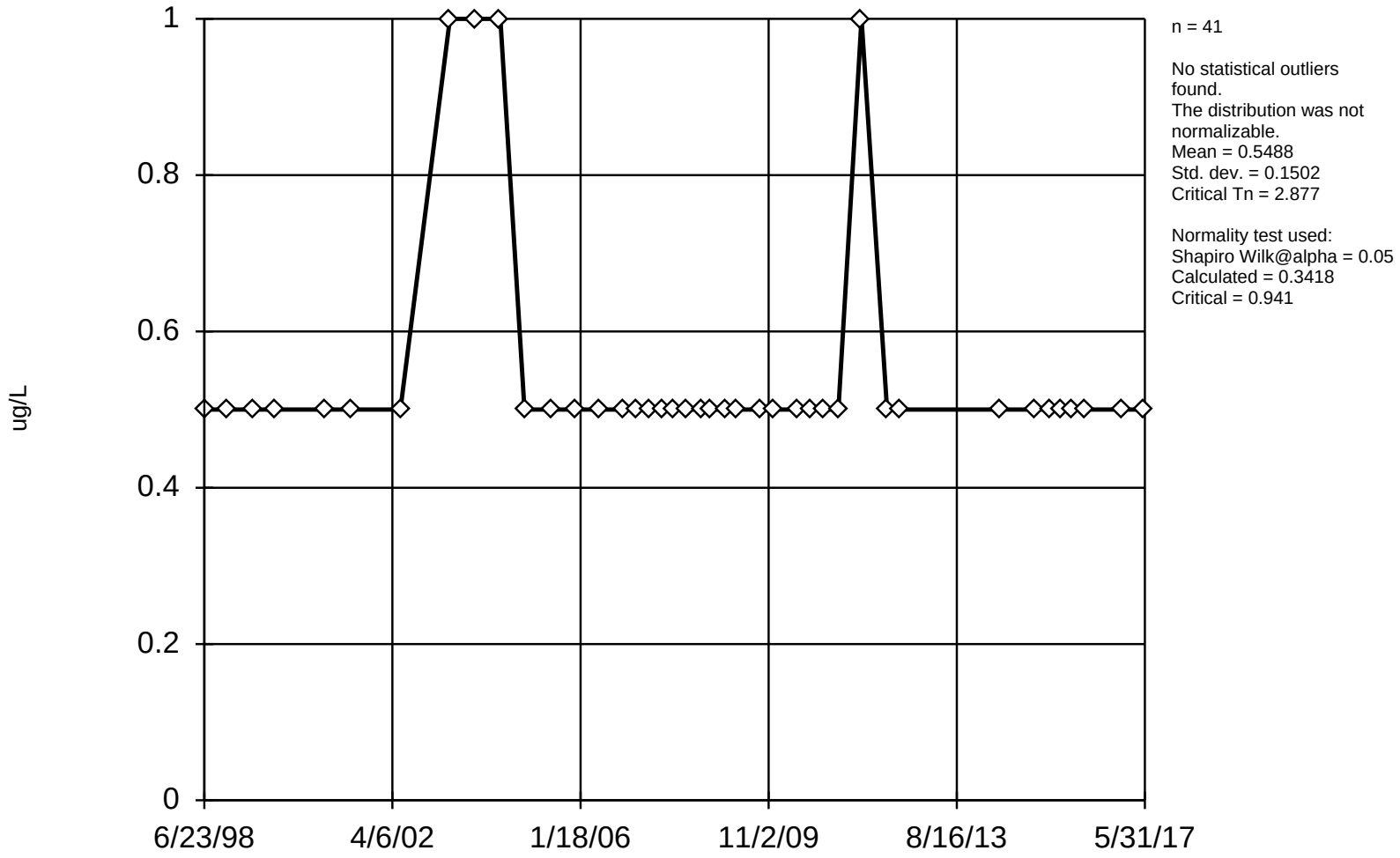
UTC Zanesville Well Field Site
Triplet: C-3D, C-10D, B-23I/D



Appendix H OUTLIER ANALYSIS

EPA 1989 Outlier Test

B-2D



n = 41

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5488
Std. dev. = 0.1502
Critical Tn = 2.877

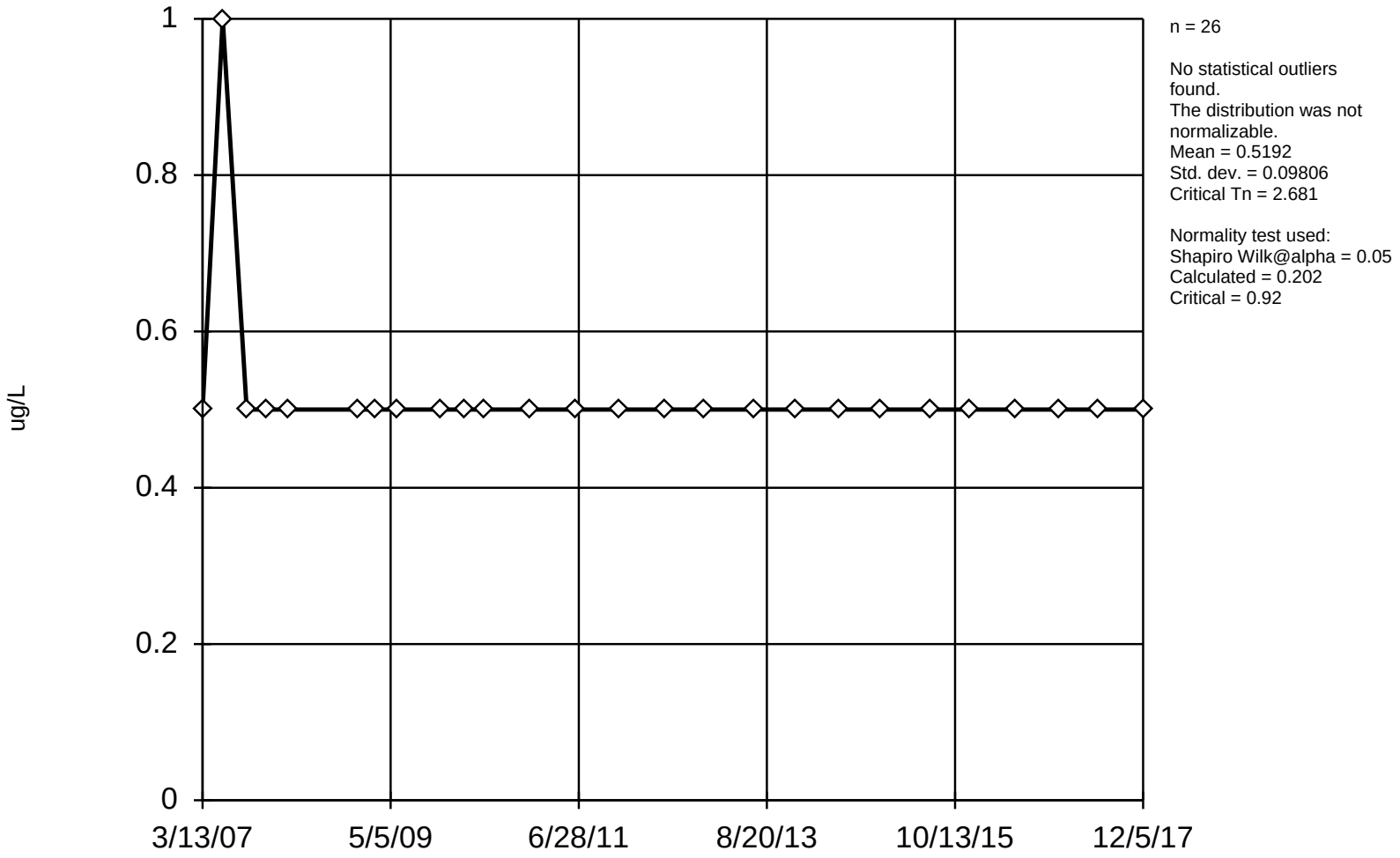
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.3418
Critical = 0.941

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:29 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-2I



n = 26

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5192
Std. dev. = 0.09806
Critical Tn = 2.681

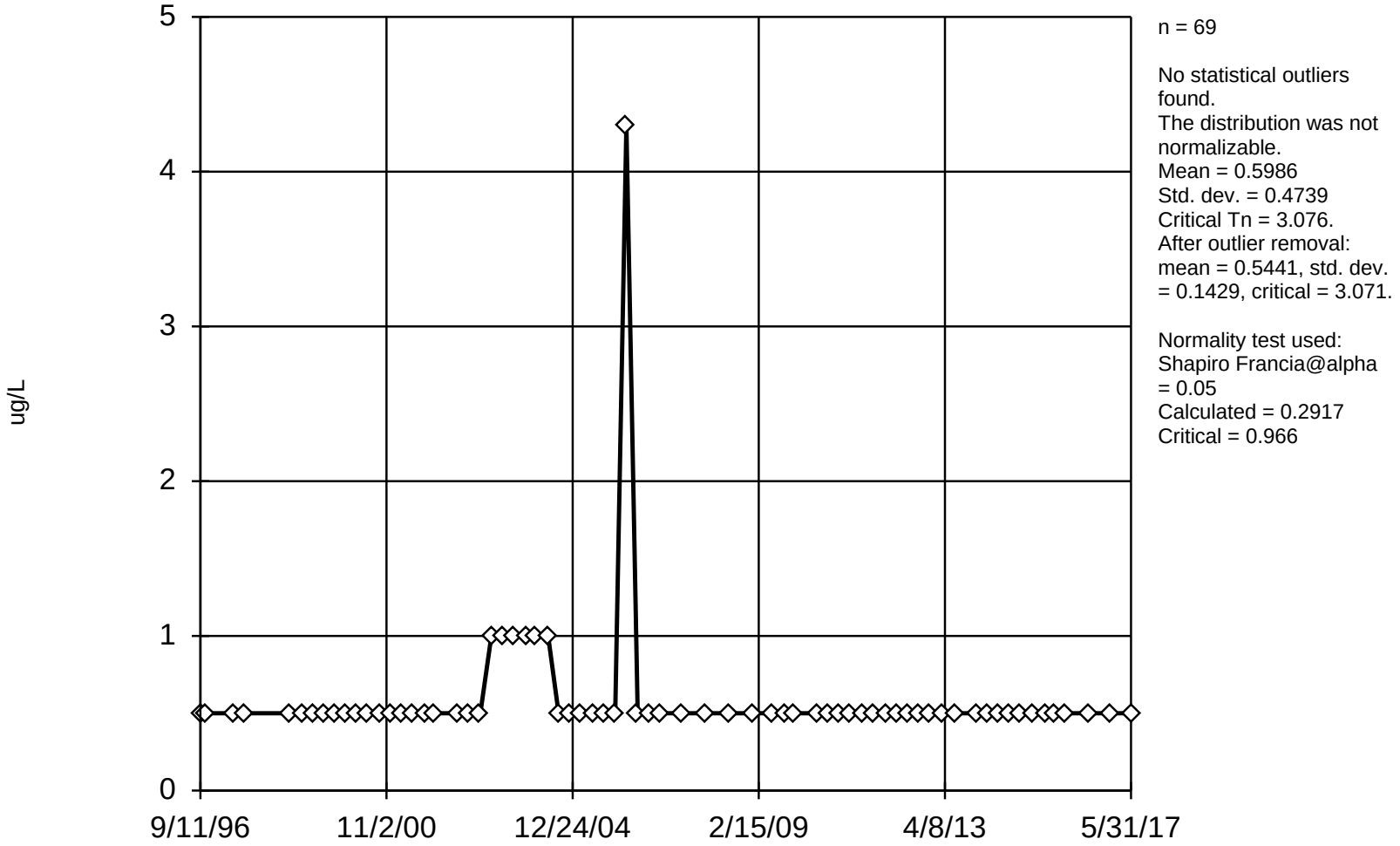
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.202
Critical = 0.92

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:29 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-2S



n = 69

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5986
Std. dev. = 0.4739
Critical Tn = 3.076.
After outlier removal: mean = 0.5441, std. dev. = 0.1429, critical = 3.071.

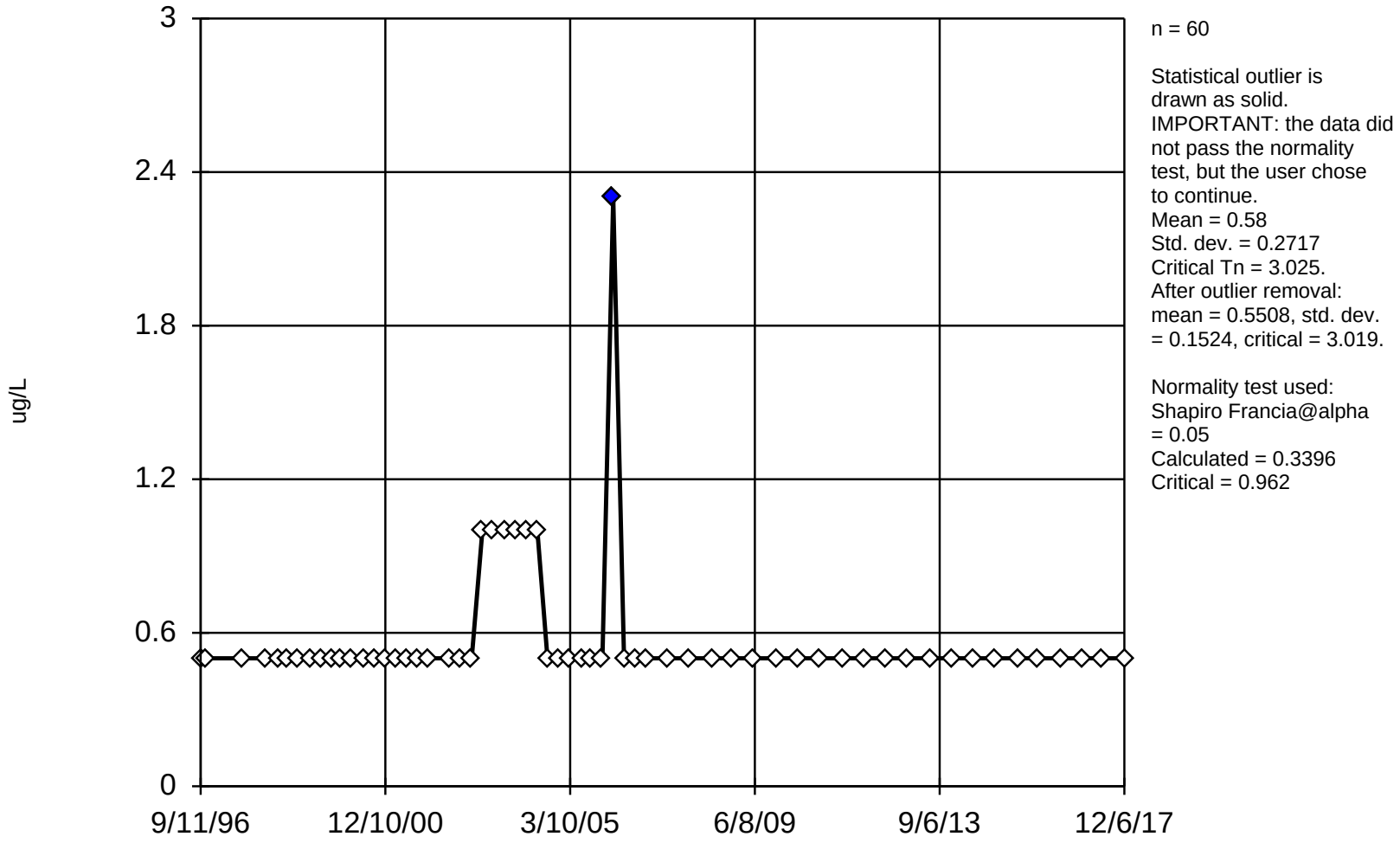
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.2917
Critical = 0.966

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:29 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-4D



n = 60

Statistical outlier is drawn as solid.
IMPORTANT: the data did not pass the normality test, but the user chose to continue.
Mean = 0.58
Std. dev. = 0.2717
Critical Tn = 3.025.
After outlier removal: mean = 0.5508, std. dev. = 0.1524, critical = 3.019.

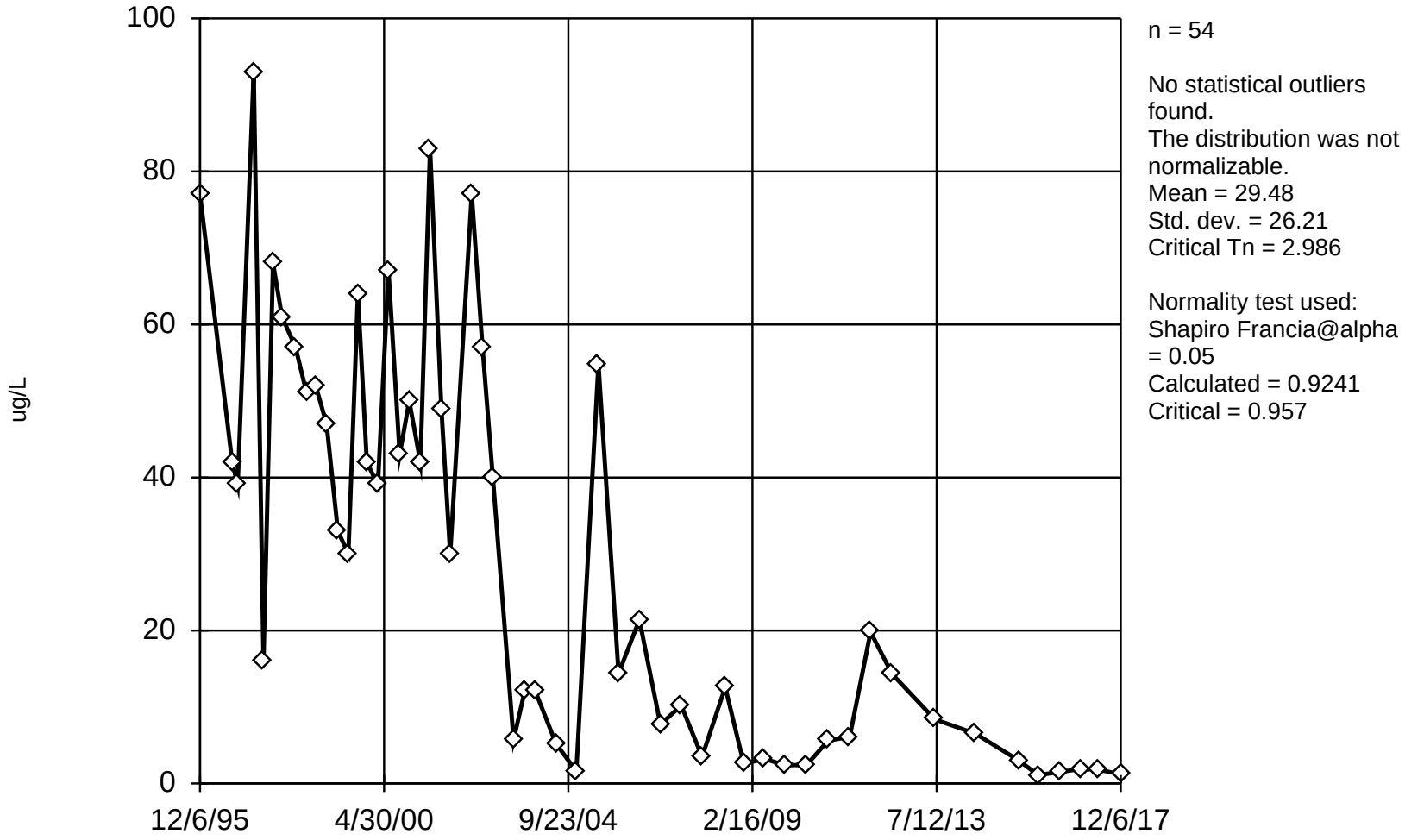
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.3396
Critical = 0.962

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:29 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-4I



n = 54

No statistical outliers found.
The distribution was not normalizable.
Mean = 29.48
Std. dev. = 26.21
Critical Tn = 2.986

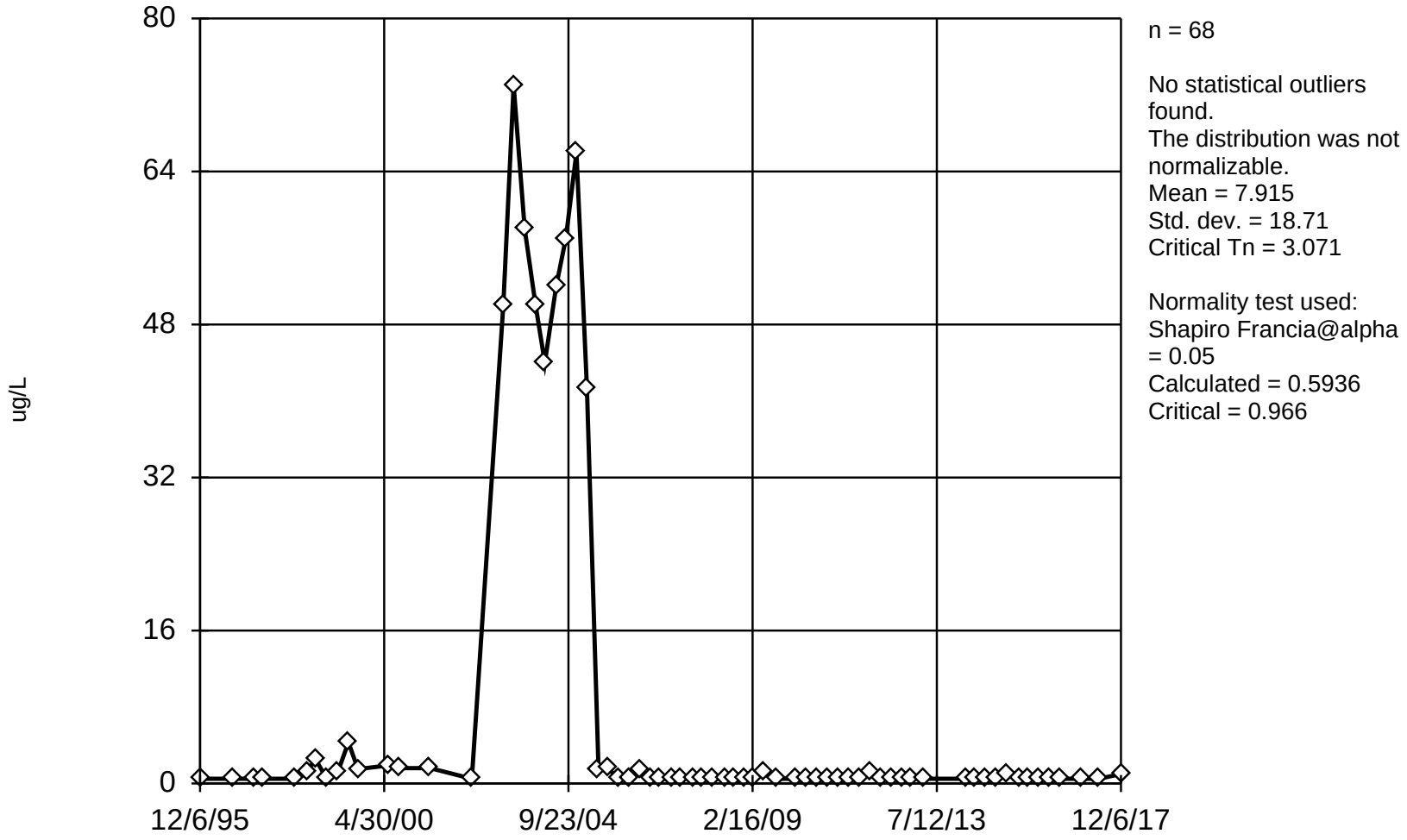
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9241
Critical = 0.957

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:29 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-4S



n = 68

No statistical outliers found.
The distribution was not normalizable.
Mean = 7.915
Std. dev. = 18.71
Critical Tn = 3.071

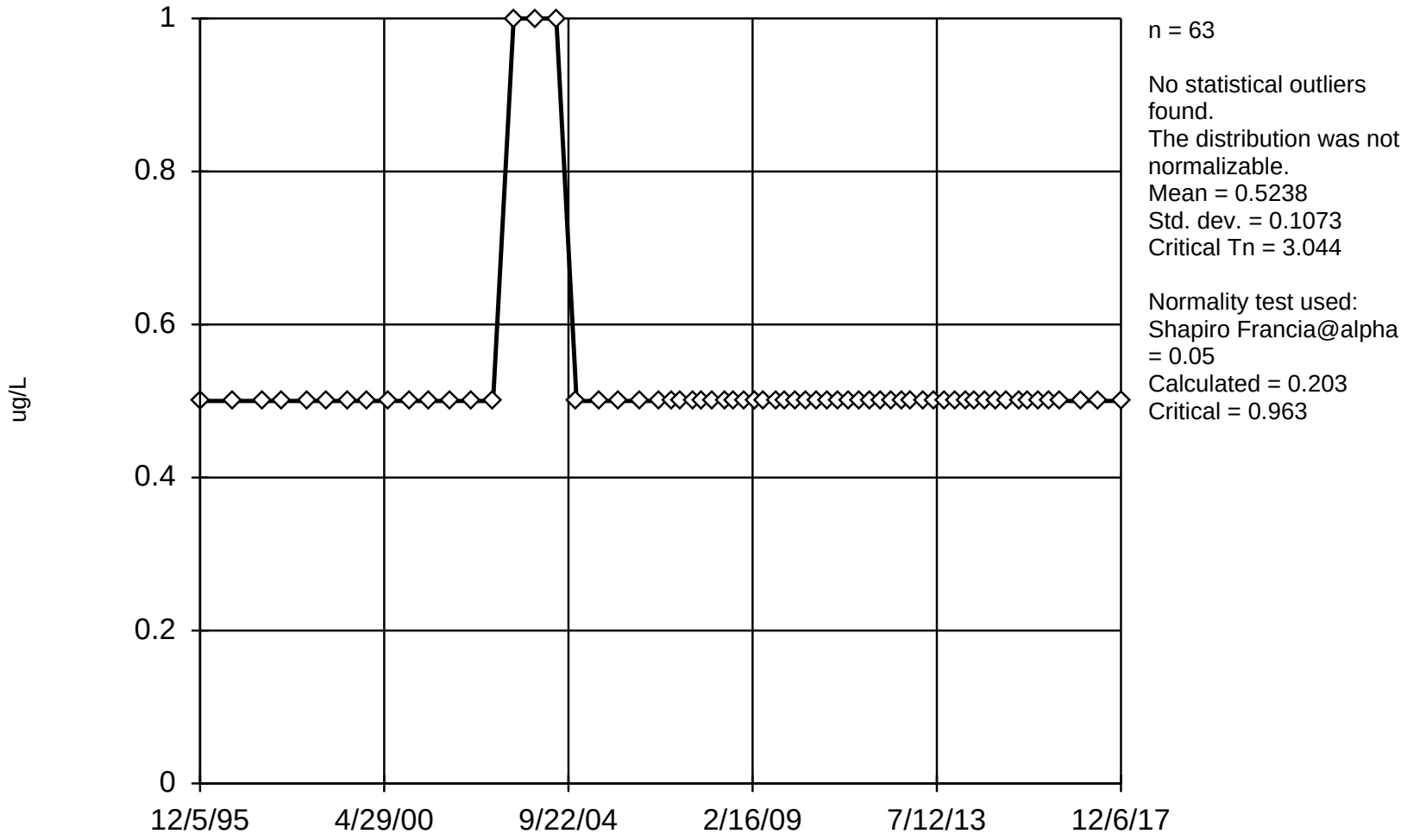
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.5936
Critical = 0.966

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:29 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-5D



n = 63

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5238
Std. dev. = 0.1073
Critical Tn = 3.044

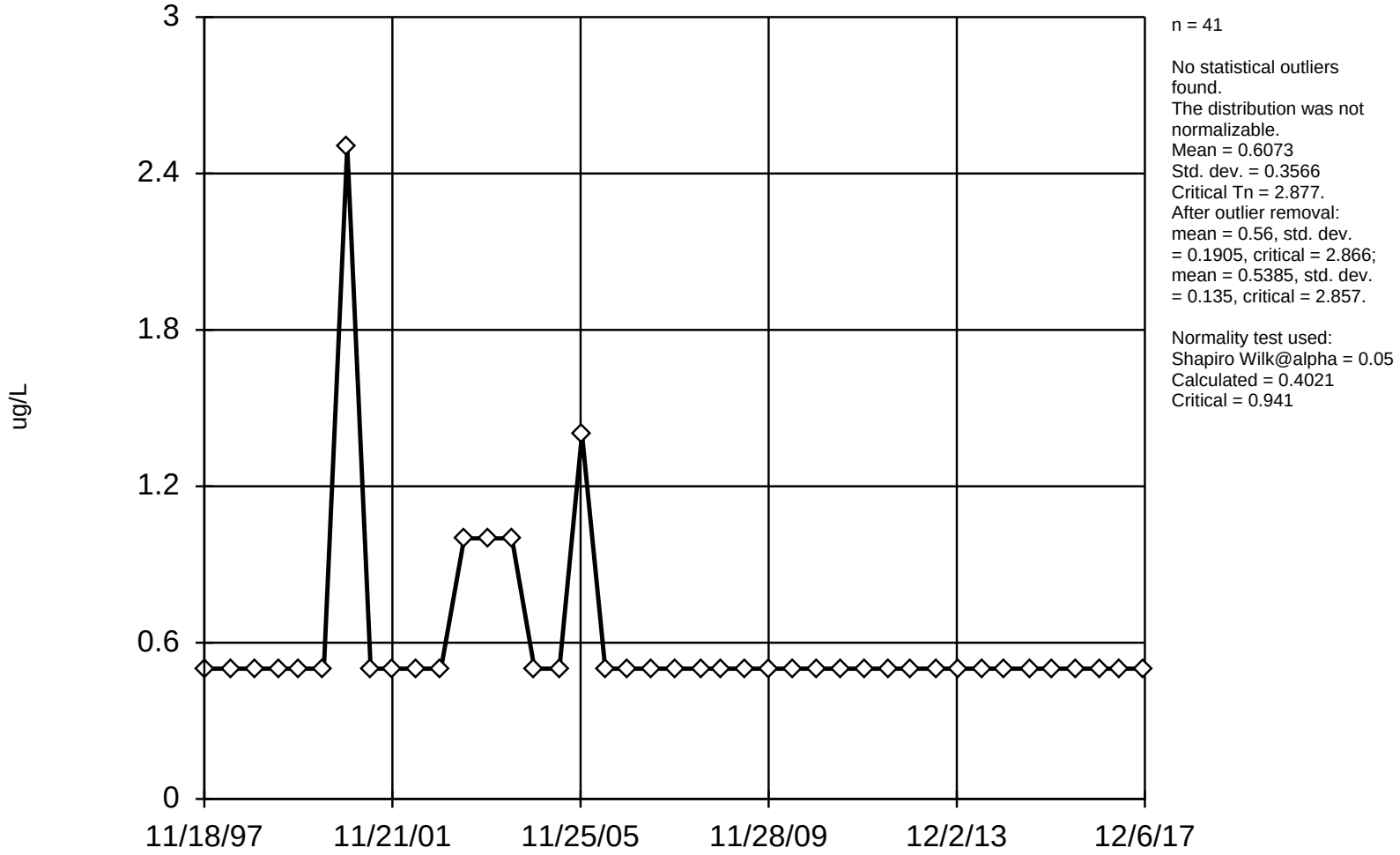
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.203
Critical = 0.963

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-5I



n = 41

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.6073
Std. dev. = 0.3566
Critical Tn = 2.877.
After outlier removal:
mean = 0.56, std. dev. = 0.1905, critical = 2.866;
mean = 0.5385, std. dev. = 0.135, critical = 2.857.

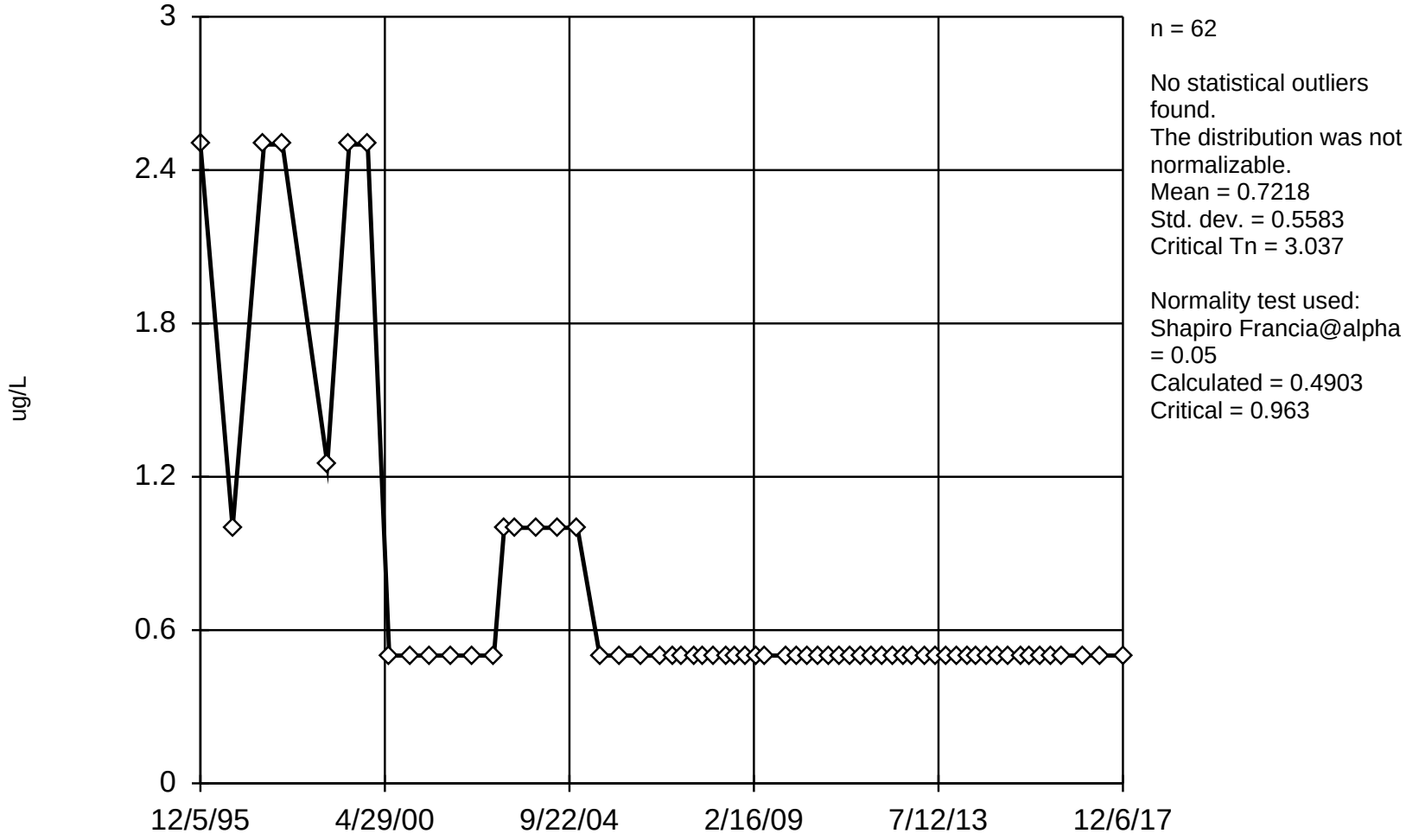
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.4021
Critical = 0.941

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-6I



n = 62

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.7218
Std. dev. = 0.5583
Critical Tn = 3.037

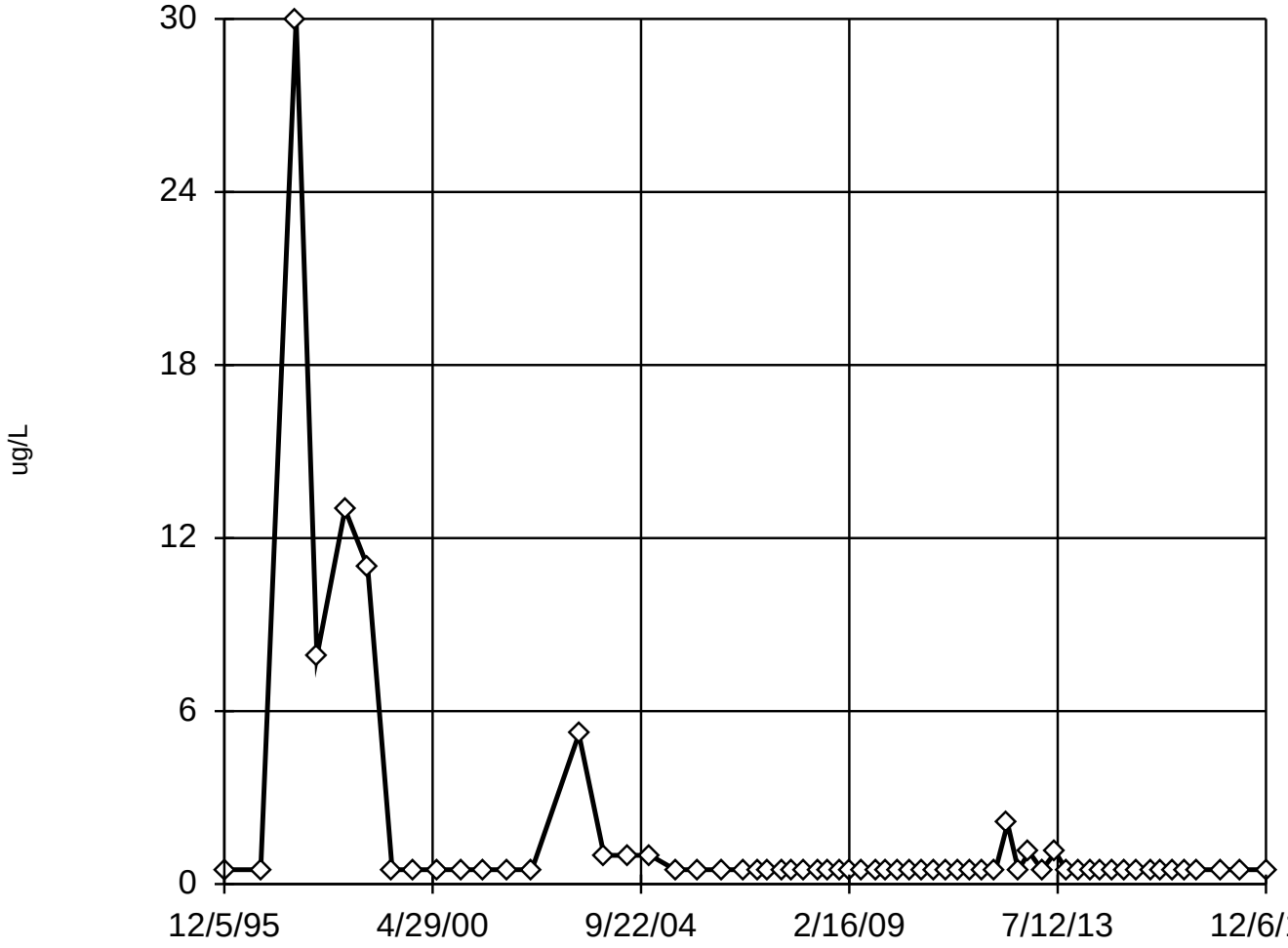
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.4903
Critical = 0.963

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-6S



n = 62

No statistical outliers found.
The distribution was not normalizable.
Mean = 1.611
Std. dev. = 4.325
Critical Tn = 3.037.
After outlier removal: mean = 1.146, std. dev. = 2.316, critical = 3.032; mean = 0.9483, std. dev. = 1.742, critical = 3.025; mean = 0.778, std. dev. = 1.147, critical = 3.019; mean = 0.6552, std. dev. = 0.6586, critical = 3.013; mean = 0.5754, st...

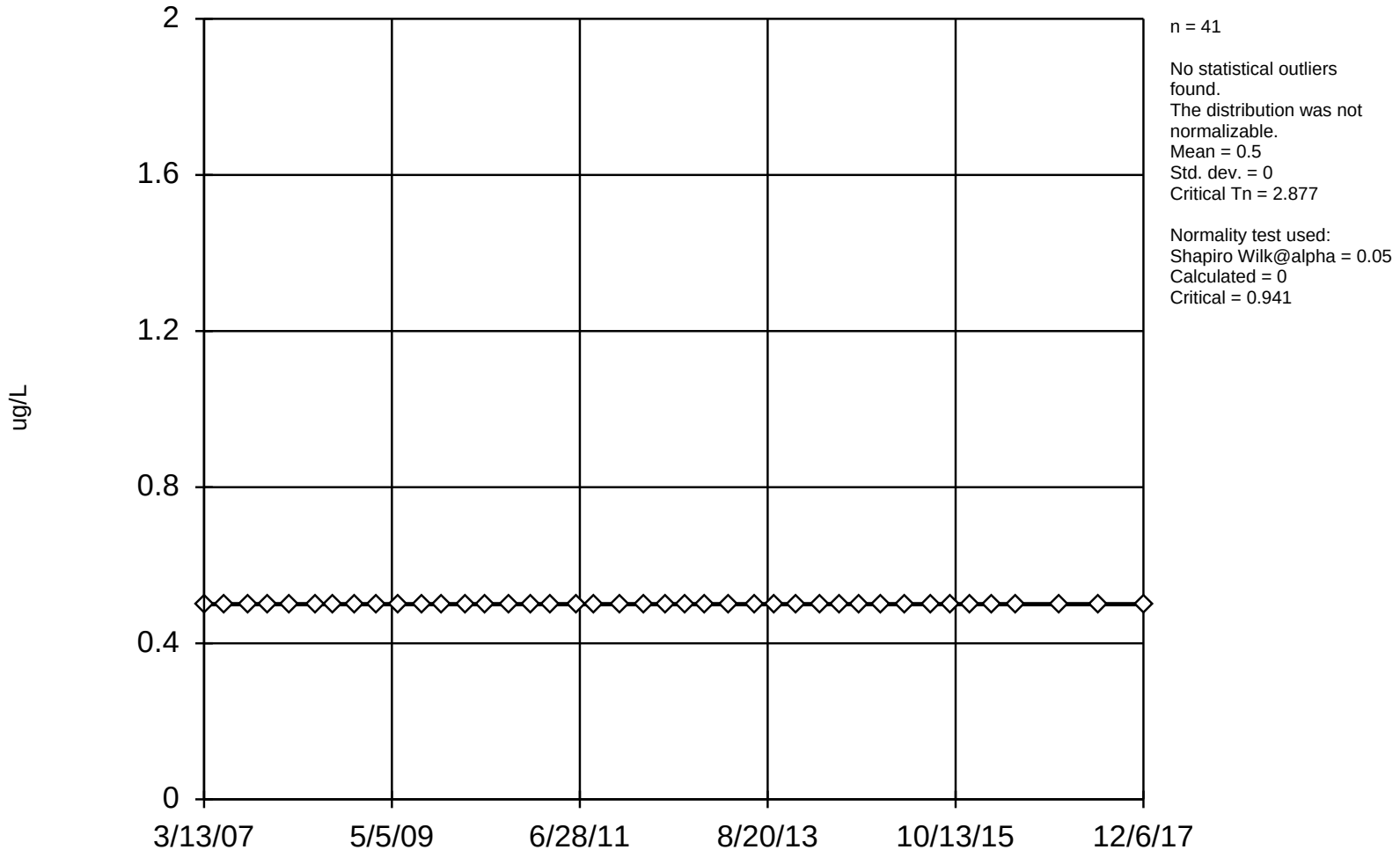
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.4214
Critical = 0.963

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-8D



n = 41

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.877

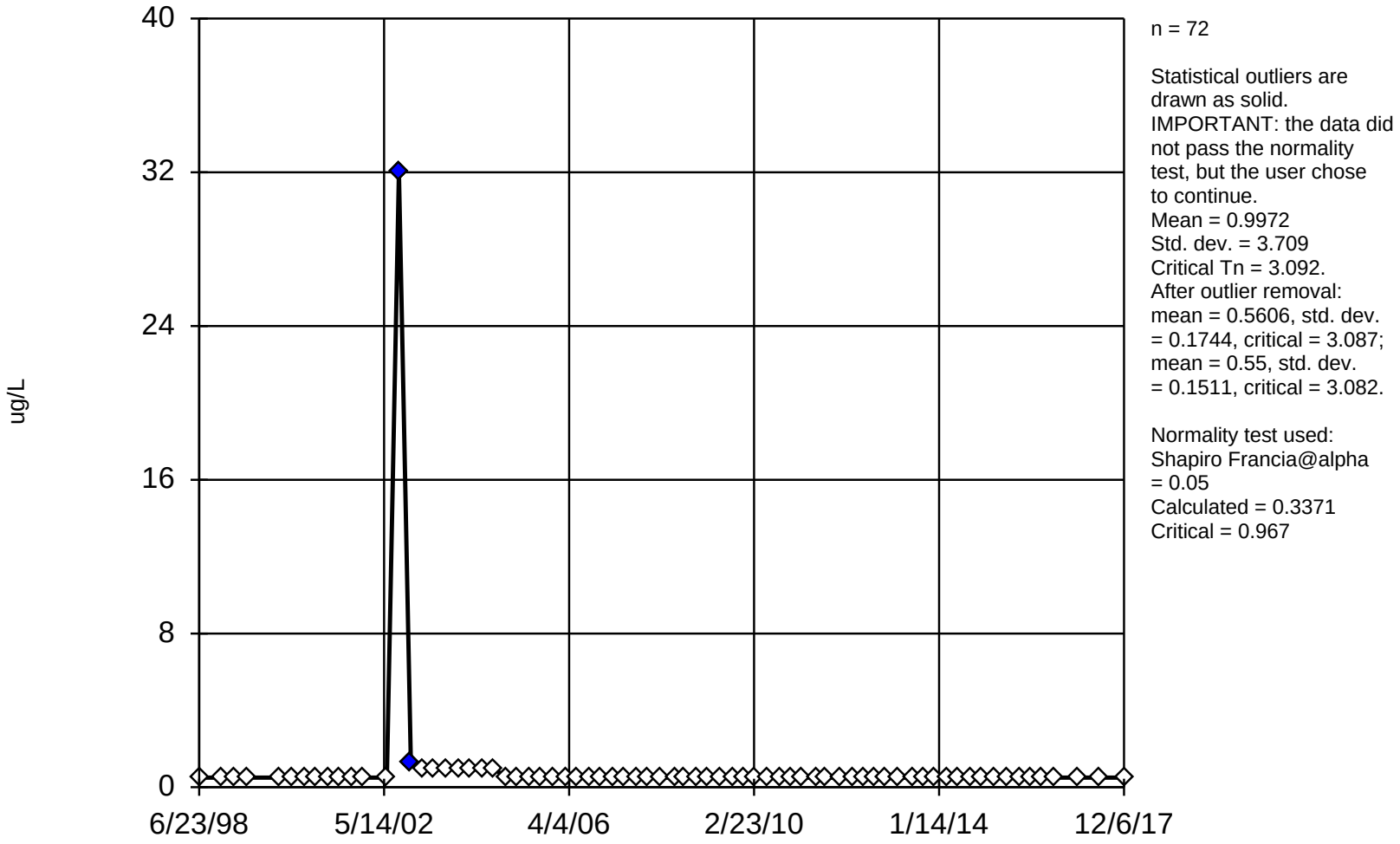
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.941

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-8I



n = 72

Statistical outliers are drawn as solid.
IMPORTANT: the data did not pass the normality test, but the user chose to continue.
Mean = 0.9972
Std. dev. = 3.709
Critical Tn = 3.092.
After outlier removal: mean = 0.5606, std. dev. = 0.1744, critical = 3.087; mean = 0.55, std. dev. = 0.1511, critical = 3.082.

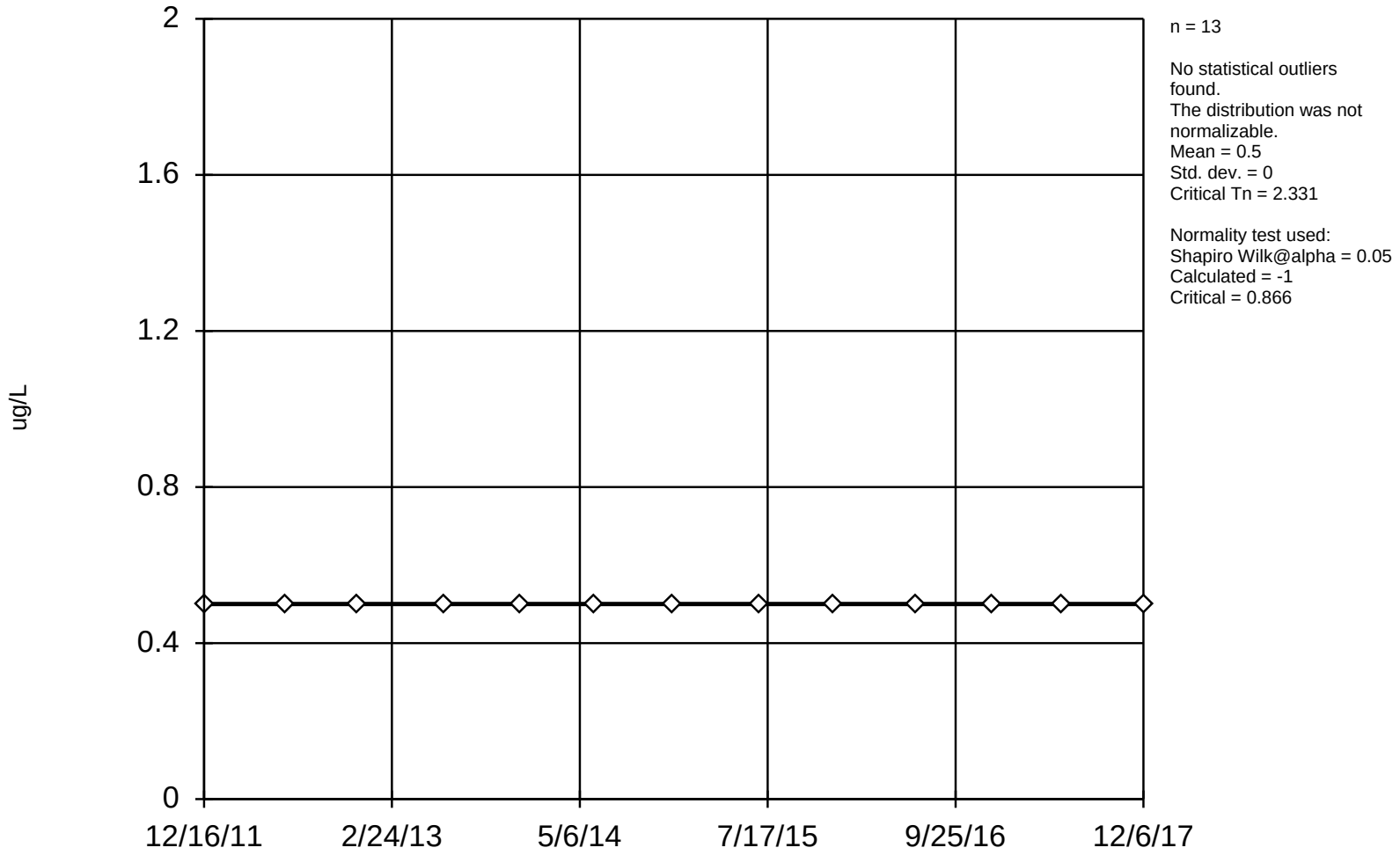
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.3371
Critical = 0.967

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-8S



n = 13

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.331

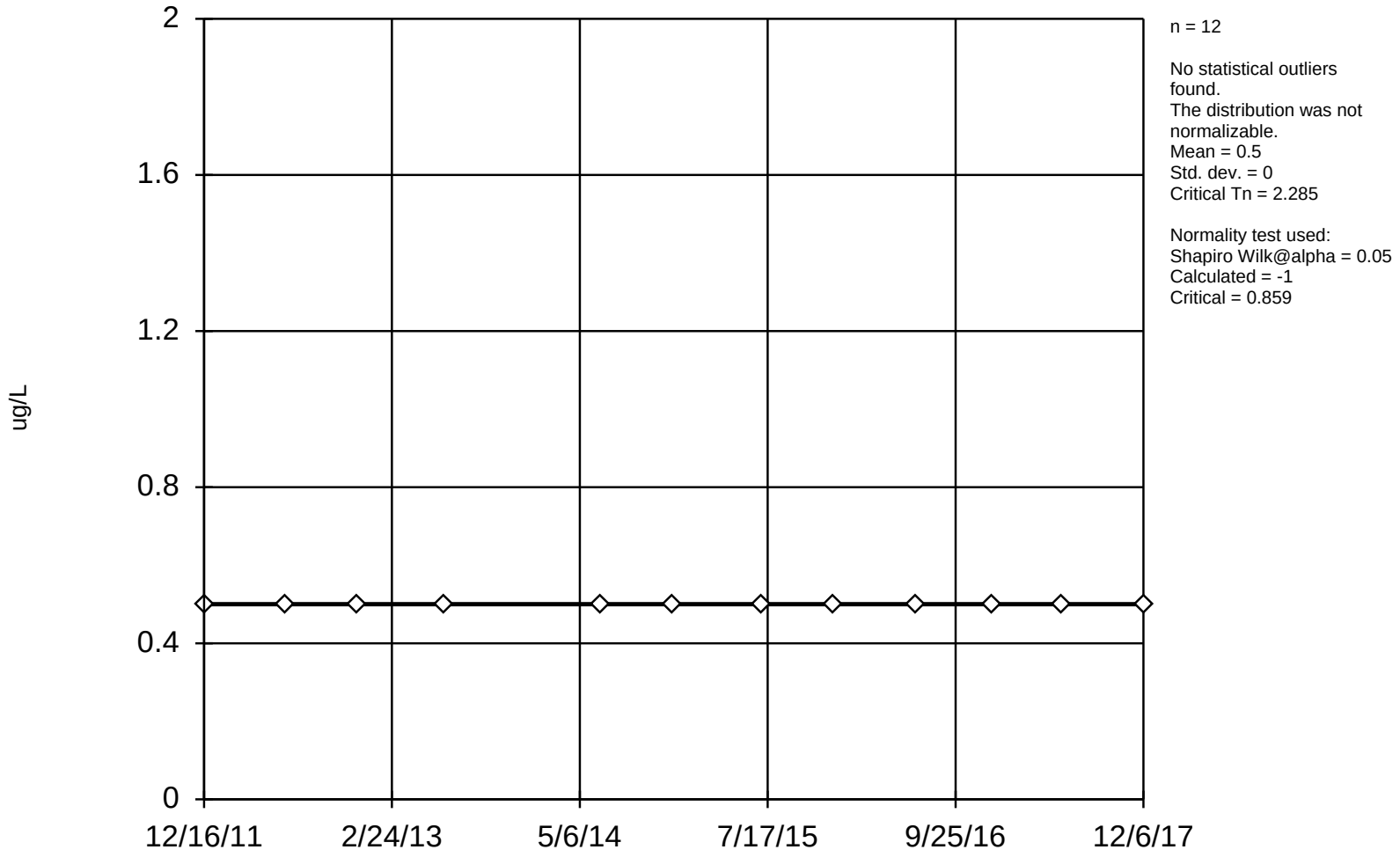
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = -1
Critical = 0.866

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-9S



n = 12

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.285

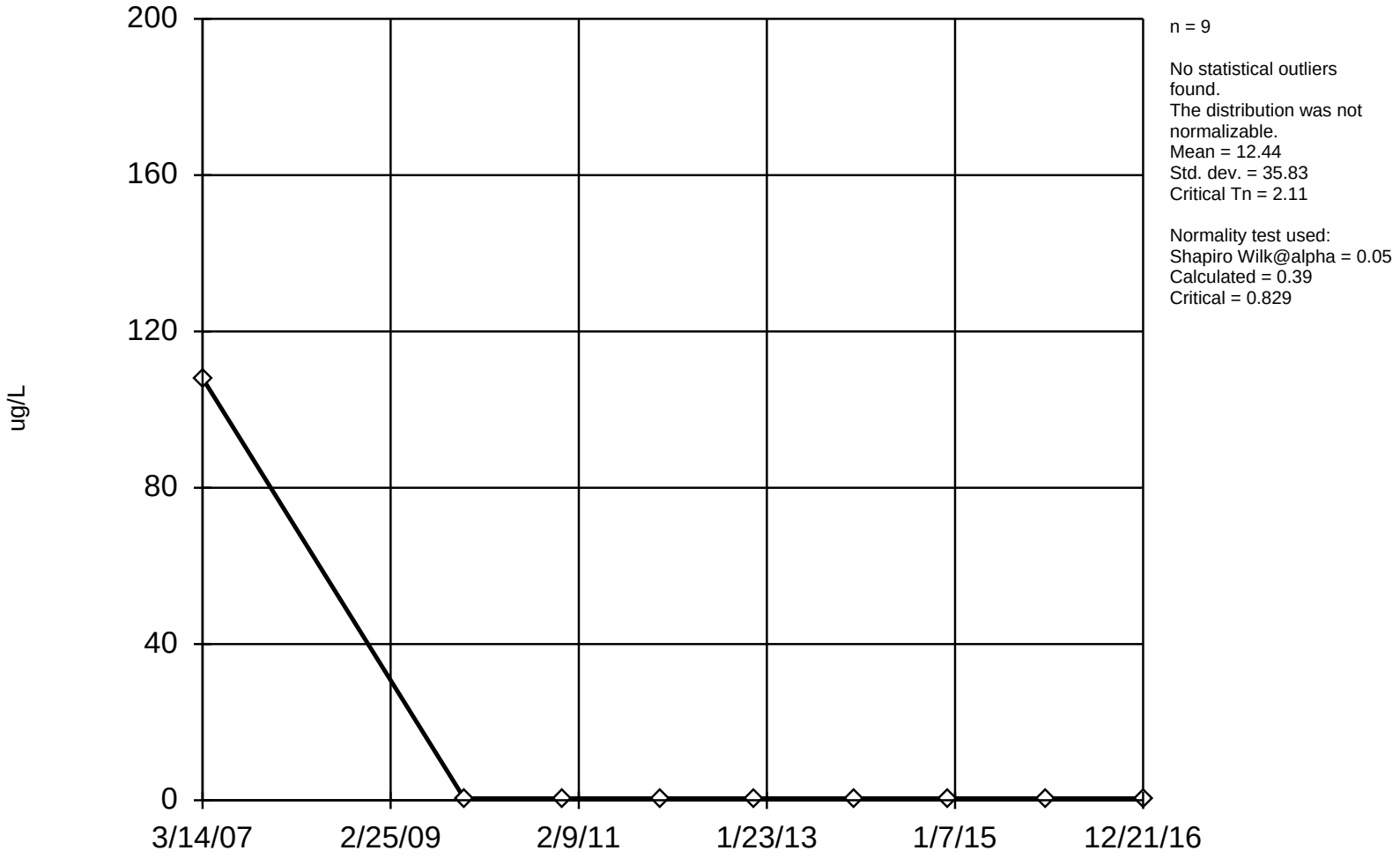
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = -1
Critical = 0.859

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-10S



n = 9

No statistical outliers found.
The distribution was not normalizable.
Mean = 12.44
Std. dev. = 35.83
Critical Tn = 2.11

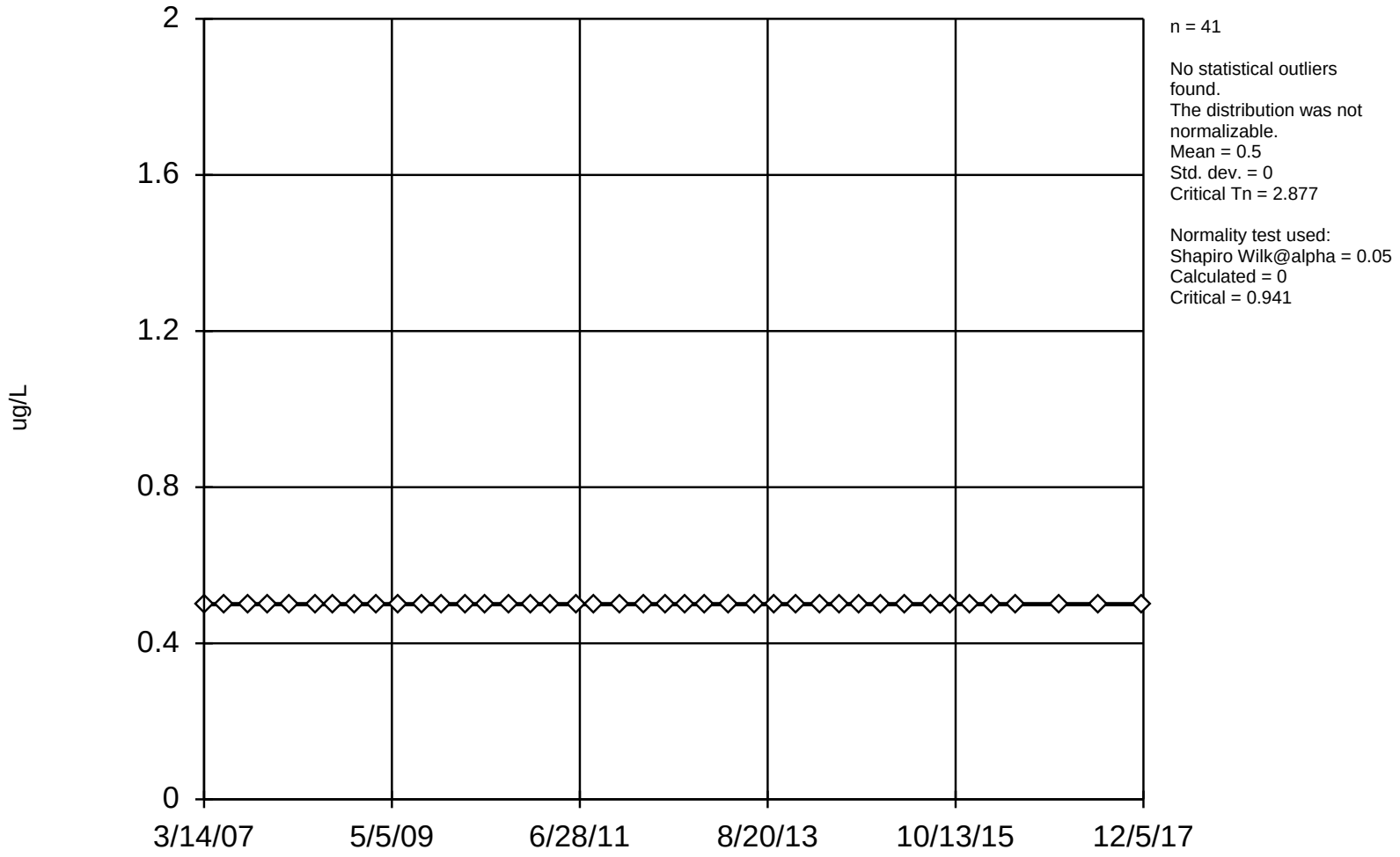
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.39
Critical = 0.829

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-13D



n = 41

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.877

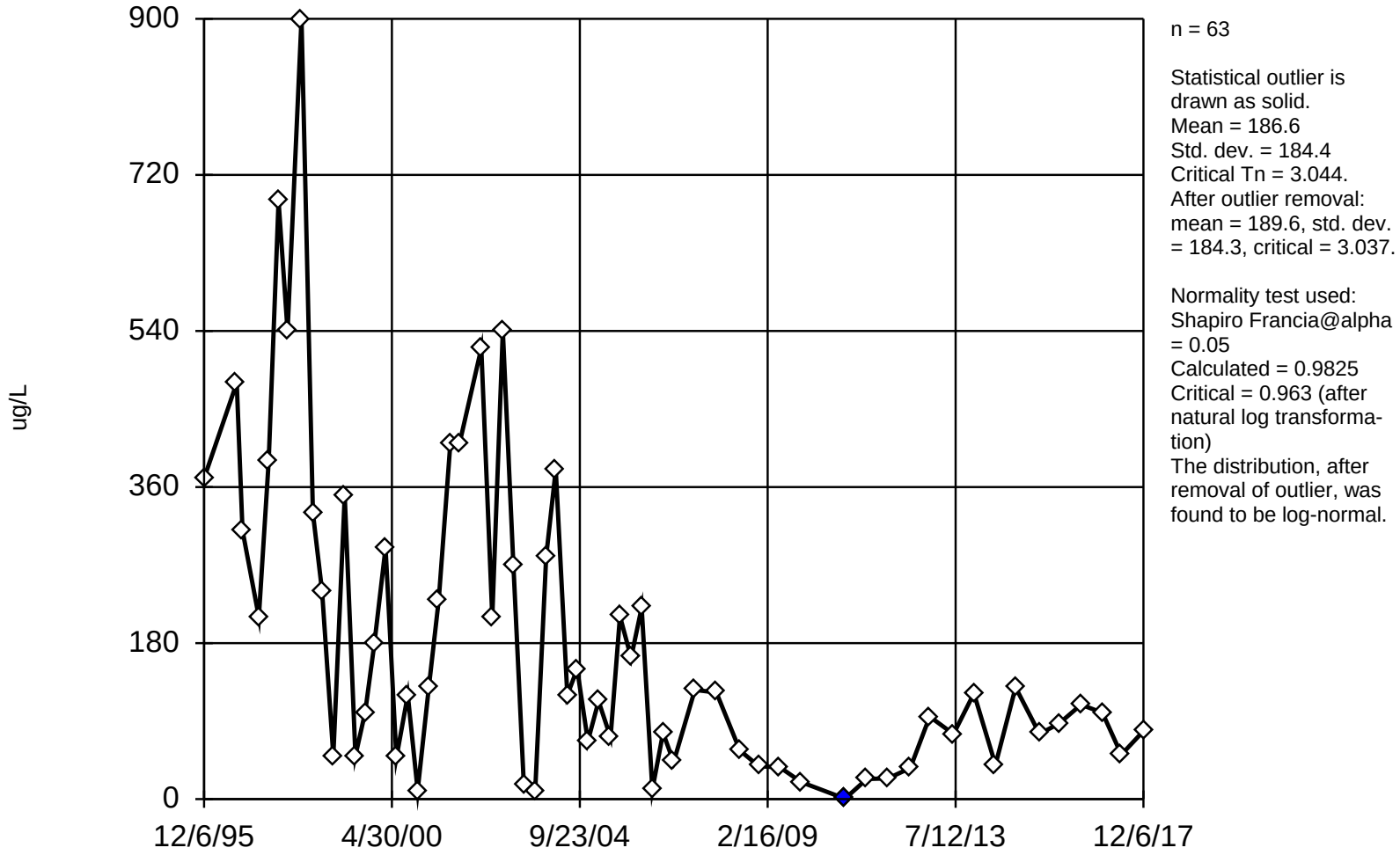
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.941

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-16



n = 63

Statistical outlier is drawn as solid.
Mean = 186.6
Std. dev. = 184.4
Critical Tn = 3.044.
After outlier removal: mean = 189.6, std. dev. = 184.3, critical = 3.037.

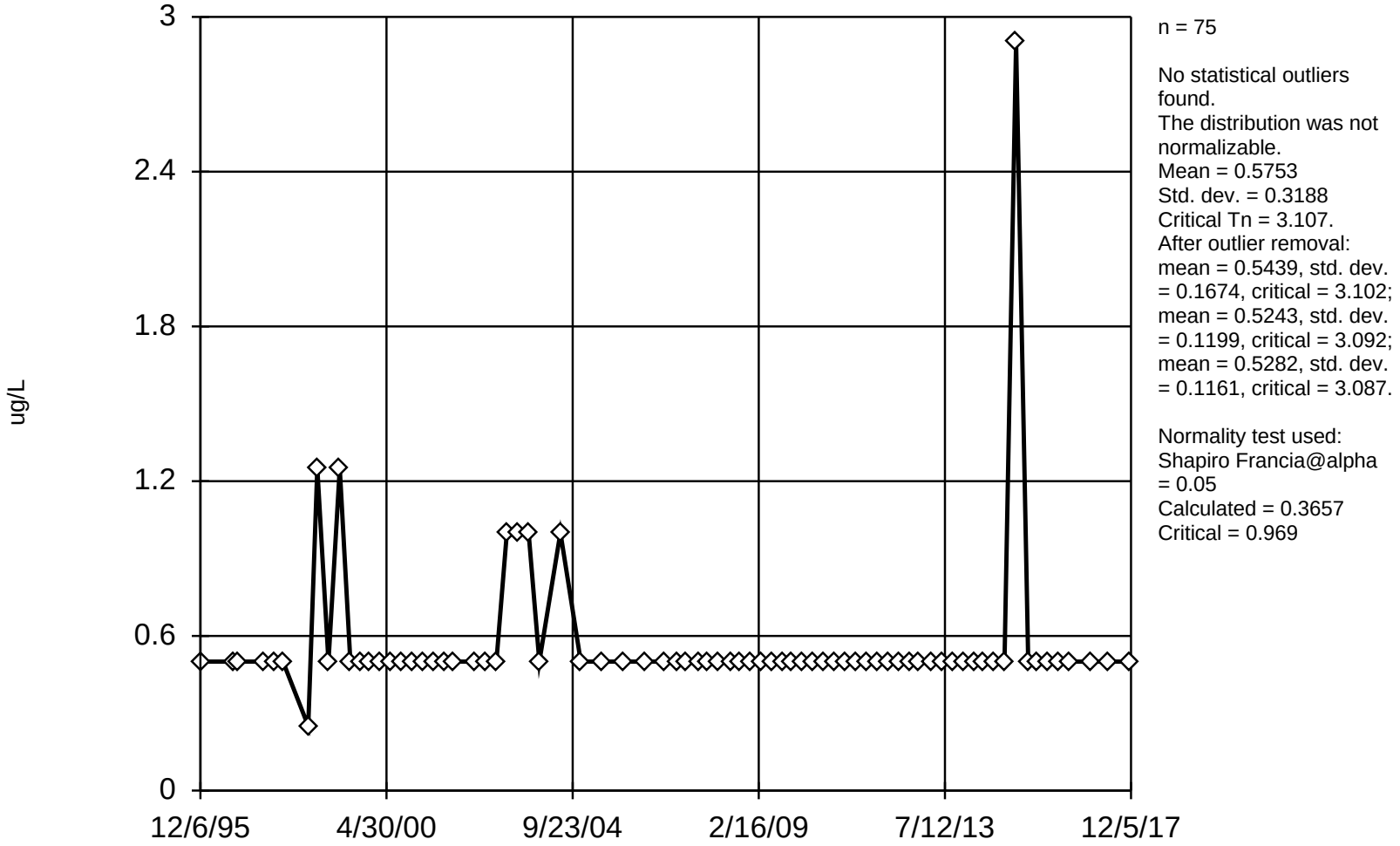
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9825
Critical = 0.963 (after natural log transformation)
The distribution, after removal of outlier, was found to be log-normal.

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-18



n = 75

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5753
Std. dev. = 0.3188
Critical Tn = 3.107.
After outlier removal:
mean = 0.5439, std. dev. = 0.1674, critical = 3.102;
mean = 0.5243, std. dev. = 0.1199, critical = 3.092;
mean = 0.5282, std. dev. = 0.1161, critical = 3.087.

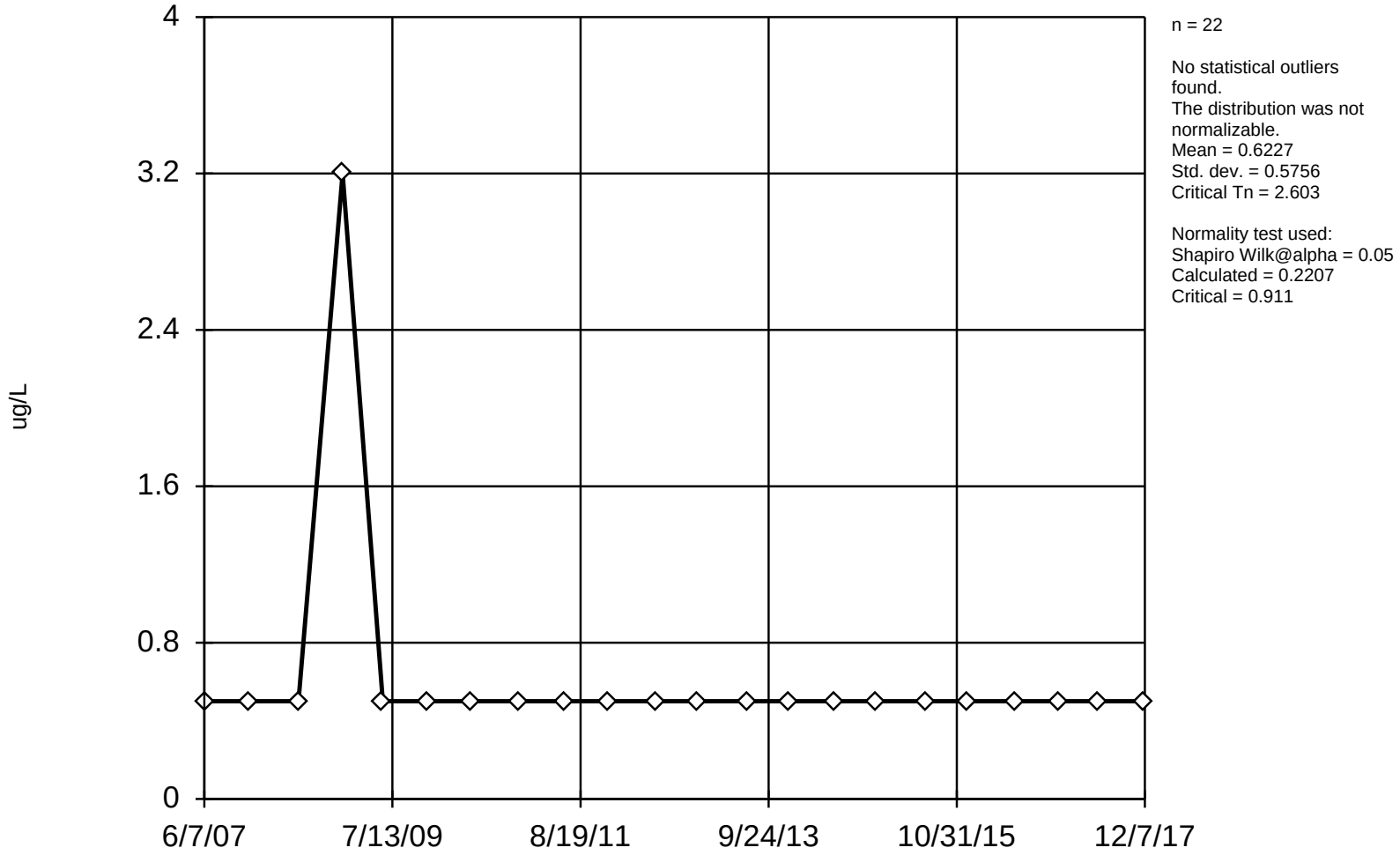
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.3657
Critical = 0.969

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-23I/D



n = 22

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.6227
Std. dev. = 0.5756
Critical Tn = 2.603

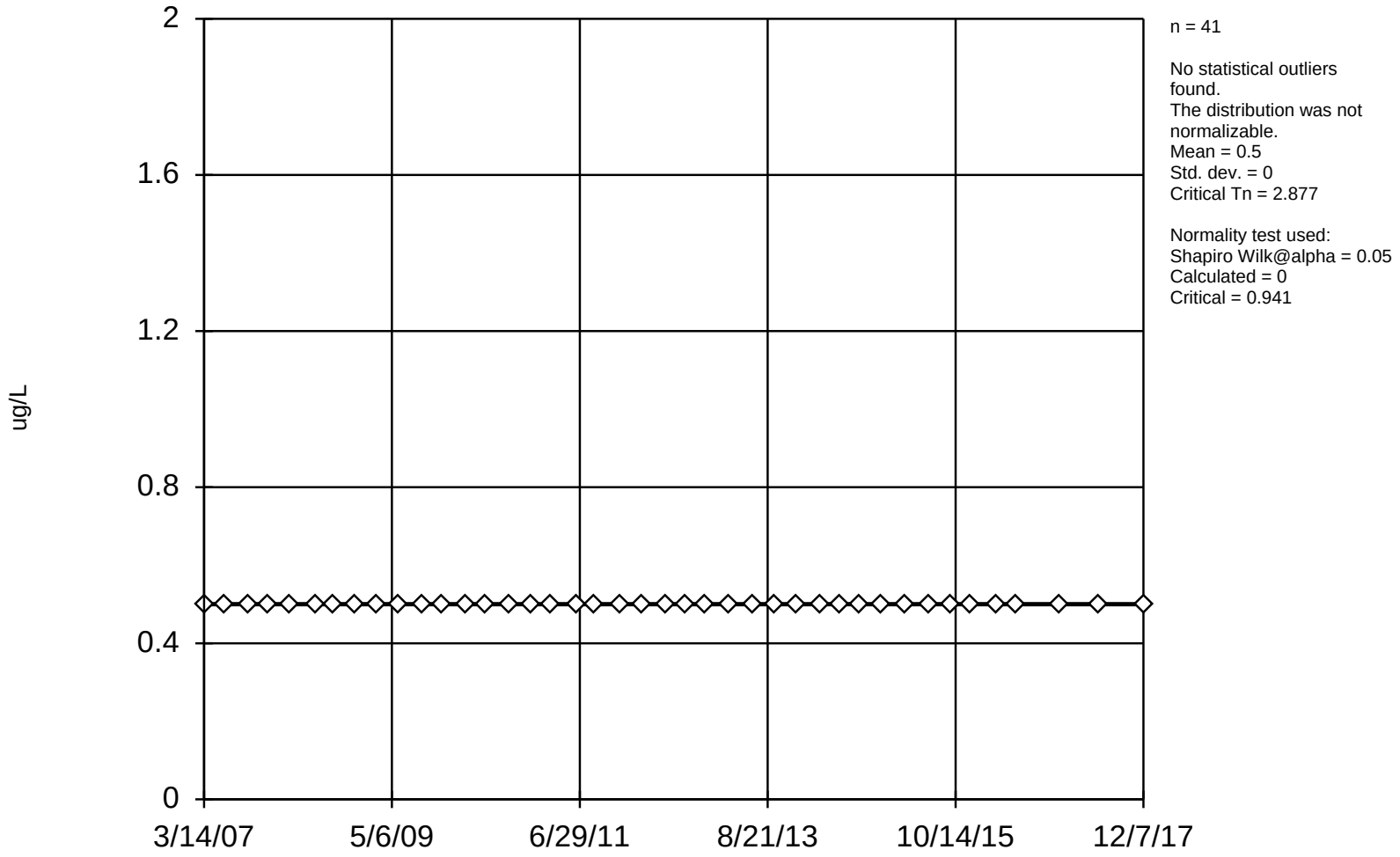
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.2207
Critical = 0.911

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-1D



n = 41

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.877

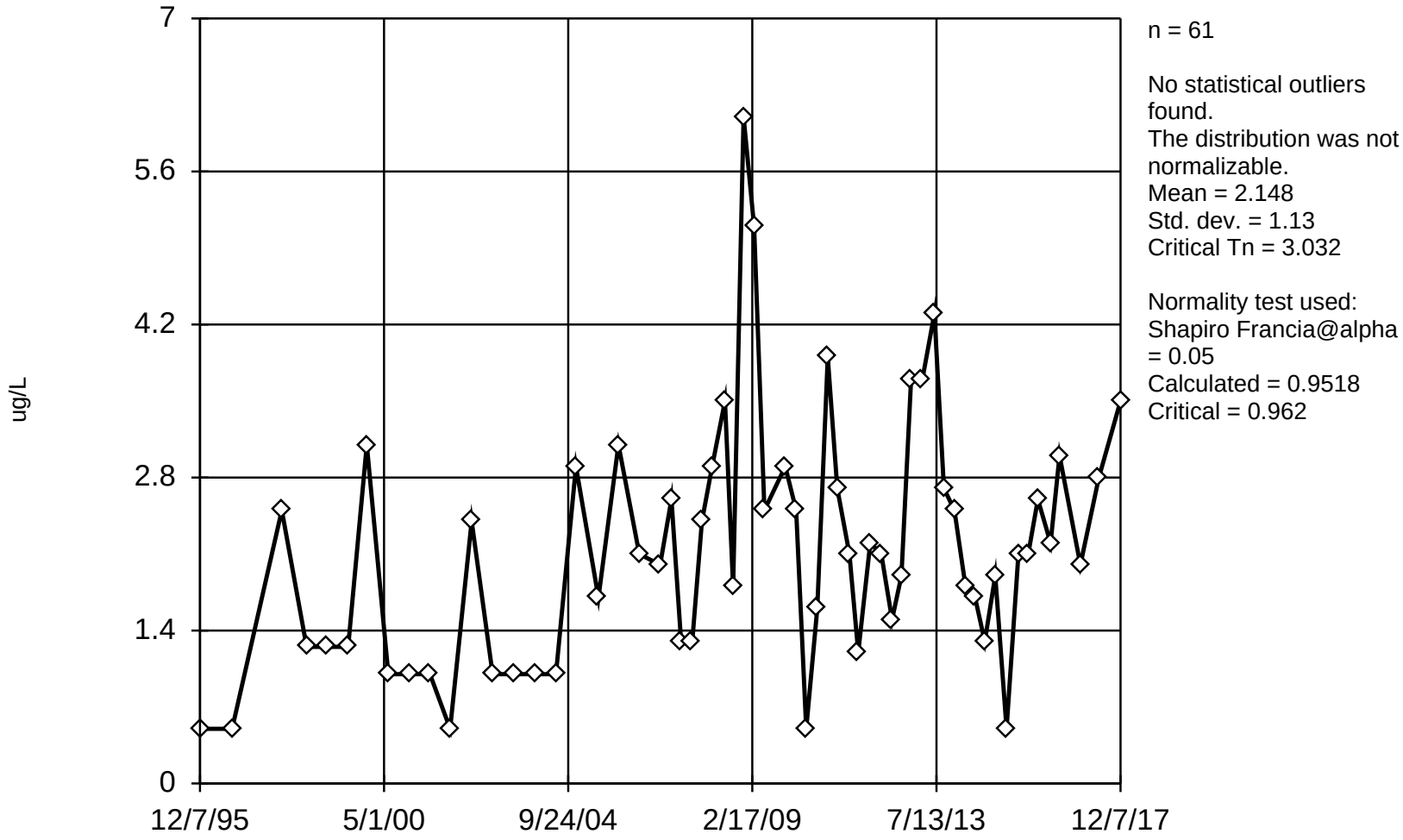
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.941

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-1I



n = 61

No statistical outliers found.
The distribution was not normalizable.
Mean = 2.148
Std. dev. = 1.13
Critical Tn = 3.032

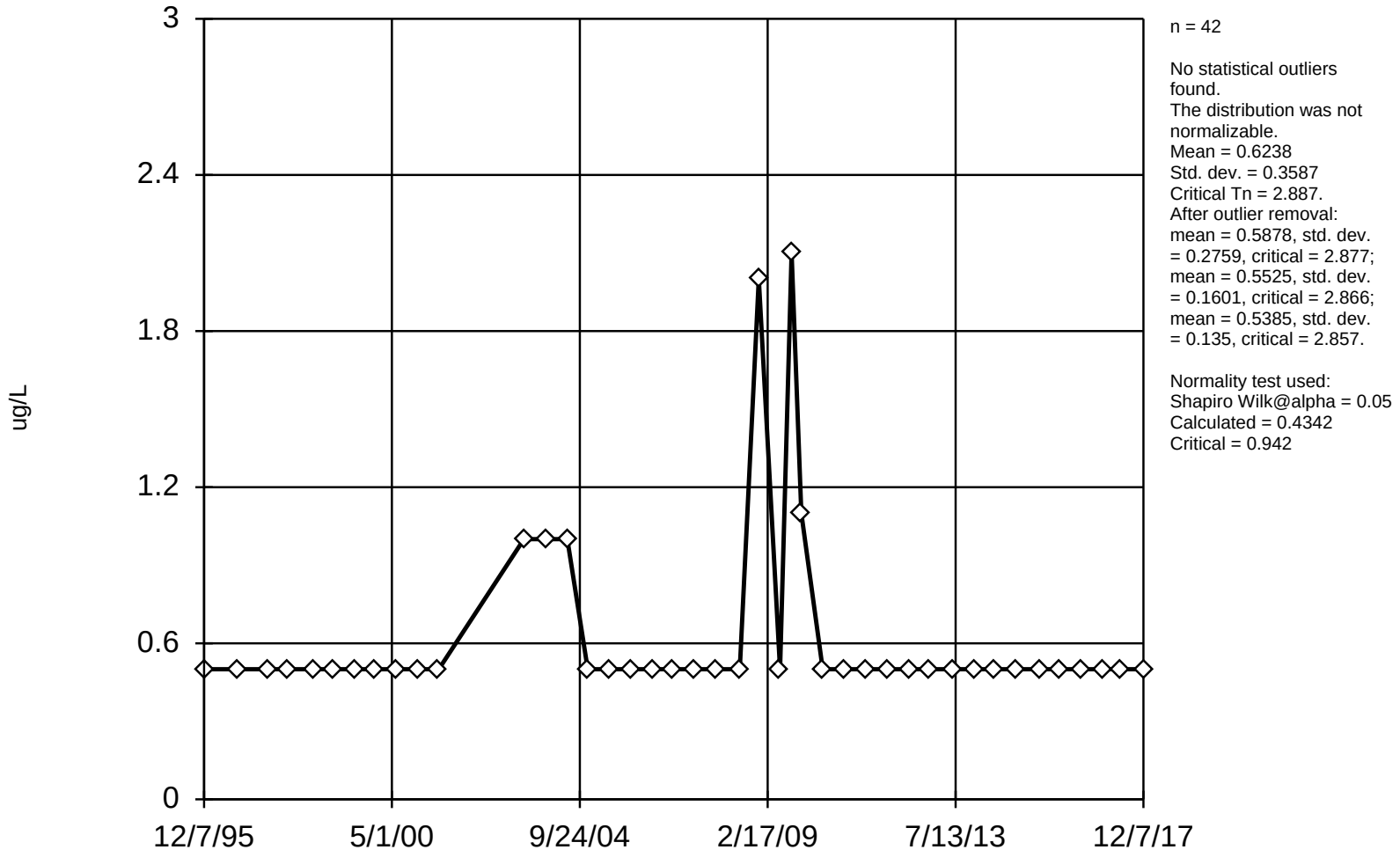
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9518
Critical = 0.962

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-1S



n = 42

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.6238
Std. dev. = 0.3587
Critical Tn = 2.887.
After outlier removal:
mean = 0.5878, std. dev. = 0.2759, critical = 2.877;
mean = 0.5525, std. dev. = 0.1601, critical = 2.866;
mean = 0.5385, std. dev. = 0.135, critical = 2.857.

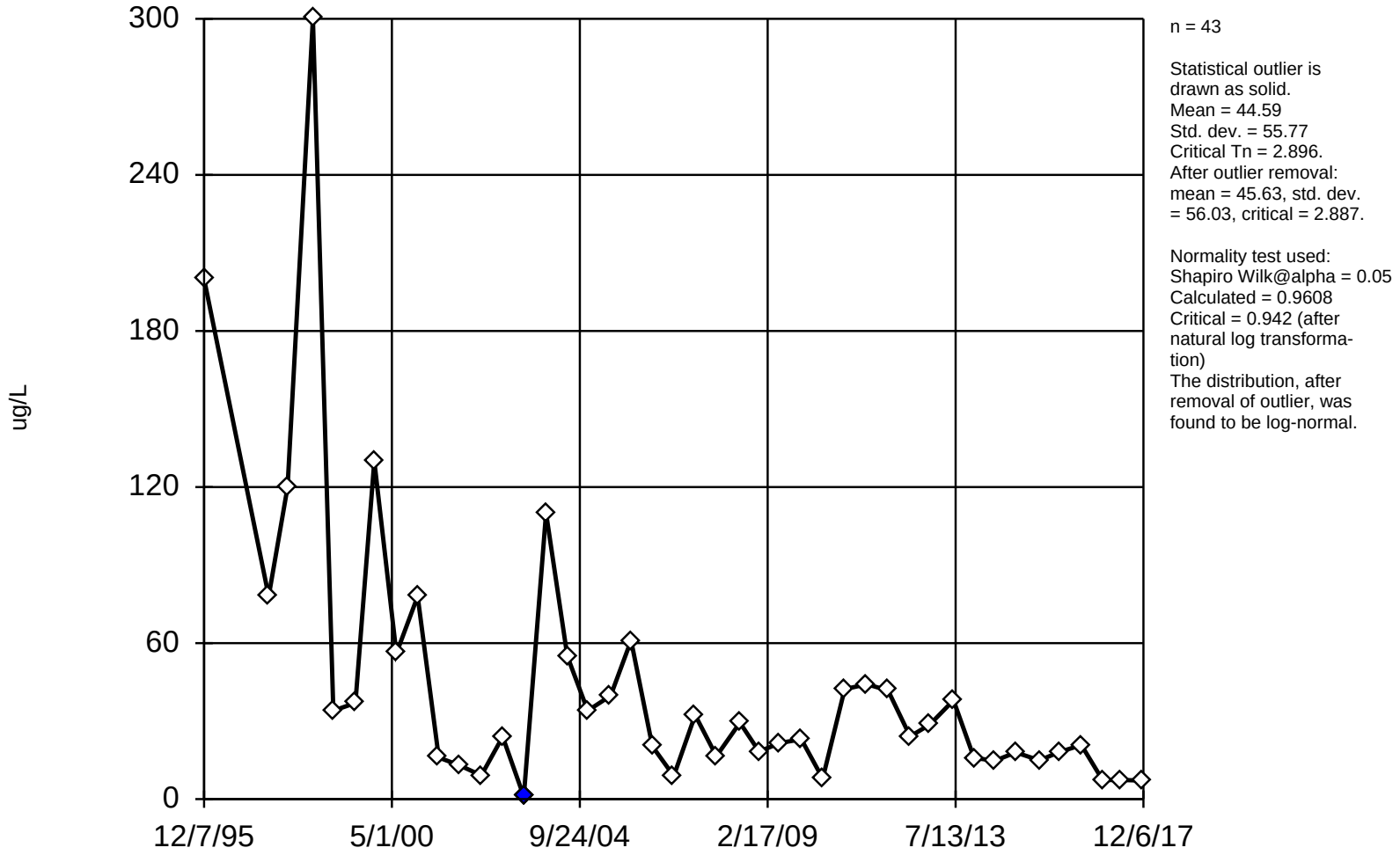
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.4342
Critical = 0.942

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-2D



n = 43

Statistical outlier is drawn as solid.
Mean = 44.59
Std. dev. = 55.77
Critical Tn = 2.896.
After outlier removal: mean = 45.63, std. dev. = 56.03, critical = 2.887.

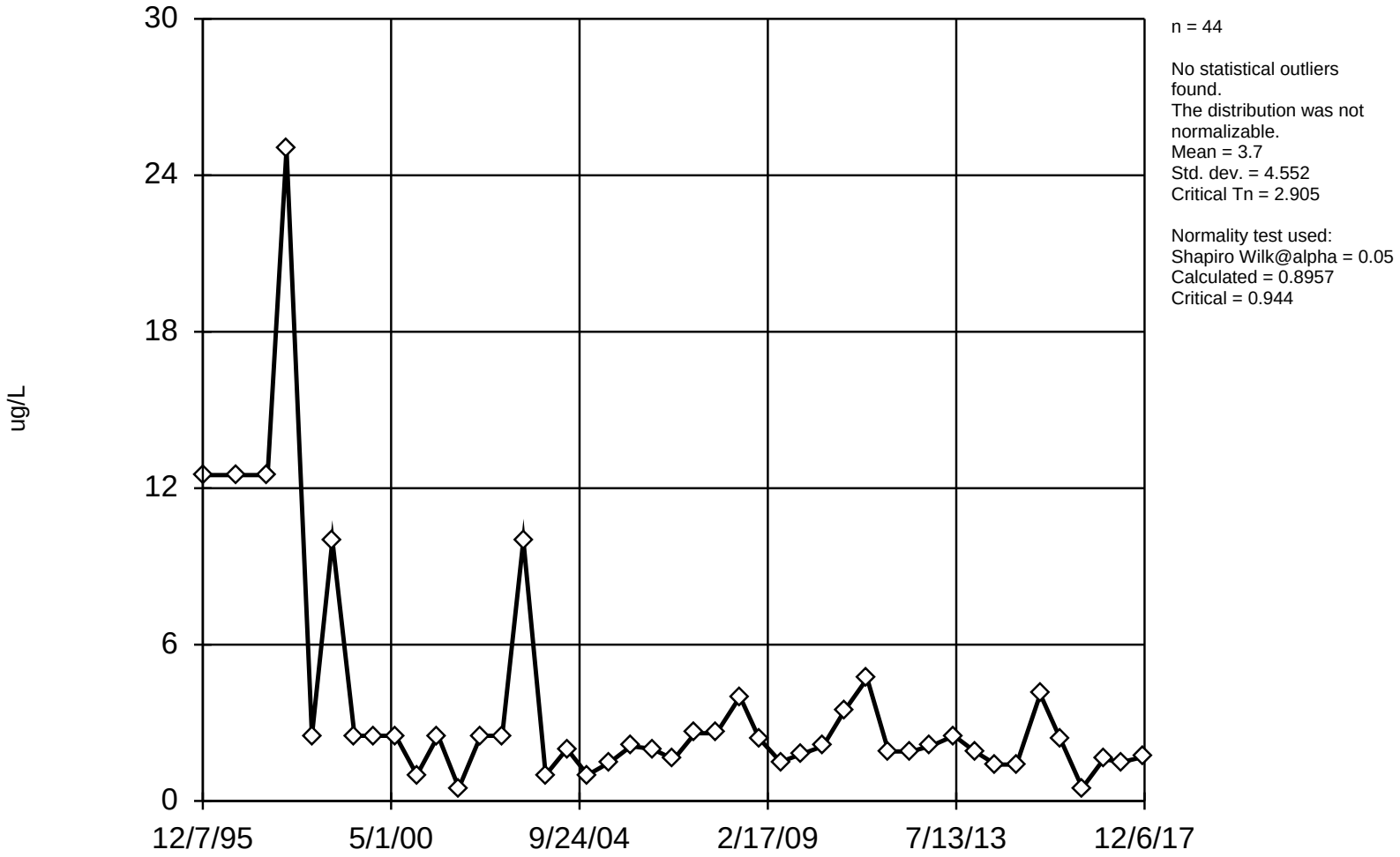
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.9608
Critical = 0.942 (after natural log transformation)
The distribution, after removal of outlier, was found to be log-normal.

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-2I



n = 44

No statistical outliers found.
The distribution was not normalizable.
Mean = 3.7
Std. dev. = 4.552
Critical Tn = 2.905

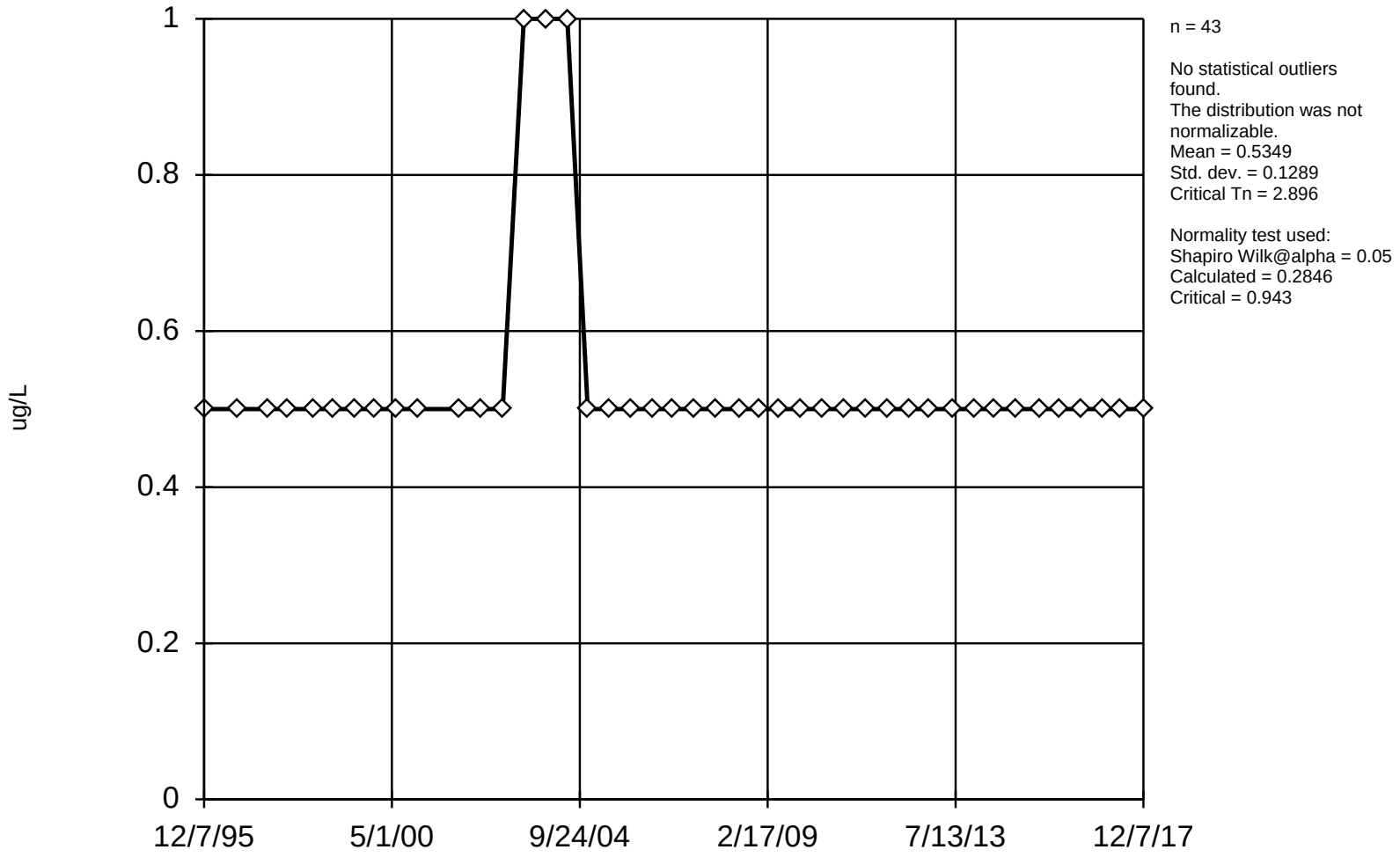
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.8957
Critical = 0.944

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-2S



n = 43

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5349
Std. dev. = 0.1289
Critical Tn = 2.896

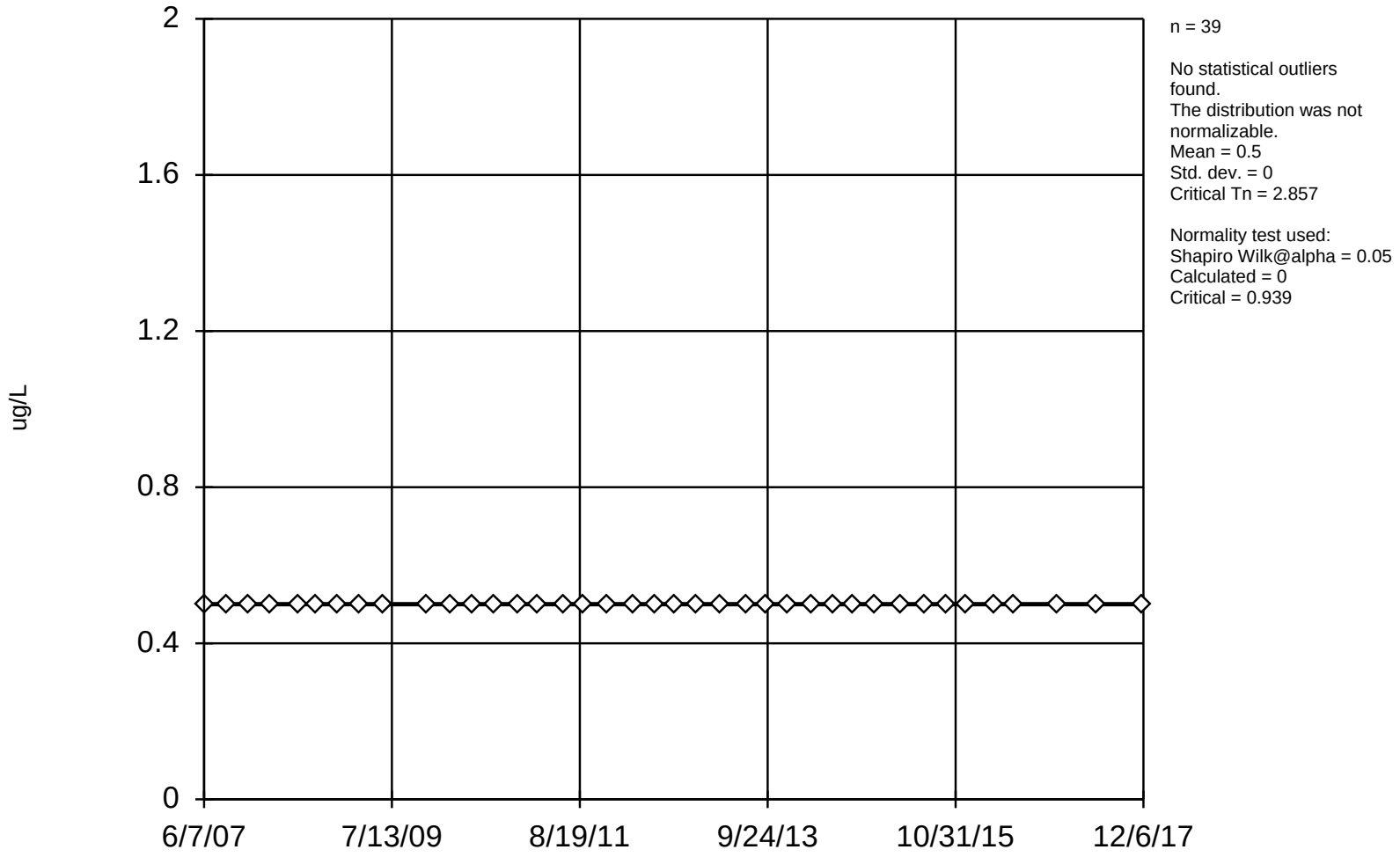
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.2846
Critical = 0.943

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-3D



n = 39

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.857

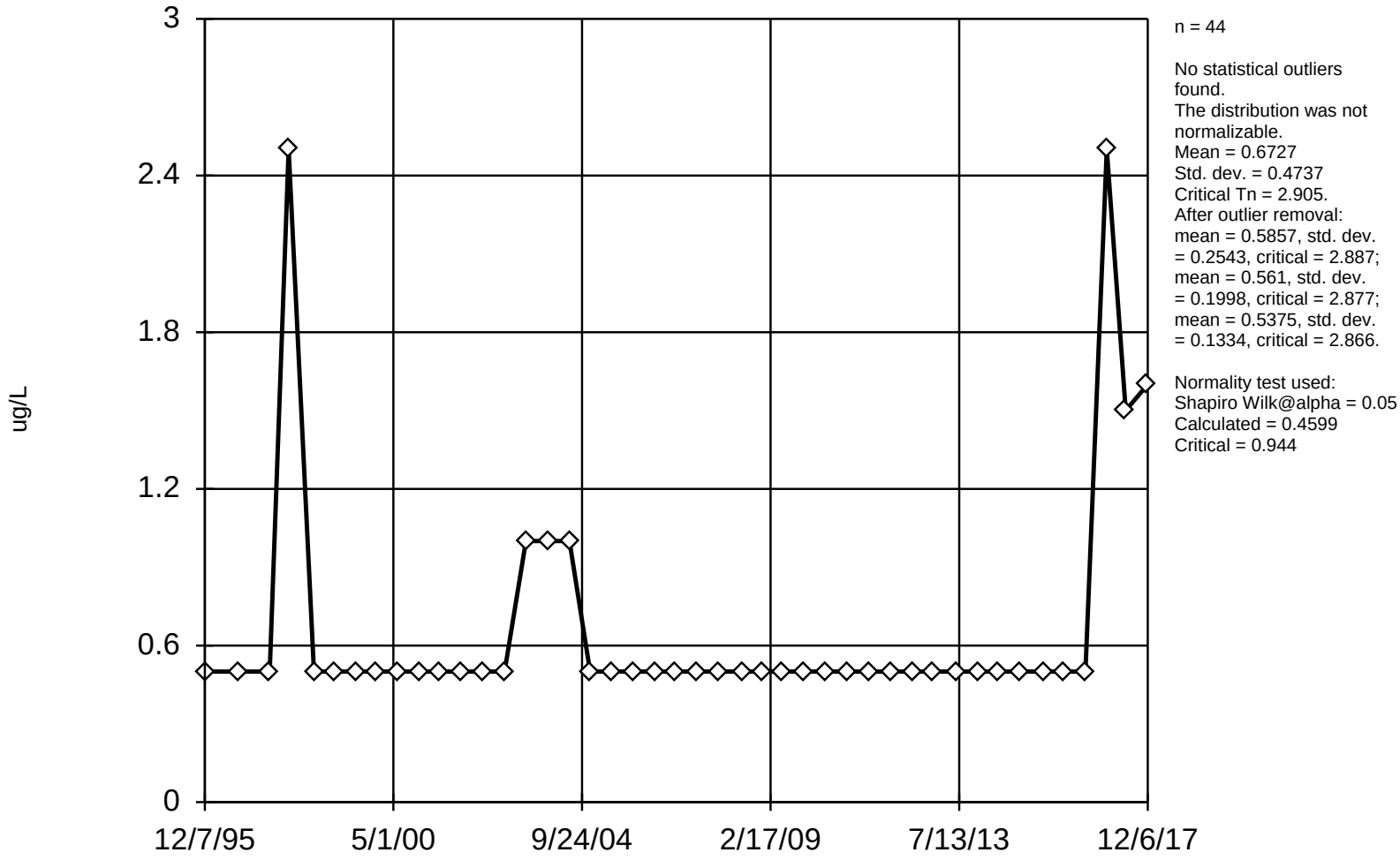
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.939

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-3I



n = 44

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.6727
Std. dev. = 0.4737
Critical Tn = 2.905.
After outlier removal:
mean = 0.5857, std. dev. = 0.2543, critical = 2.887;
mean = 0.561, std. dev. = 0.1998, critical = 2.877;
mean = 0.5375, std. dev. = 0.1334, critical = 2.866.

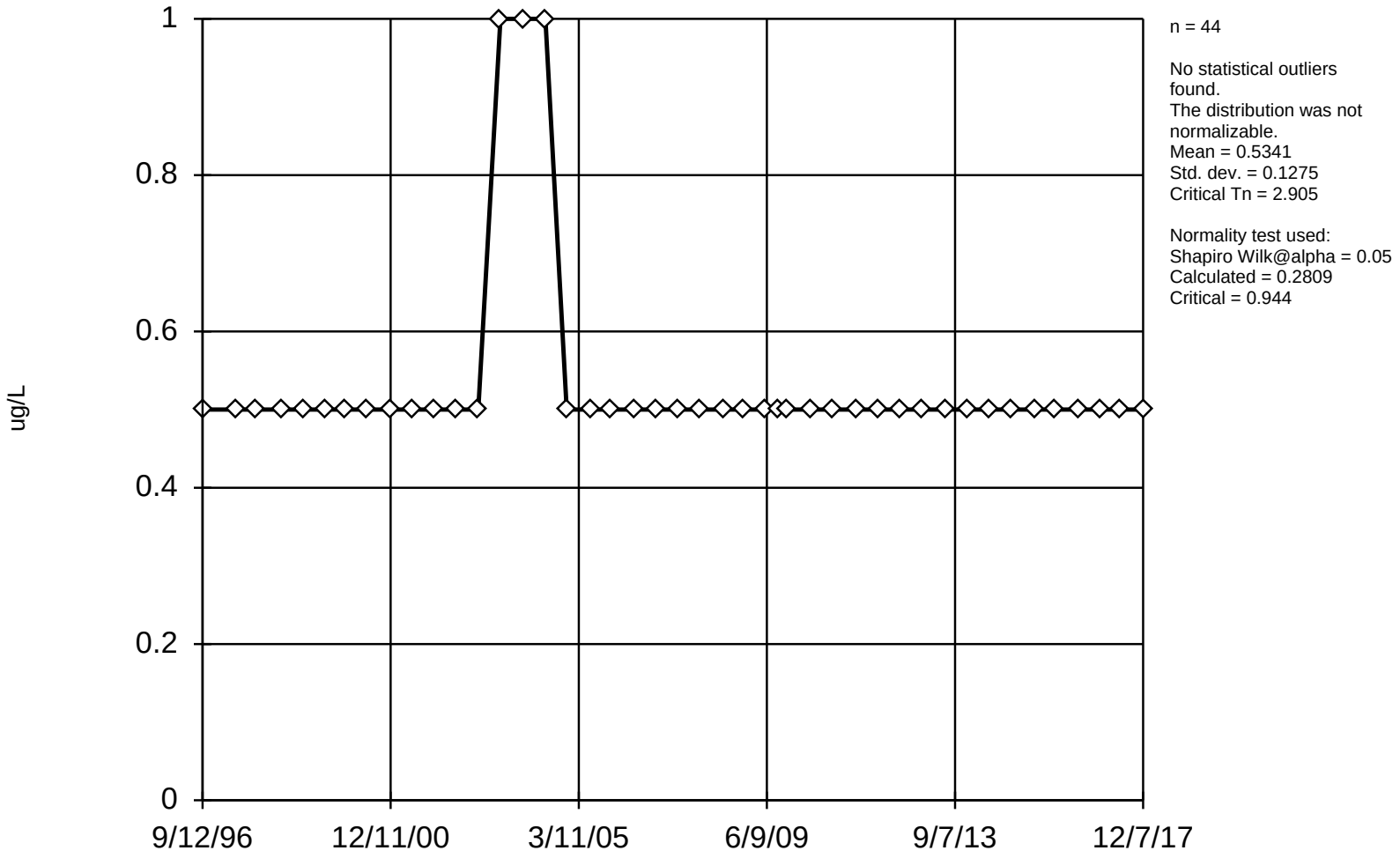
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.4599
Critical = 0.944

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-3S



n = 44

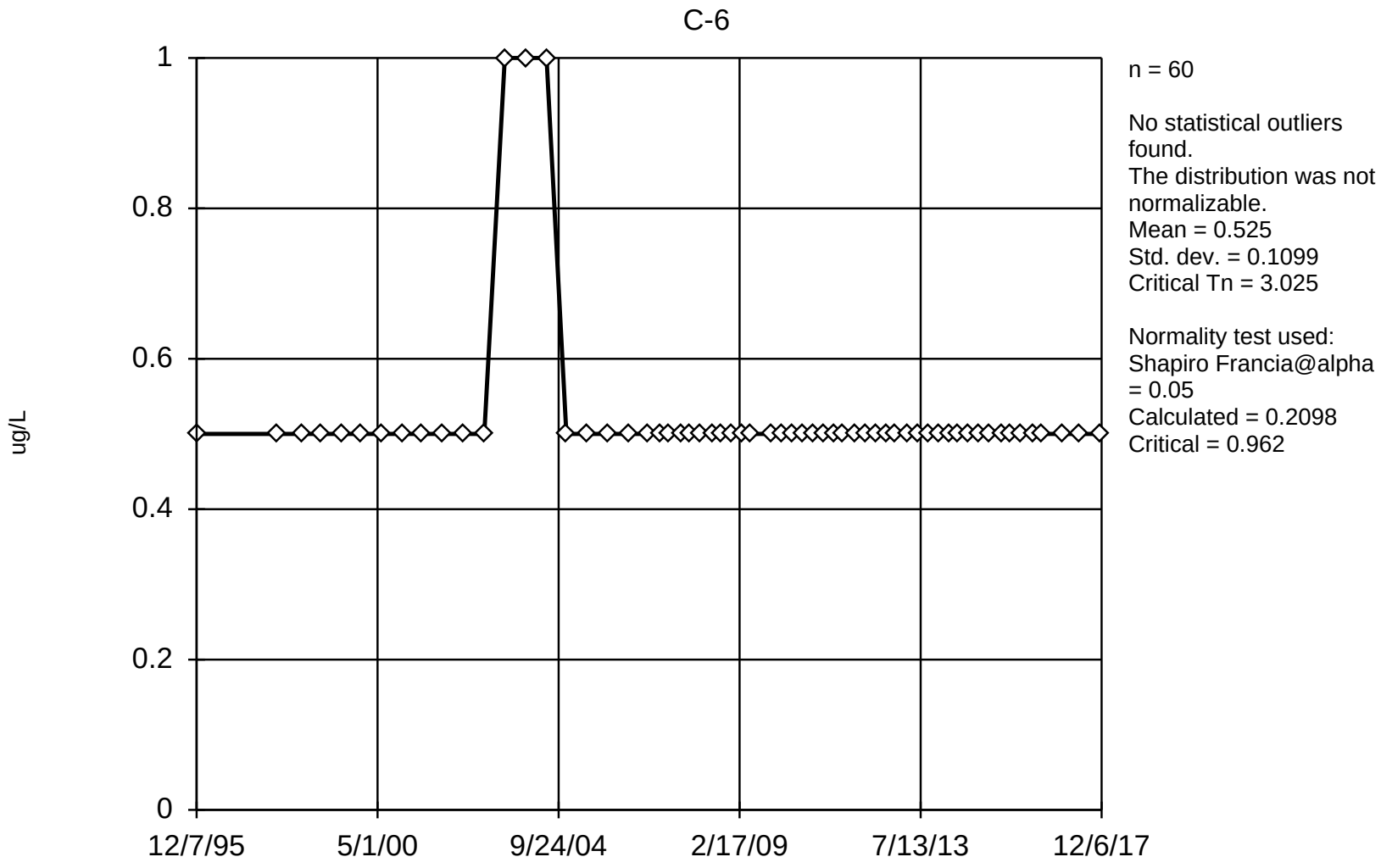
No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5341
Std. dev. = 0.1275
Critical Tn = 2.905

Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.2809
Critical = 0.944

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:30 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

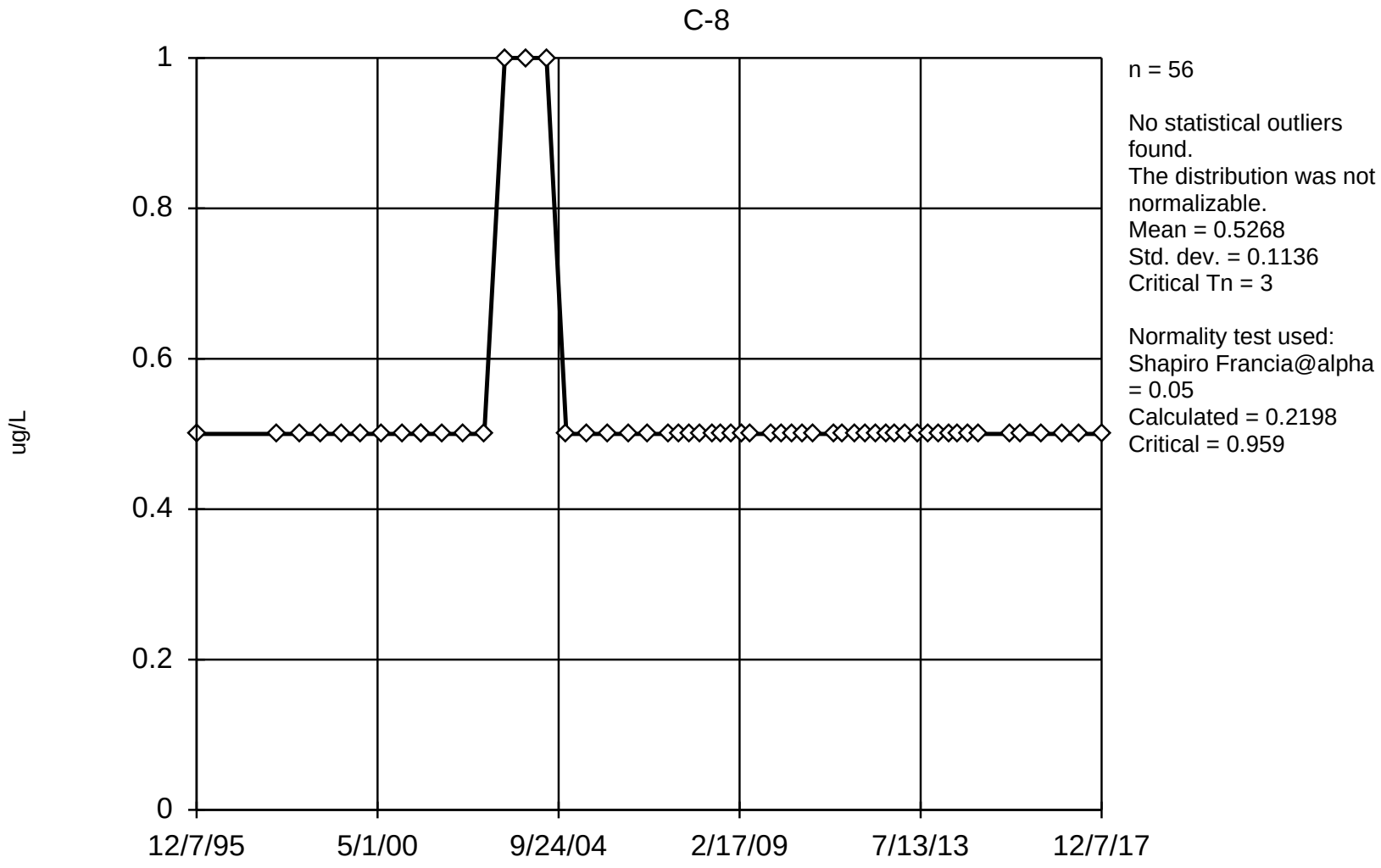
EPA 1989 Outlier Test



Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

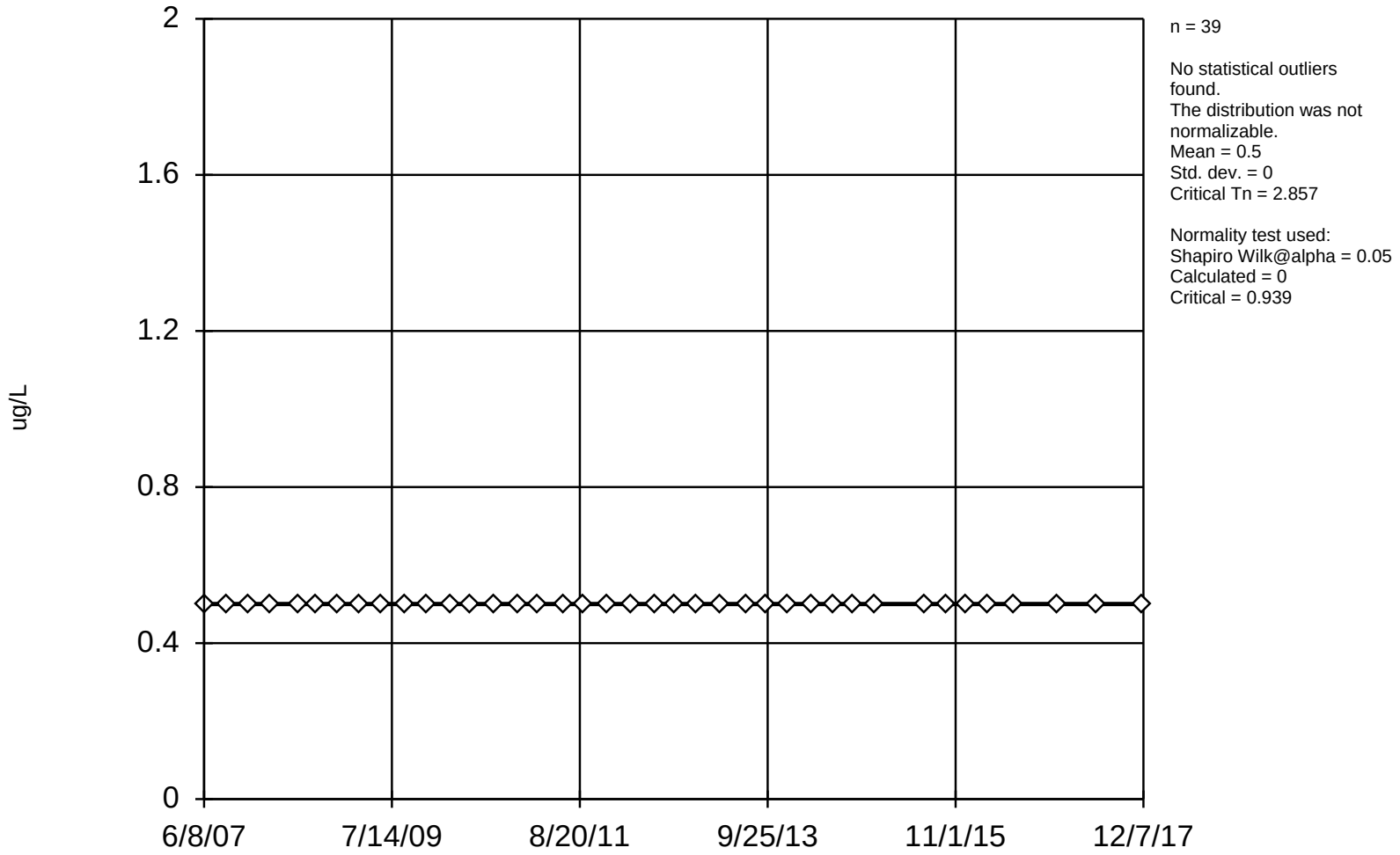


Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-9



n = 39

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.857

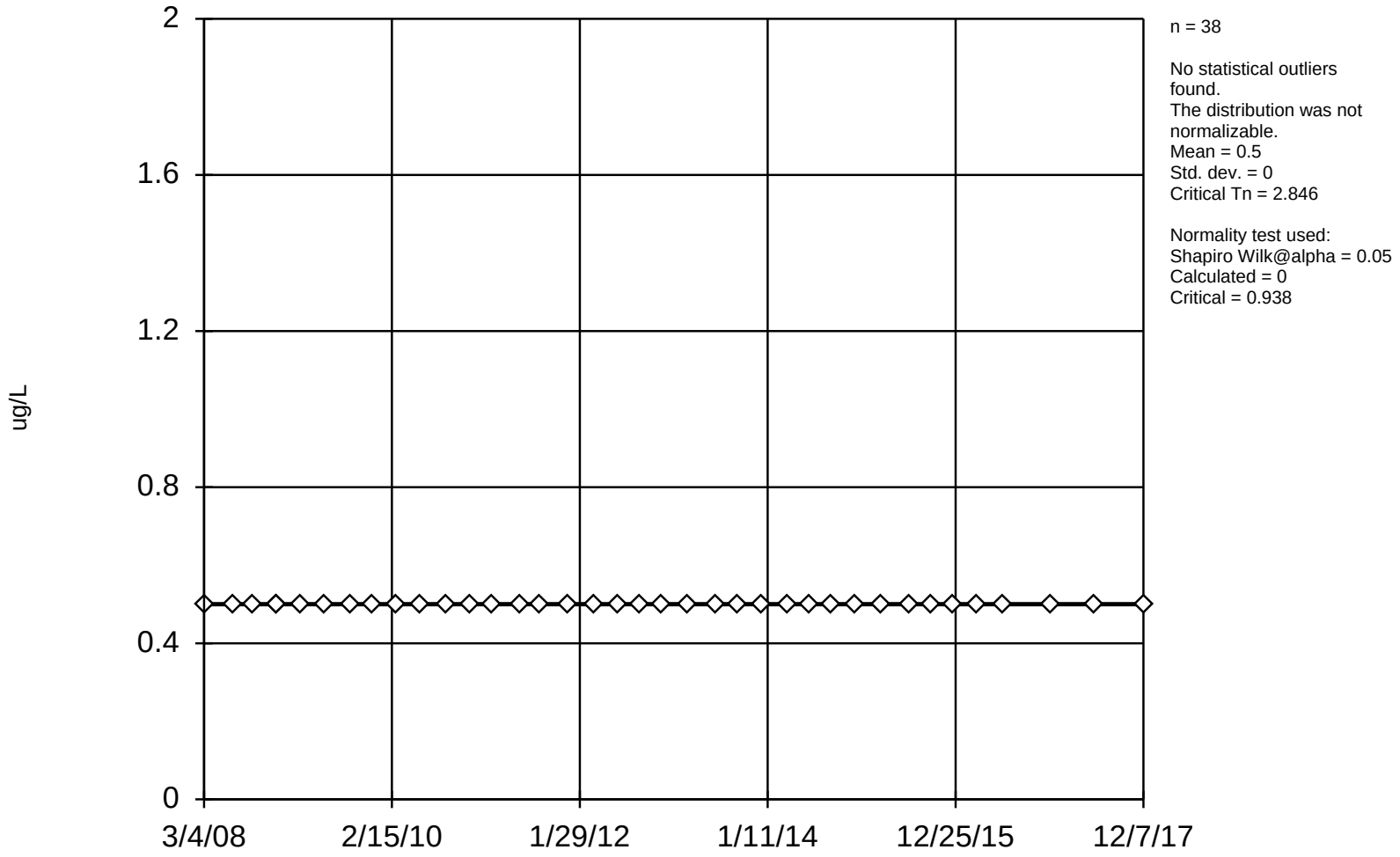
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.939

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-10D

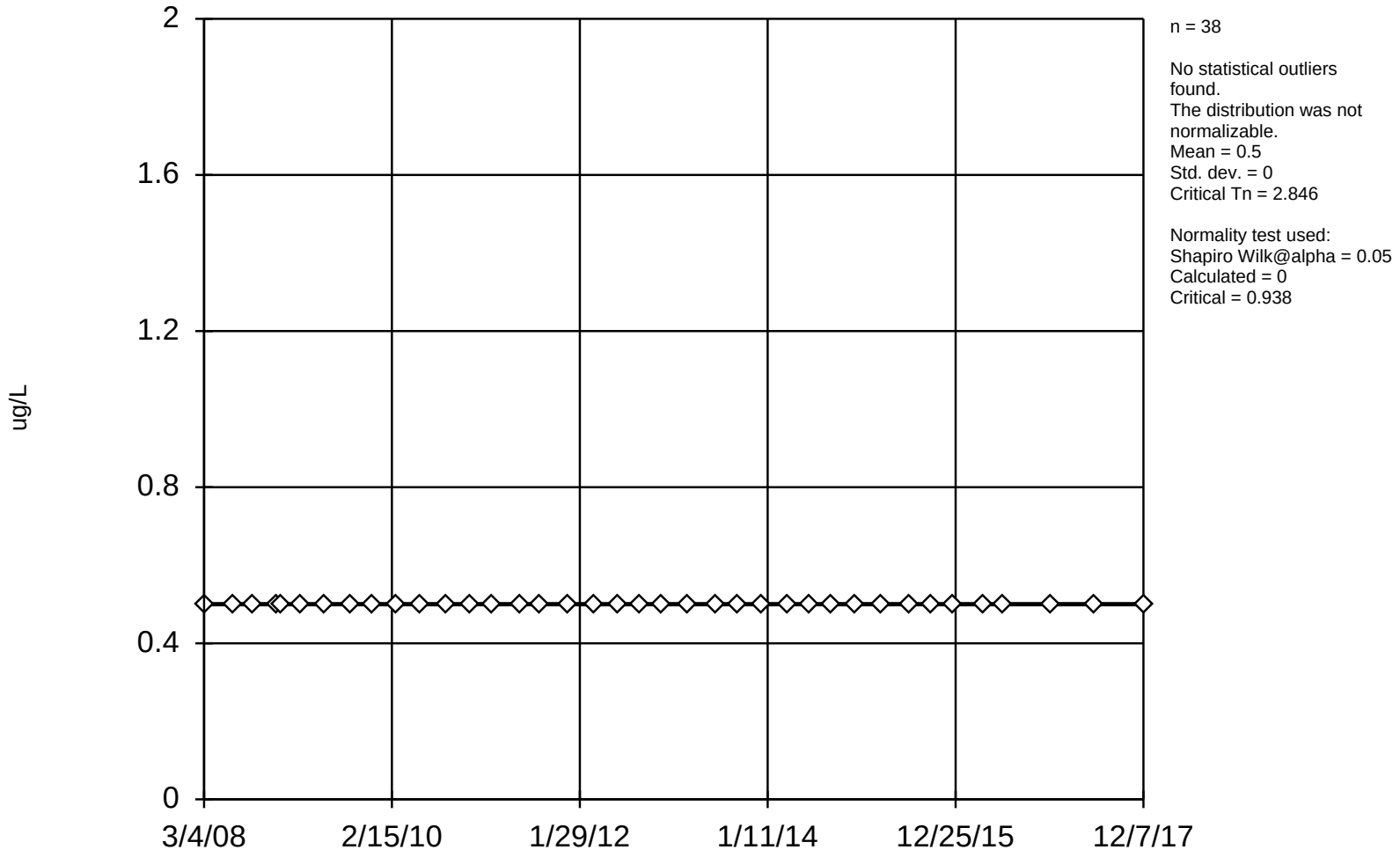


Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-11I



n = 38

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.846

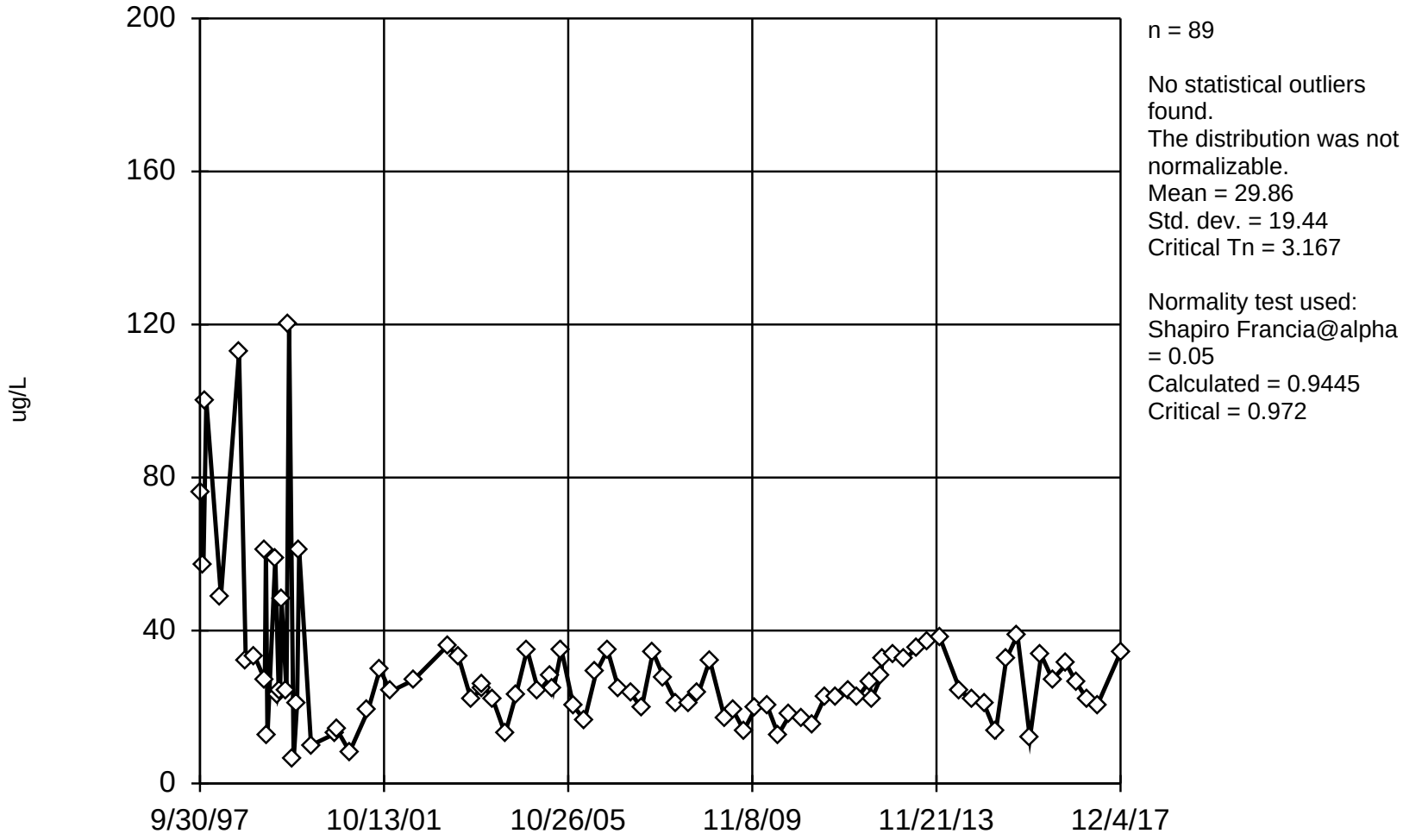
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.938

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

I-1



n = 89

No statistical outliers found.
The distribution was not normalizable.
Mean = 29.86
Std. dev. = 19.44
Critical Tn = 3.167

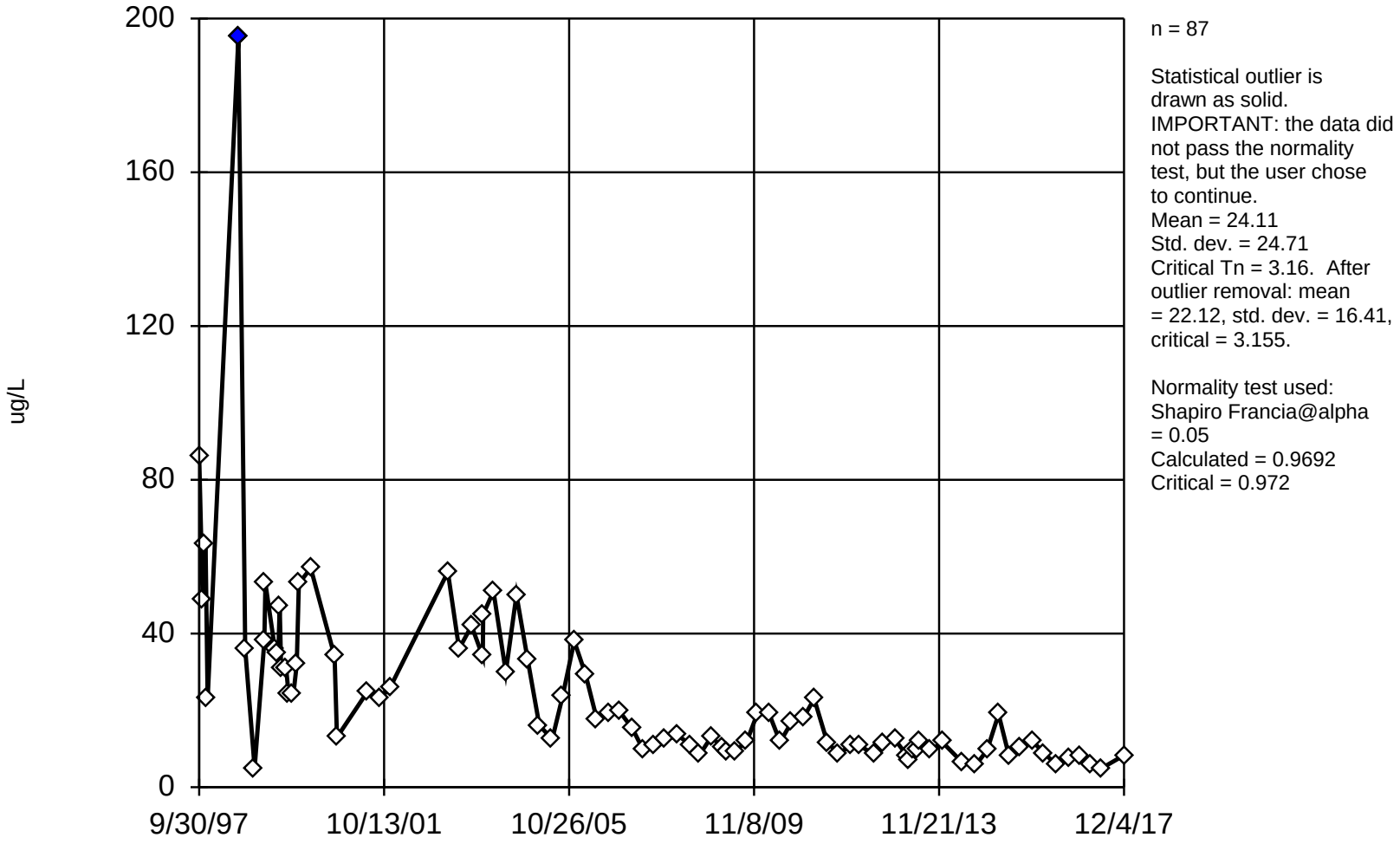
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9445
Critical = 0.972

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

I-2



n = 87

Statistical outlier is drawn as solid.
IMPORTANT: the data did not pass the normality test, but the user chose to continue.
Mean = 24.11
Std. dev. = 24.71
Critical Tn = 3.16. After outlier removal: mean = 22.12, std. dev. = 16.41, critical = 3.155.

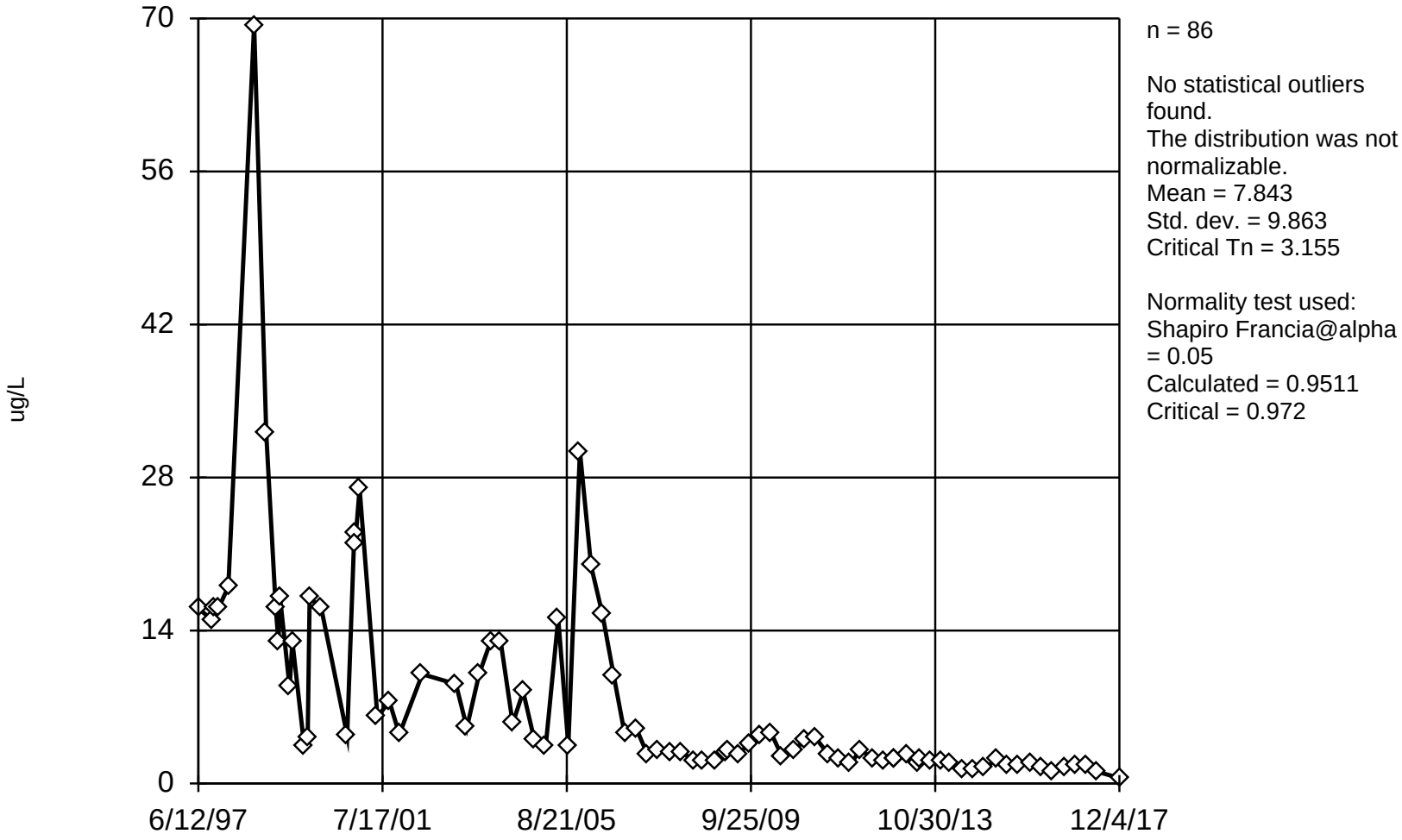
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9692
Critical = 0.972

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

I-3



n = 86

No statistical outliers found.
The distribution was not normalizable.
Mean = 7.843
Std. dev. = 9.863
Critical Tn = 3.155

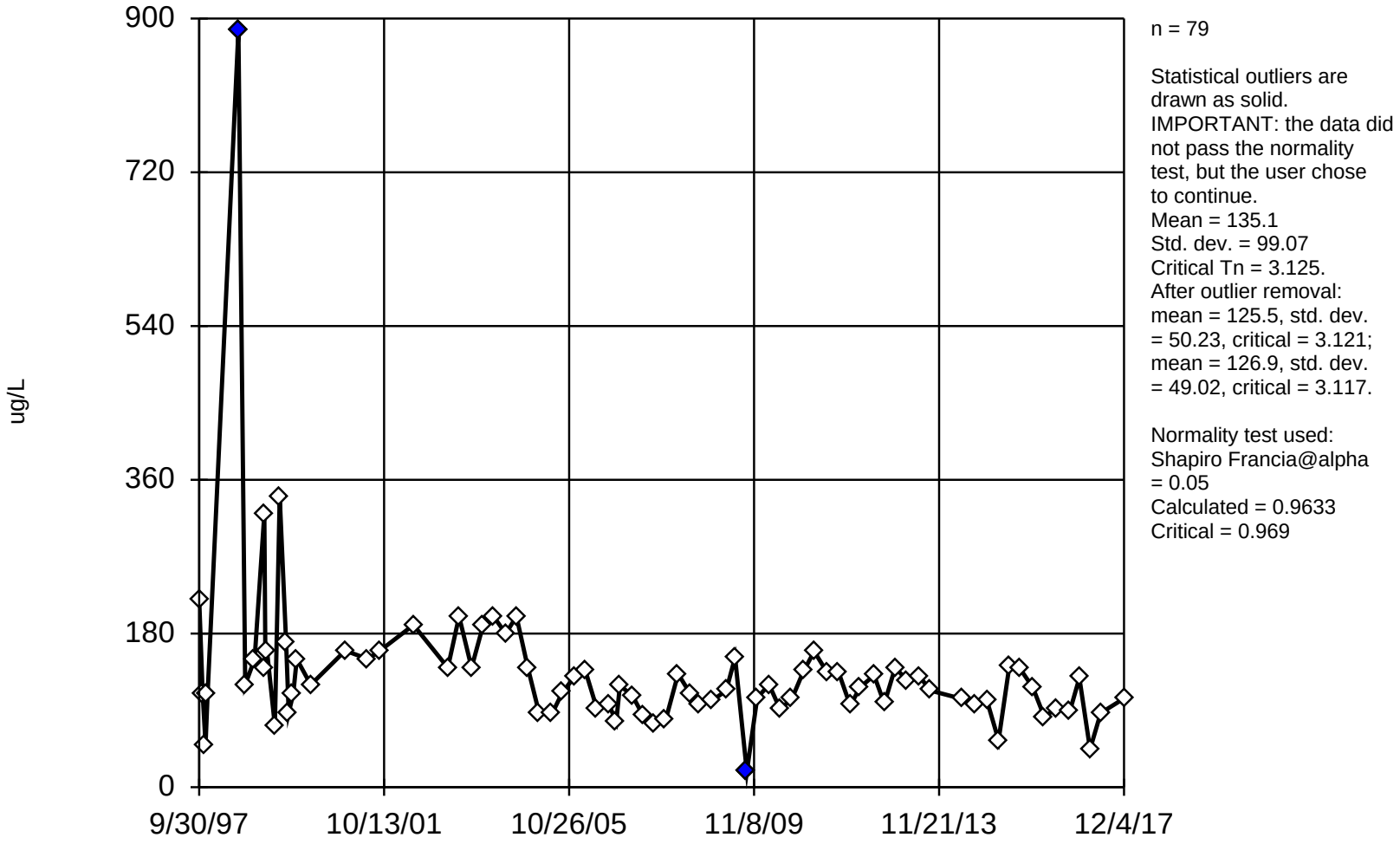
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9511
Critical = 0.972

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

I-4



n = 79

Statistical outliers are drawn as solid.
IMPORTANT: the data did not pass the normality test, but the user chose to continue.
Mean = 135.1
Std. dev. = 99.07
Critical Tn = 3.125.
After outlier removal: mean = 125.5, std. dev. = 50.23, critical = 3.121; mean = 126.9, std. dev. = 49.02, critical = 3.117.

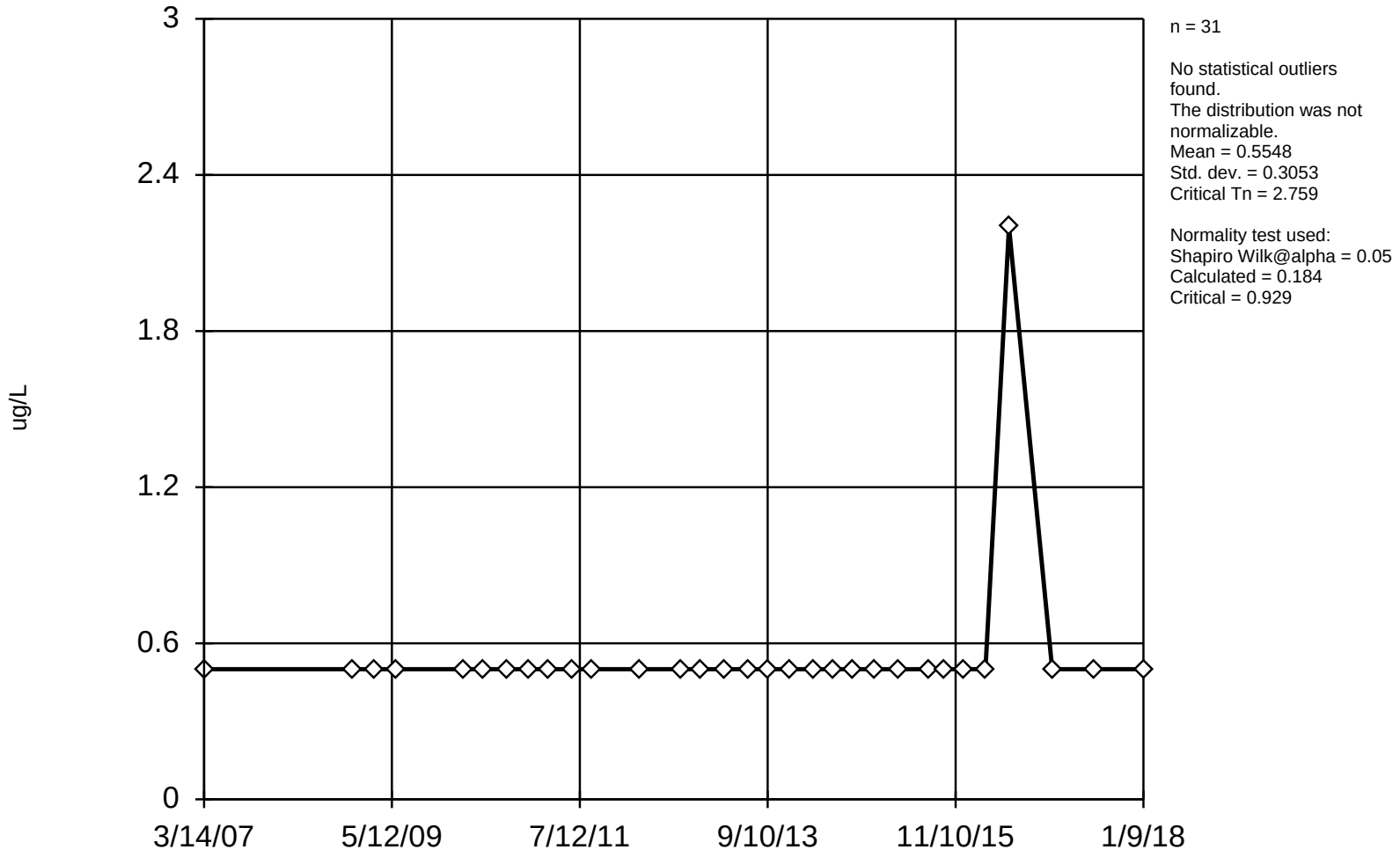
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9633
Critical = 0.969

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

S-2DB



n = 31

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5548
Std. dev. = 0.3053
Critical Tn = 2.759

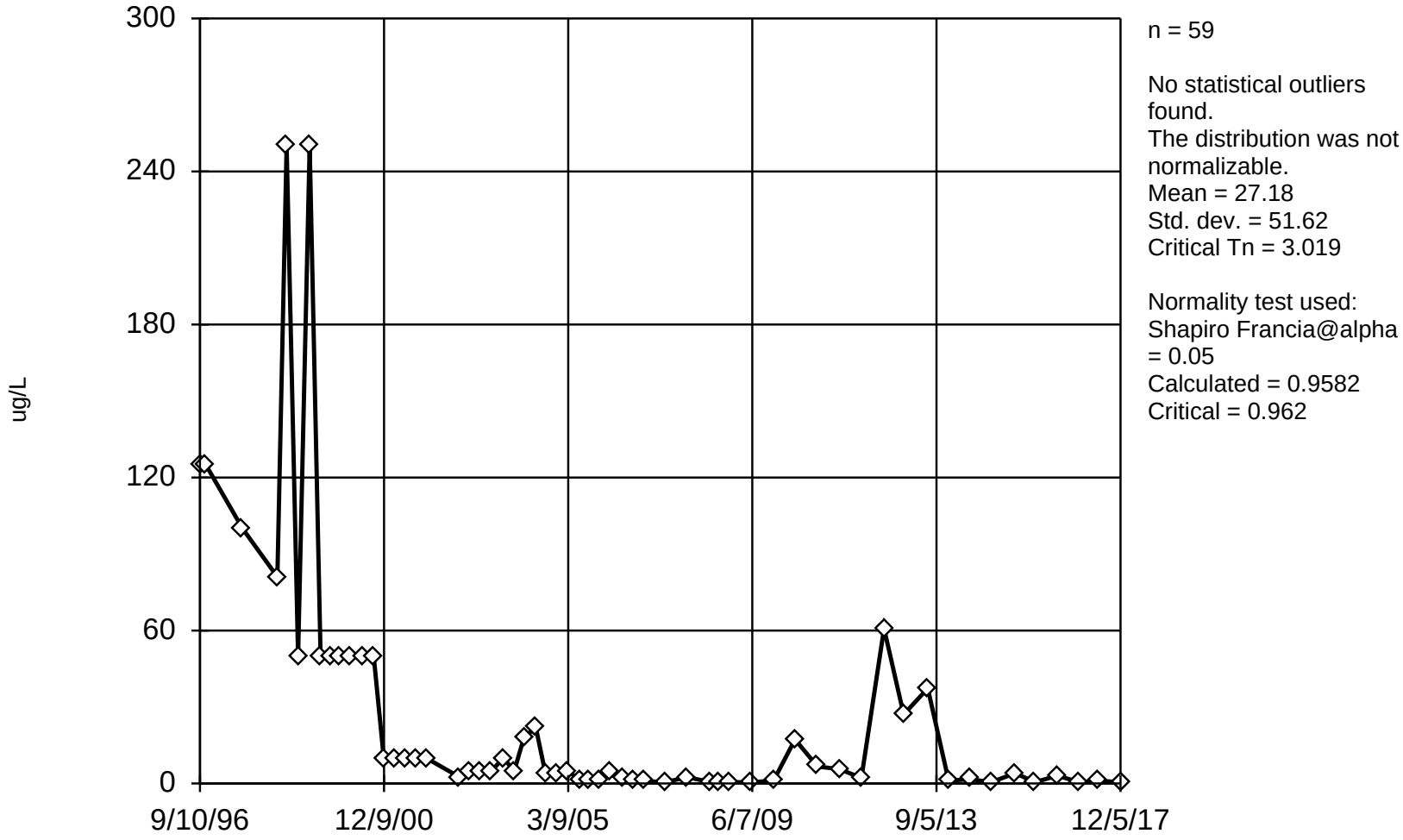
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.184
Critical = 0.929

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

SM-1



n = 59

No statistical outliers found.
The distribution was not normalizable.
Mean = 27.18
Std. dev. = 51.62
Critical Tn = 3.019

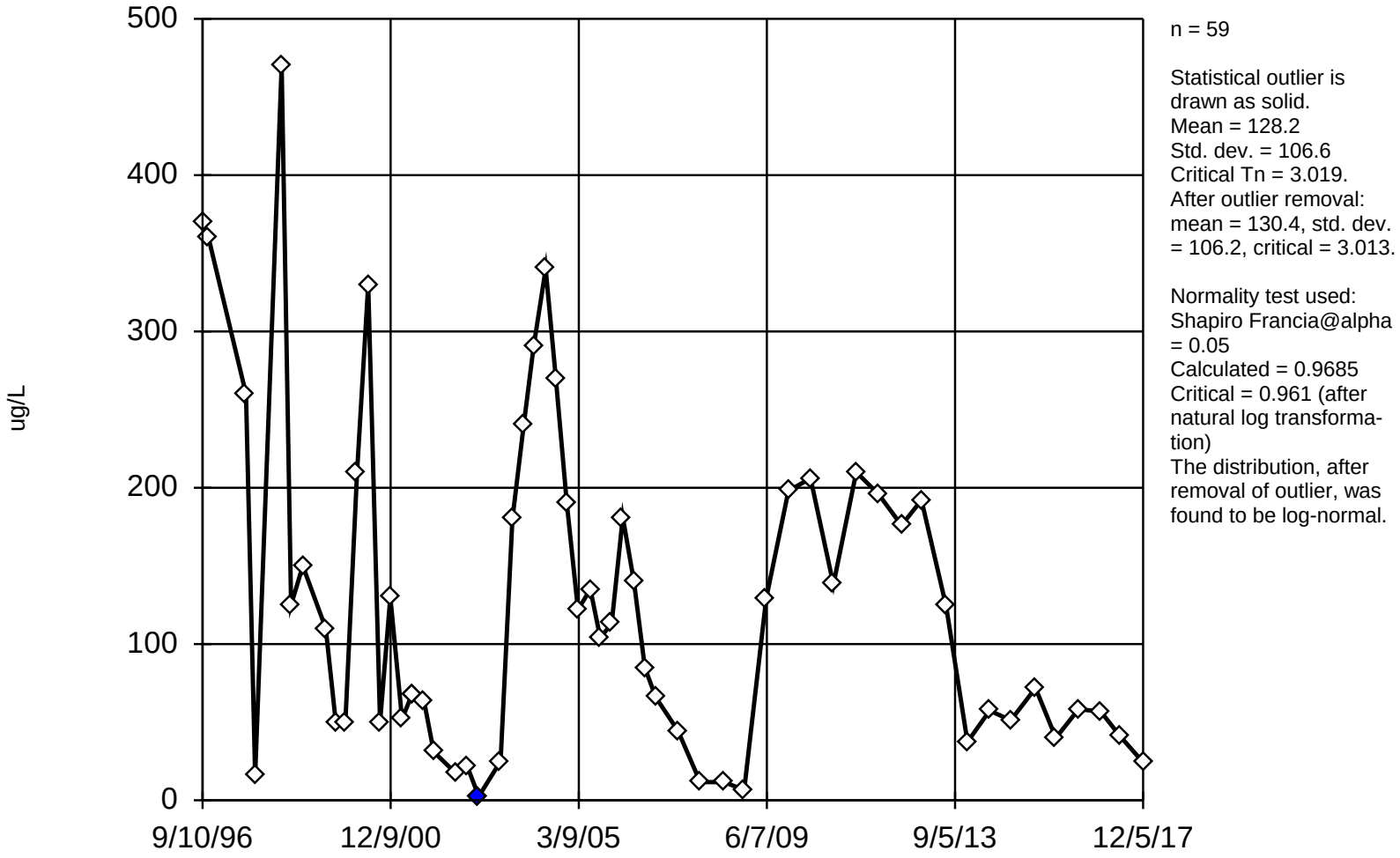
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9582
Critical = 0.962

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

SM-2



n = 59

Statistical outlier is drawn as solid.
Mean = 128.2
Std. dev. = 106.6
Critical Tn = 3.019.
After outlier removal: mean = 130.4, std. dev. = 106.2, critical = 3.013.

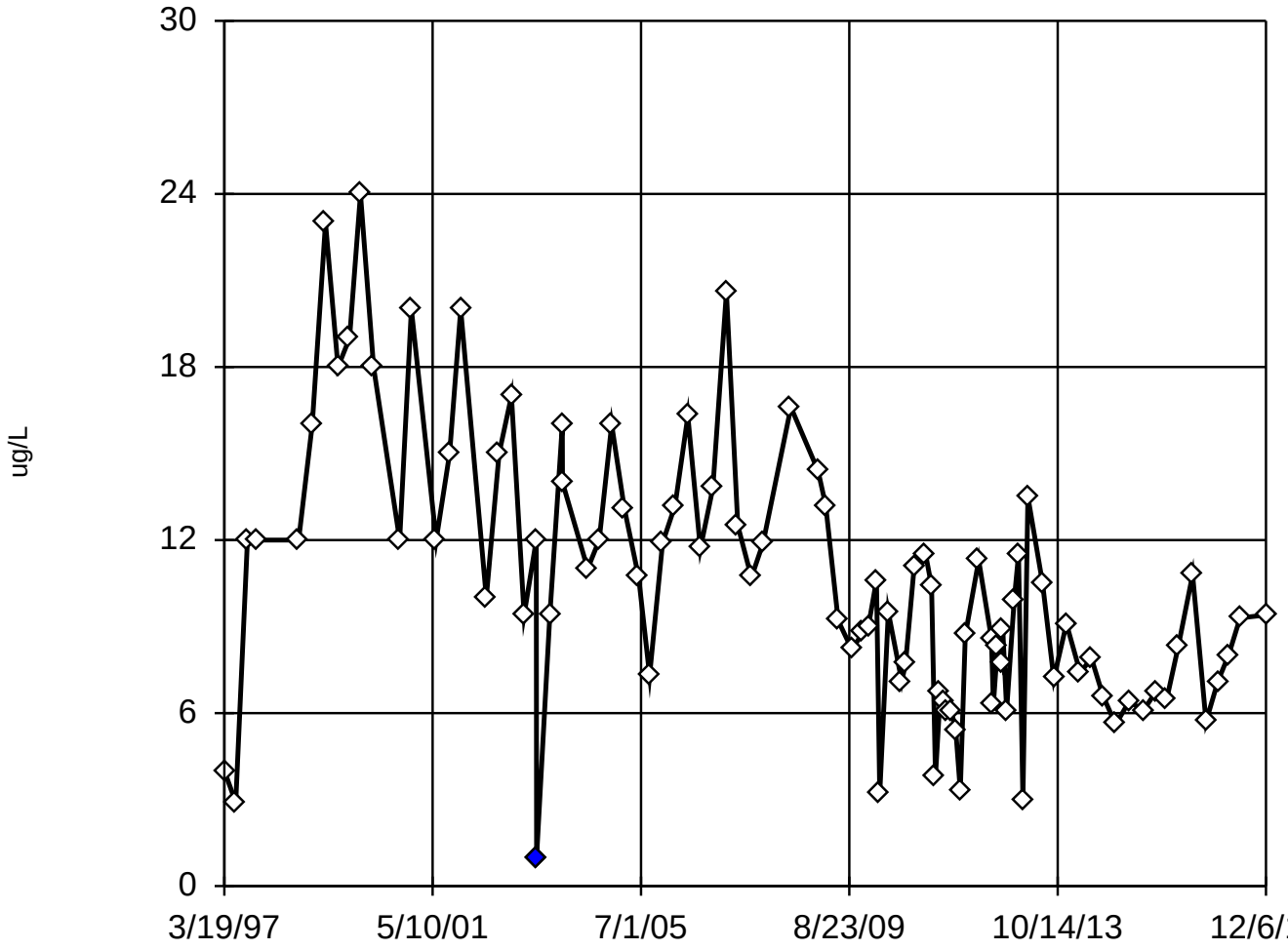
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9685
Critical = 0.961 (after natural log transformation)
The distribution, after removal of outlier, was found to be log-normal.

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

W-6



n = 92

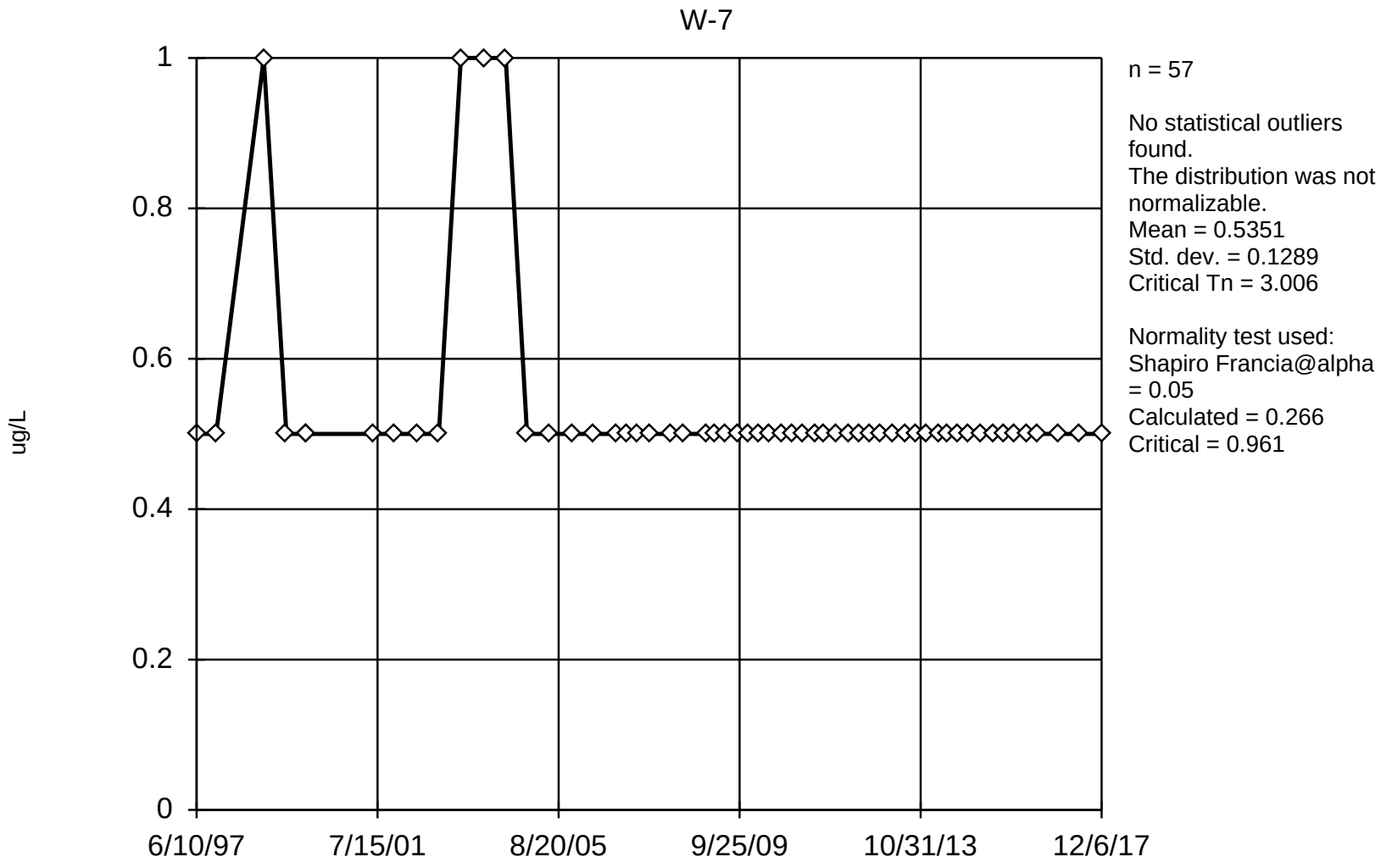
Statistical outlier is drawn as solid.
Mean = 10.51
Std. dev. = 4.603
Critical Tn = 3.179.
After outlier removal: mean = 10.62, std. dev. = 4.517, critical = 3.174.

Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9753
Critical = 0.973 (after natural log transformation)
The distribution, after removal of outlier, was found to be log-normal.

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

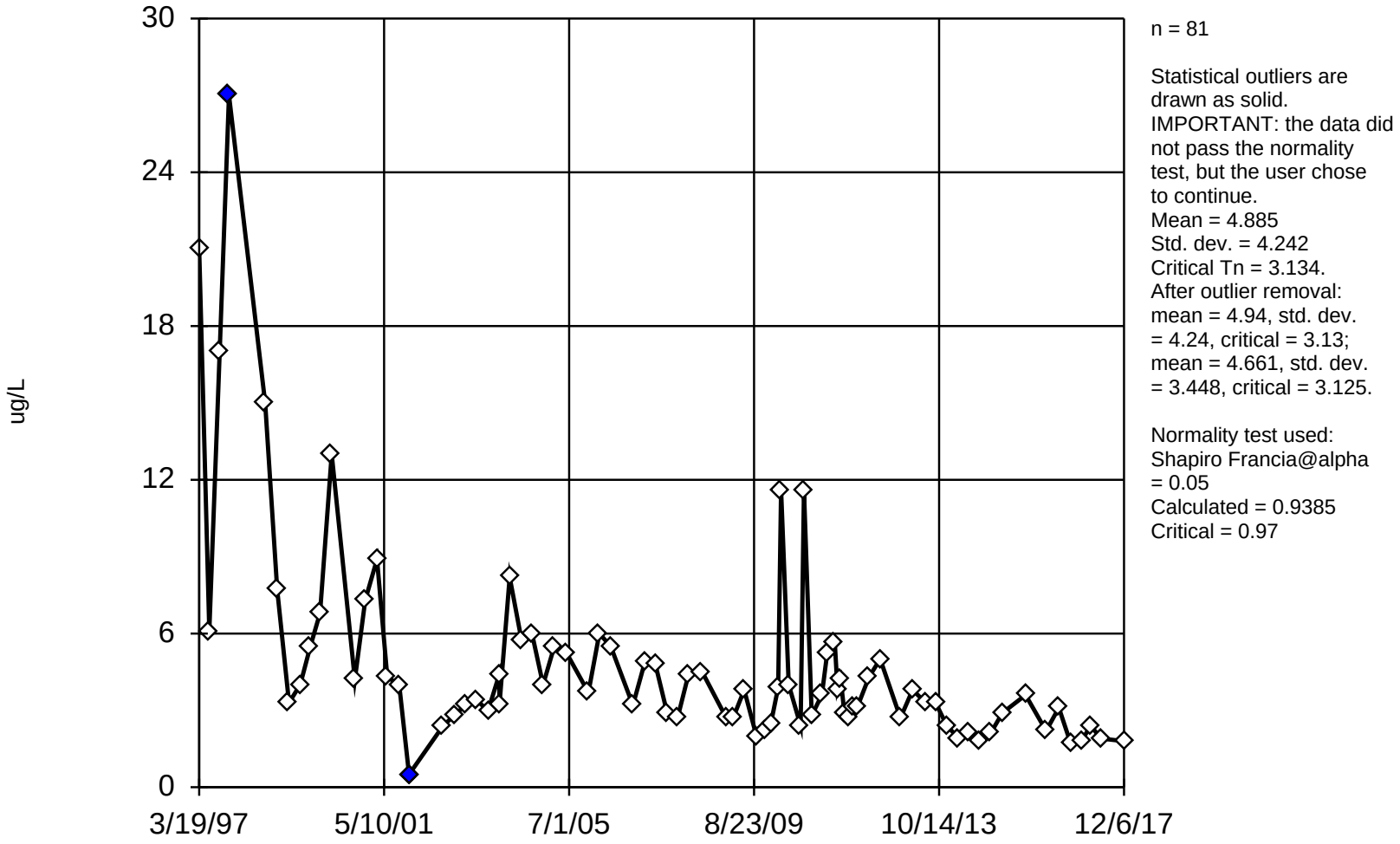


Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

W-12



n = 81

Statistical outliers are drawn as solid.
IMPORTANT: the data did not pass the normality test, but the user chose to continue.
Mean = 4.885
Std. dev. = 4.242
Critical Tn = 3.134.
After outlier removal: mean = 4.94, std. dev. = 4.24, critical = 3.13; mean = 4.661, std. dev. = 3.448, critical = 3.125.

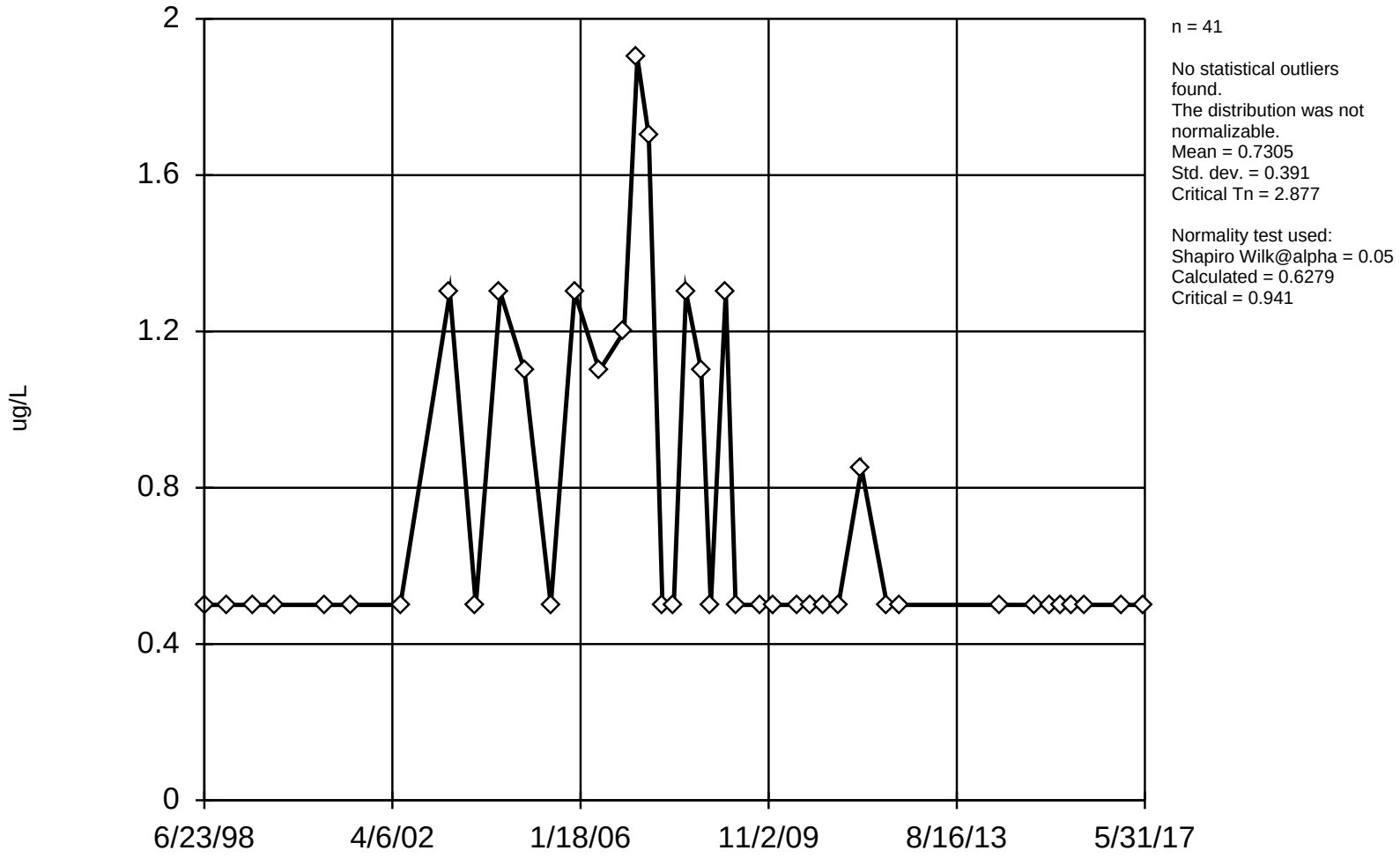
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9385
Critical = 0.97

Constituent: 1,2-DCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-2D



n = 41

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.7305
Std. dev. = 0.391
Critical Tn = 2.877

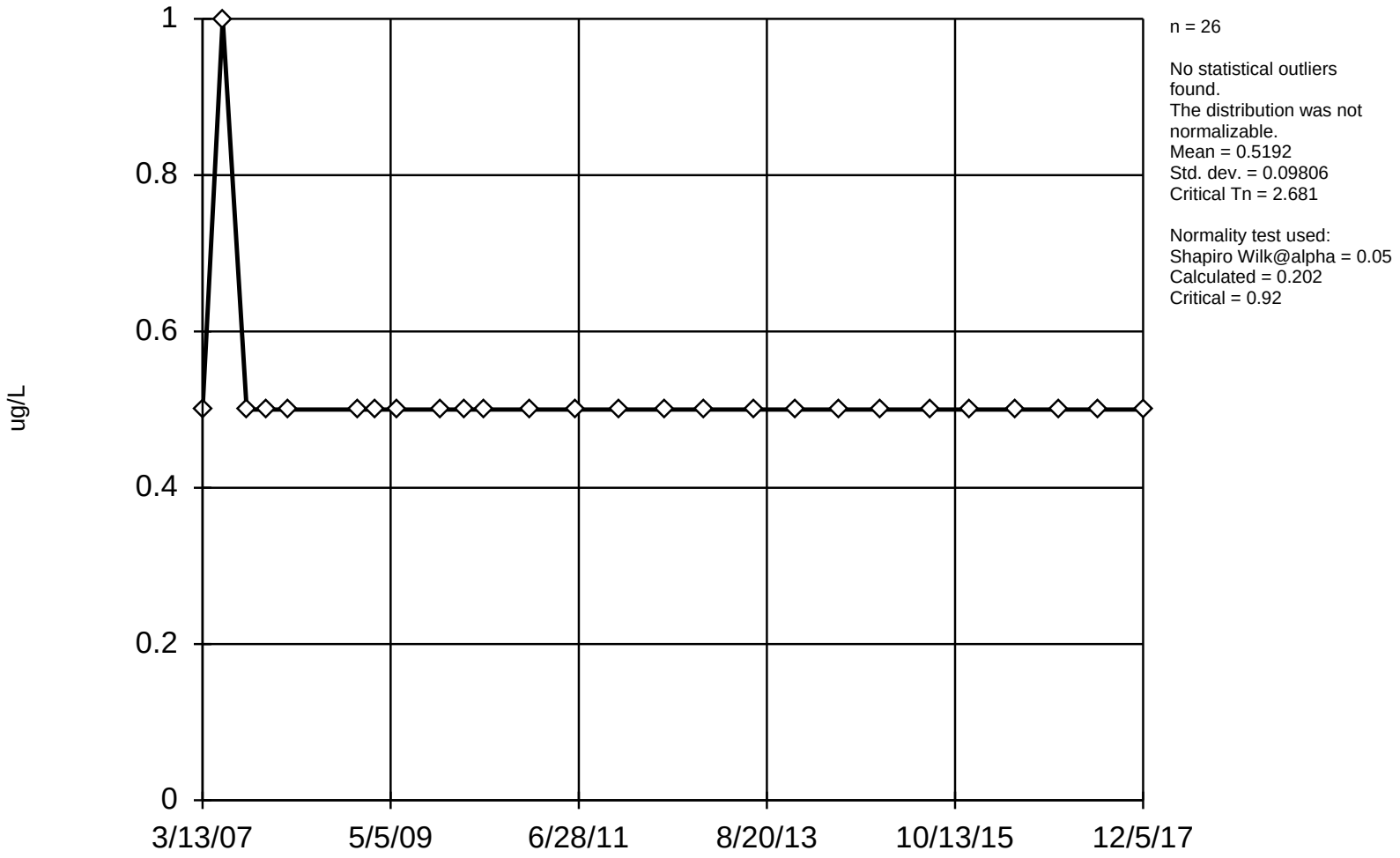
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.6279
Critical = 0.941

Constituent: TCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-2I



n = 26

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5192
Std. dev. = 0.09806
Critical Tn = 2.681

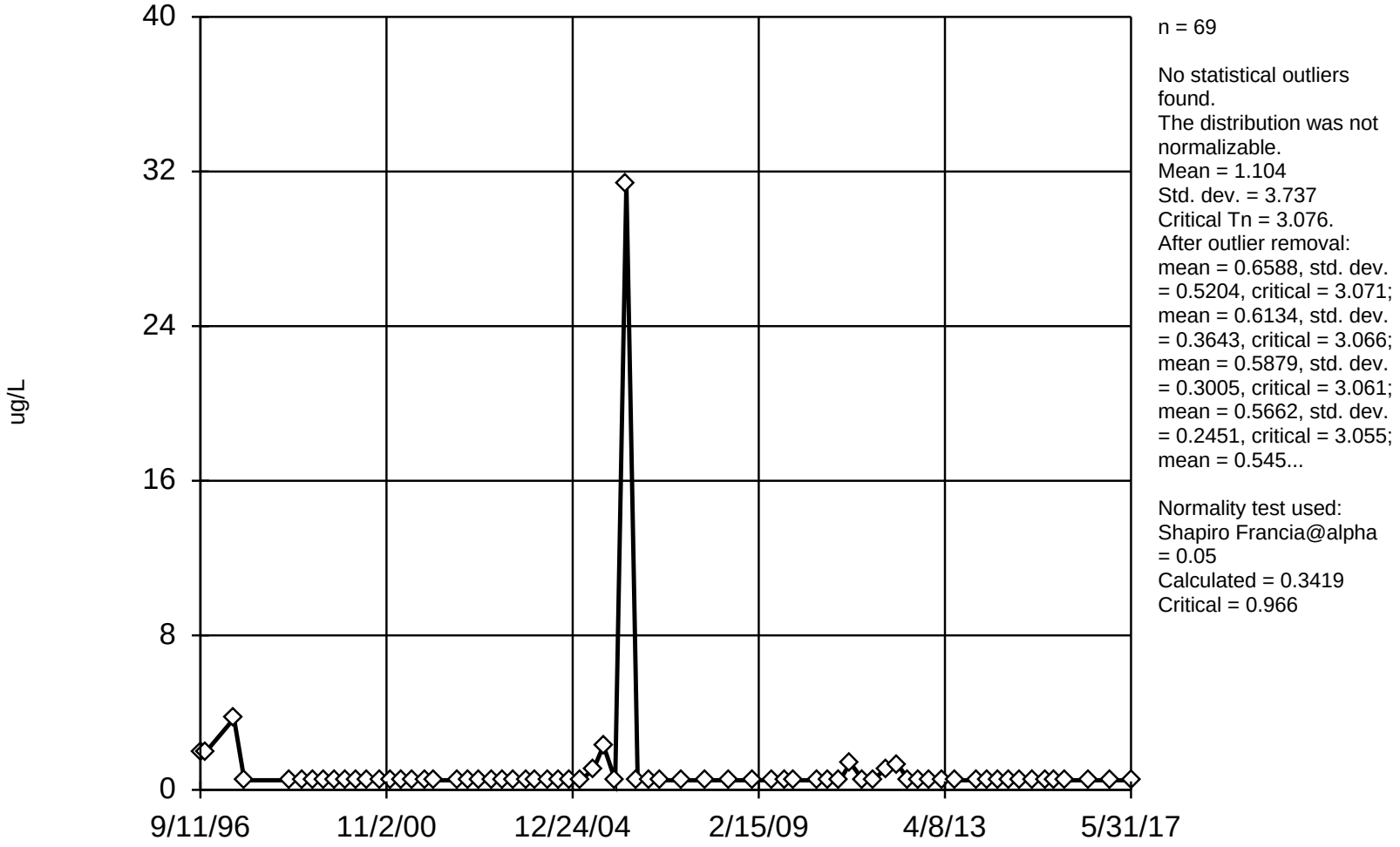
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.202
Critical = 0.92

Constituent: TCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-2S



n = 69

No statistical outliers found.
The distribution was not normalizable.
Mean = 1.104
Std. dev. = 3.737
Critical Tn = 3.076.
After outlier removal:
mean = 0.6588, std. dev. = 0.5204, critical = 3.071;
mean = 0.6134, std. dev. = 0.3643, critical = 3.066;
mean = 0.5879, std. dev. = 0.3005, critical = 3.061;
mean = 0.5662, std. dev. = 0.2451, critical = 3.055;
mean = 0.545...

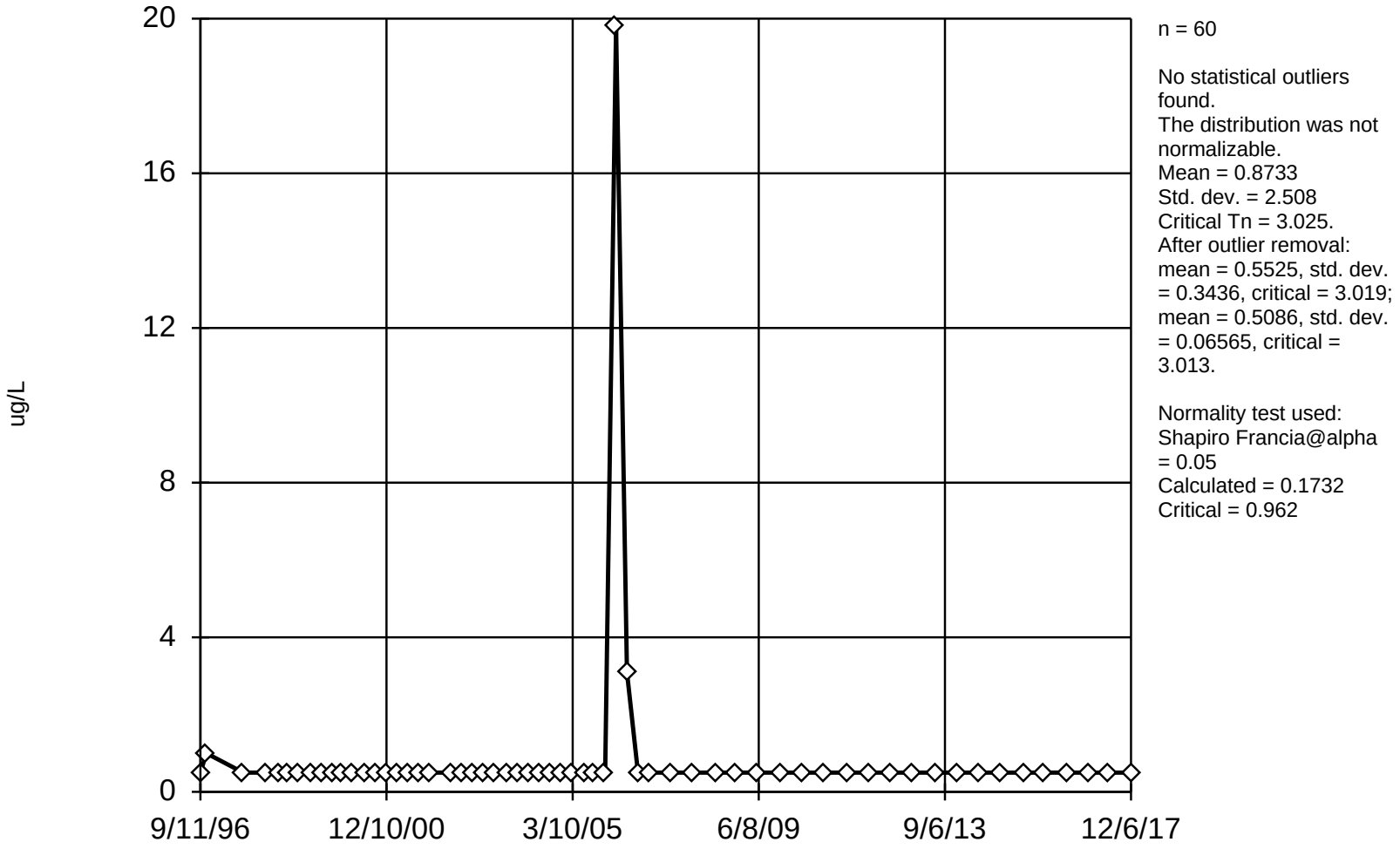
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.3419
Critical = 0.966

Constituent: TCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-4D



n = 60

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.8733
Std. dev. = 2.508
Critical Tn = 3.025.
After outlier removal:
mean = 0.5525, std. dev. = 0.3436, critical = 3.019;
mean = 0.5086, std. dev. = 0.06565, critical = 3.013.

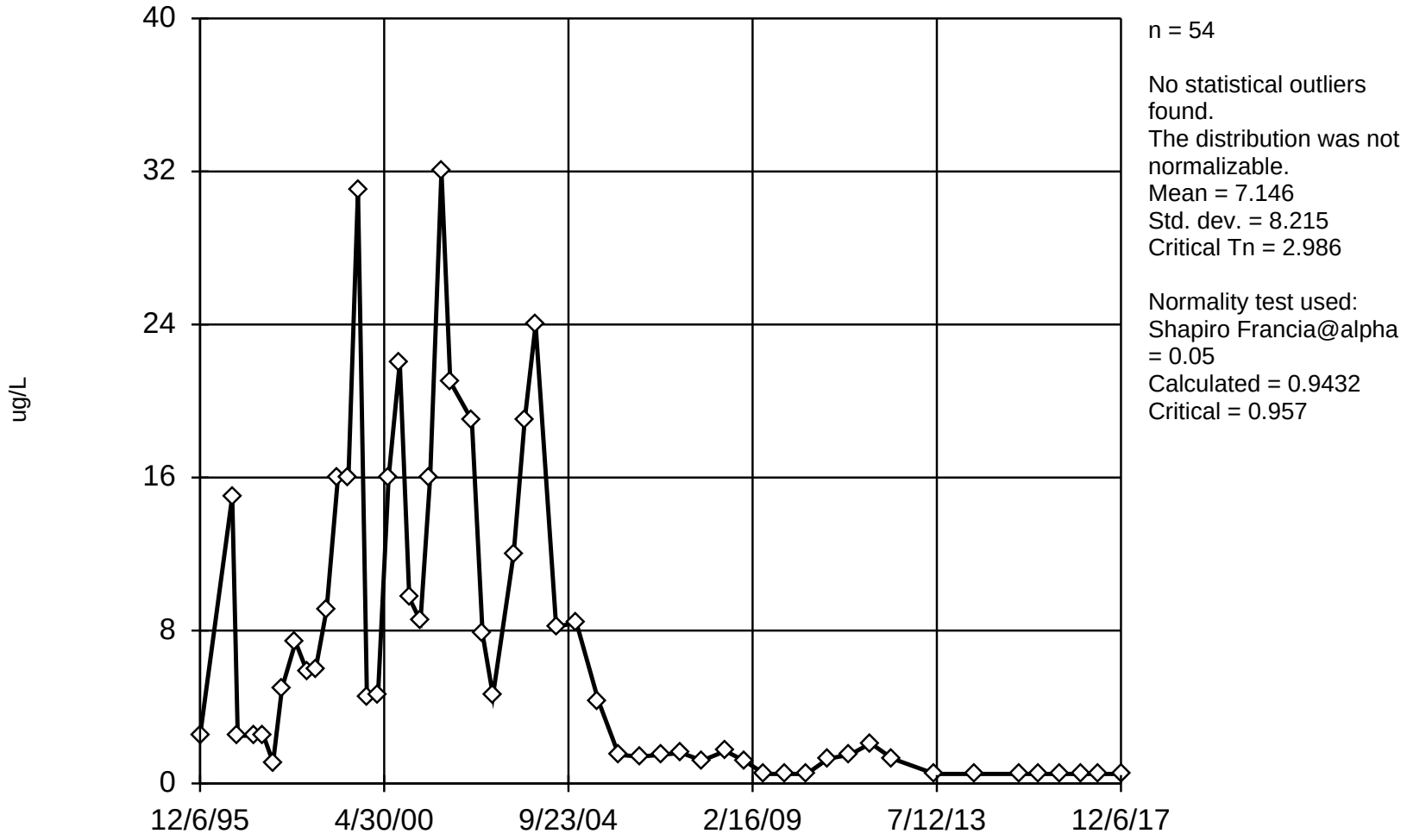
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.1732
Critical = 0.962

Constituent: TCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-4I



n = 54

No statistical outliers found.
The distribution was not normalizable.
Mean = 7.146
Std. dev. = 8.215
Critical Tn = 2.986

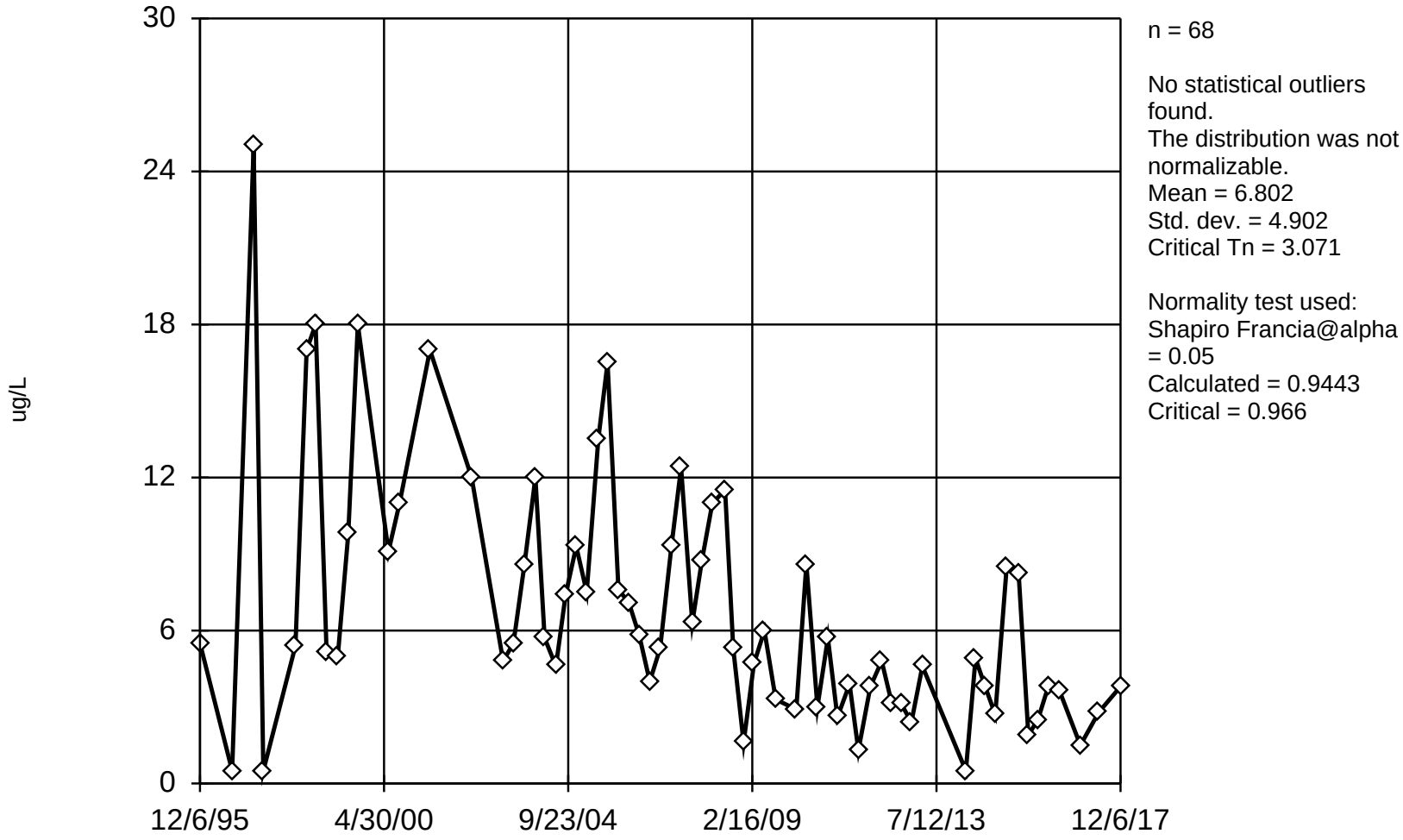
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9432
Critical = 0.957

Constituent: TCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-4S



n = 68

No statistical outliers found.
The distribution was not normalizable.
Mean = 6.802
Std. dev. = 4.902
Critical Tn = 3.071

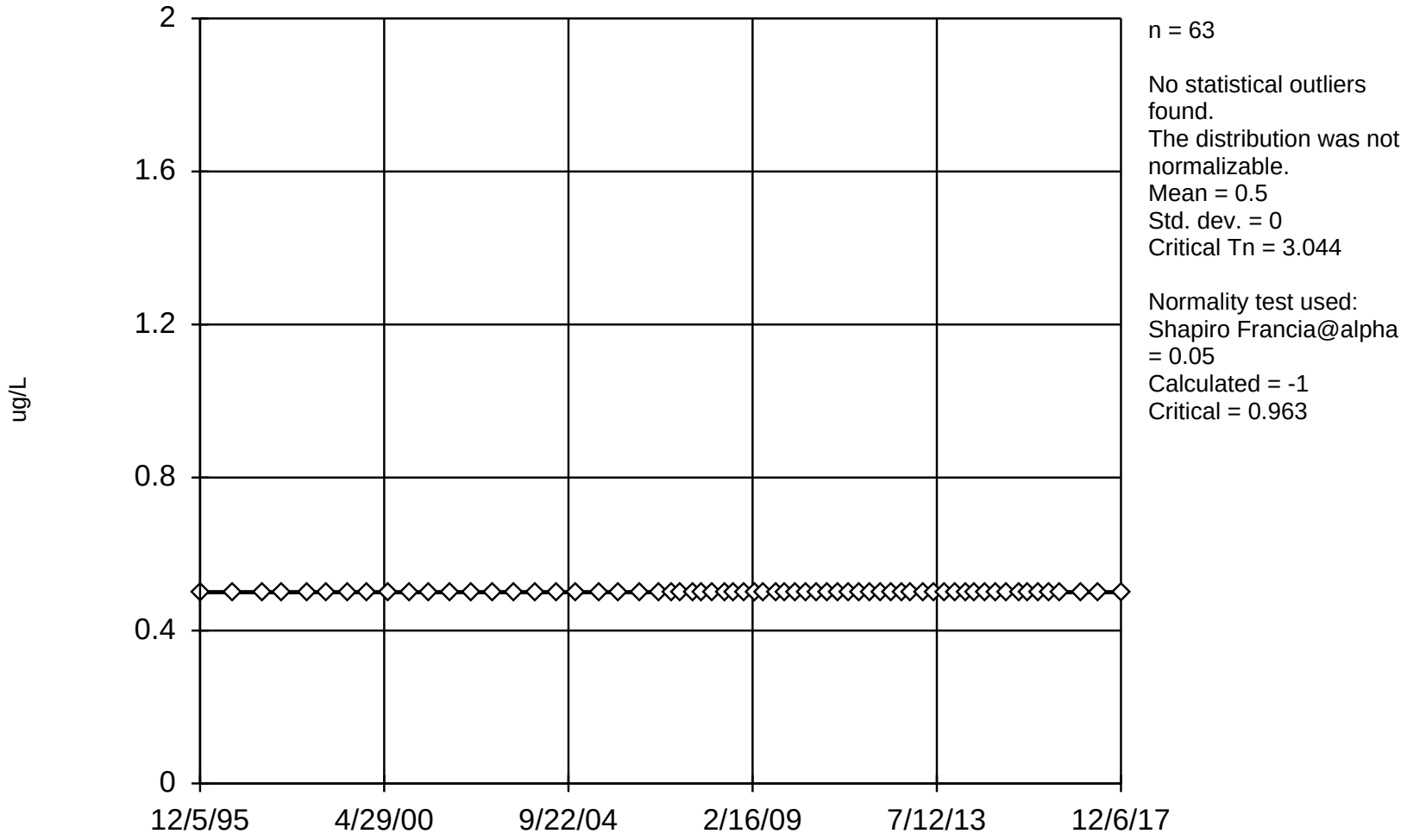
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9443
Critical = 0.966

Constituent: TCE Analysis Run 4/19/2018 10:31 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-5D



n = 63

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 3.044

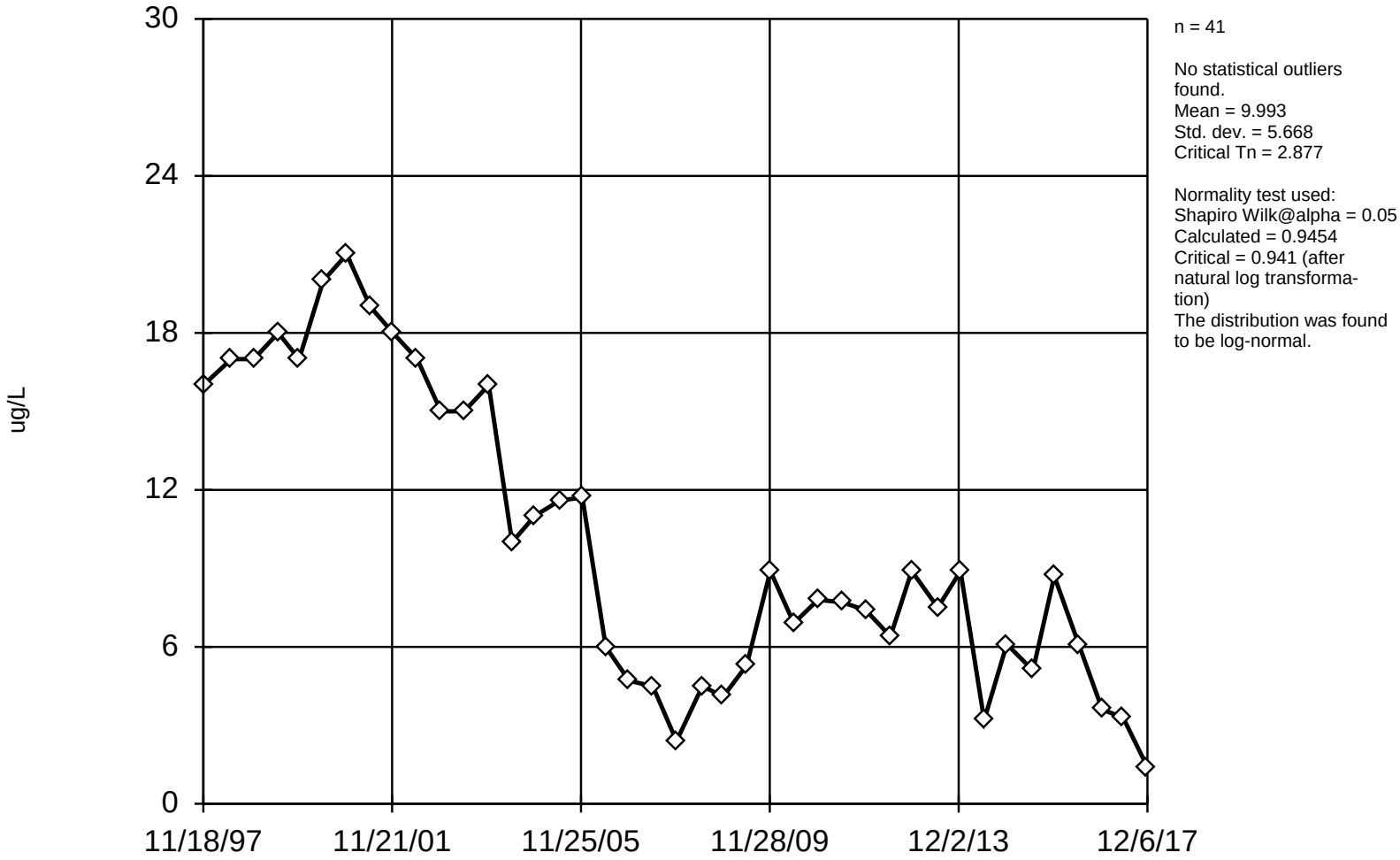
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = -1
Critical = 0.963

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-5I



n = 41

No statistical outliers found.
Mean = 9.993
Std. dev. = 5.668
Critical Tn = 2.877

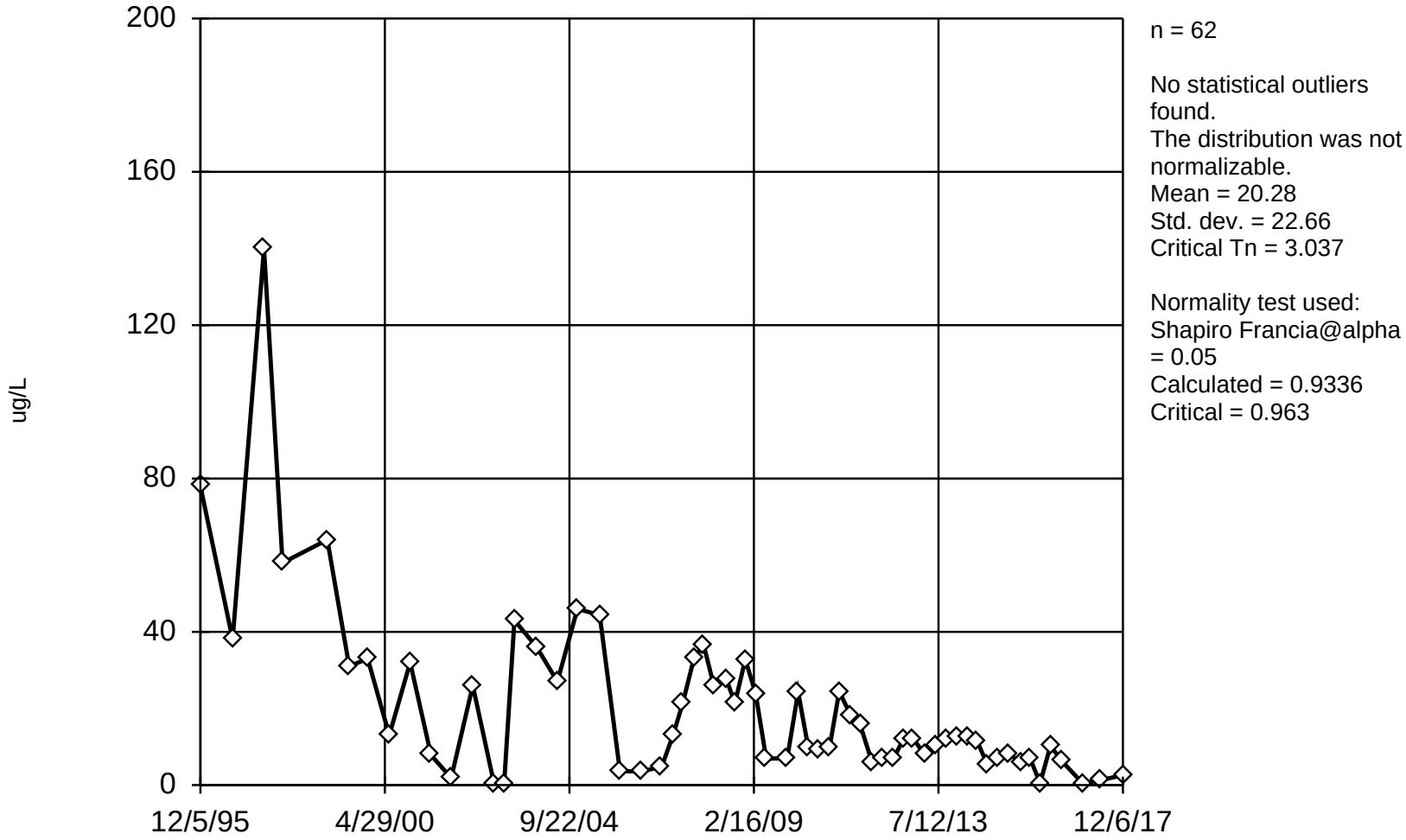
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.9454
Critical = 0.941 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-6I



n = 62

No statistical outliers found.
The distribution was not normalizable.
Mean = 20.28
Std. dev. = 22.66
Critical Tn = 3.037

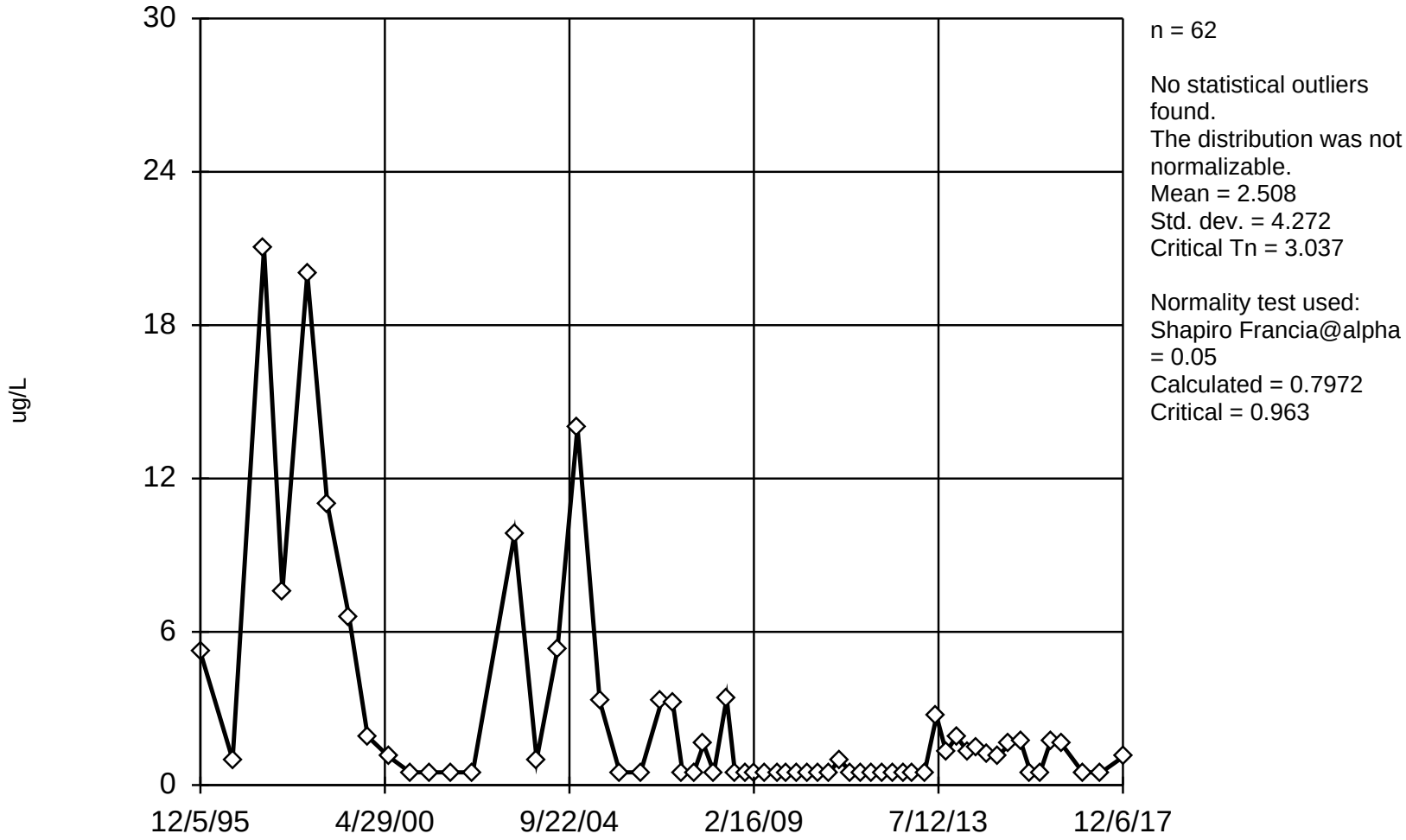
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9336
Critical = 0.963

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-6S



n = 62

No statistical outliers found.
The distribution was not normalizable.
Mean = 2.508
Std. dev. = 4.272
Critical Tn = 3.037

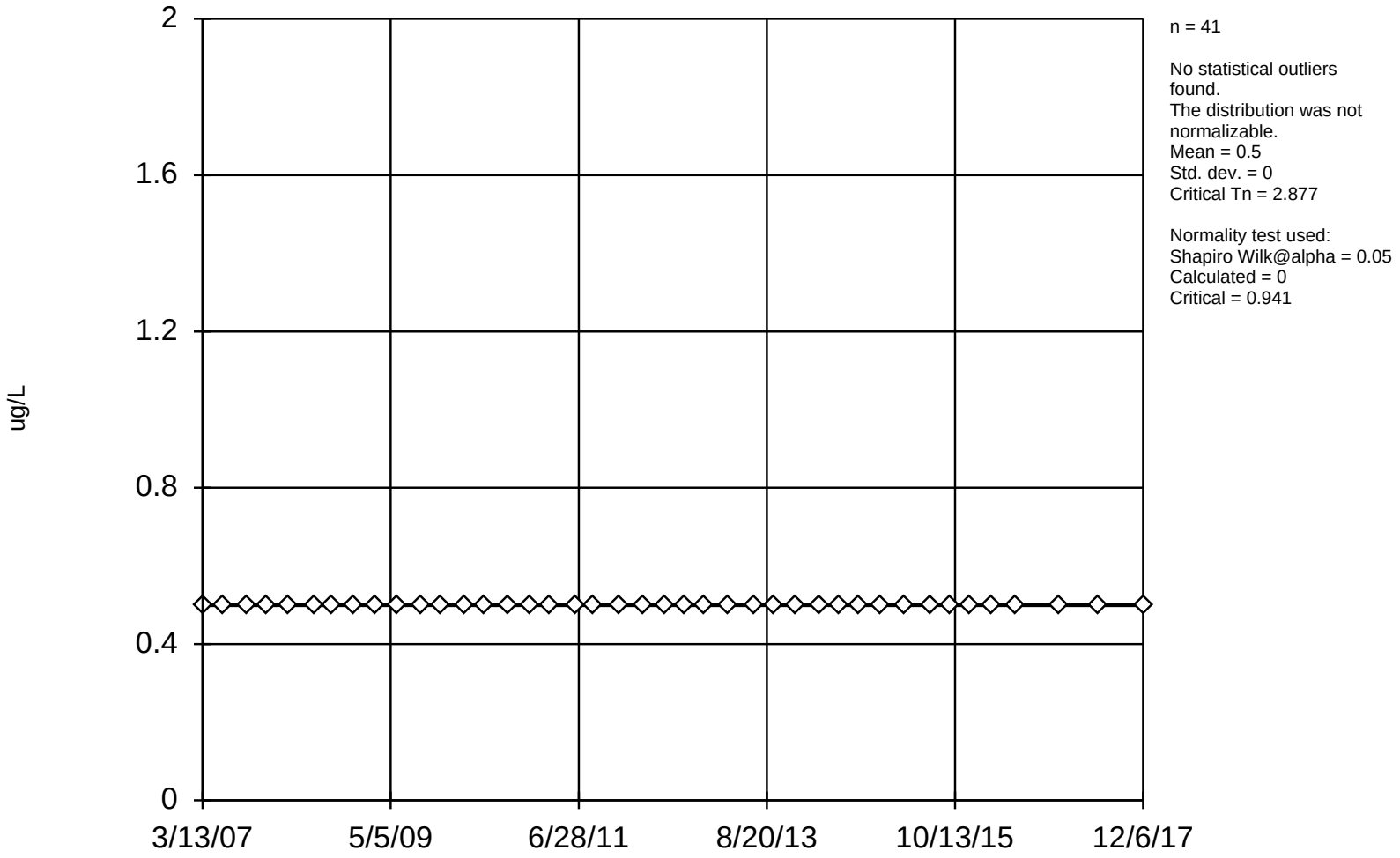
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.7972
Critical = 0.963

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-8D



n = 41

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.877

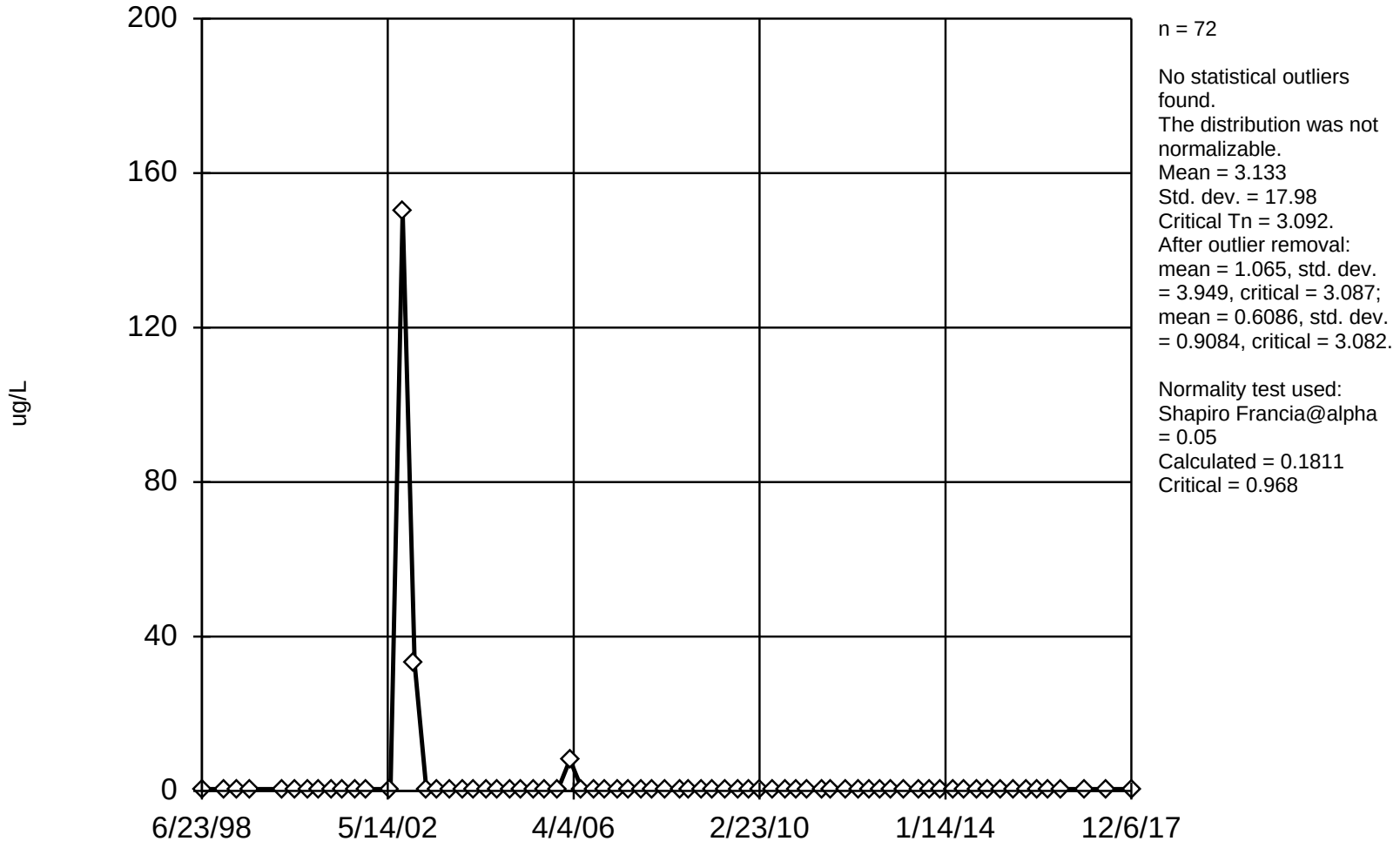
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.941

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-8I



n = 72

No statistical outliers found.
The distribution was not normalizable.
Mean = 3.133
Std. dev. = 17.98
Critical Tn = 3.092.
After outlier removal:
mean = 1.065, std. dev. = 3.949, critical = 3.087;
mean = 0.6086, std. dev. = 0.9084, critical = 3.082.

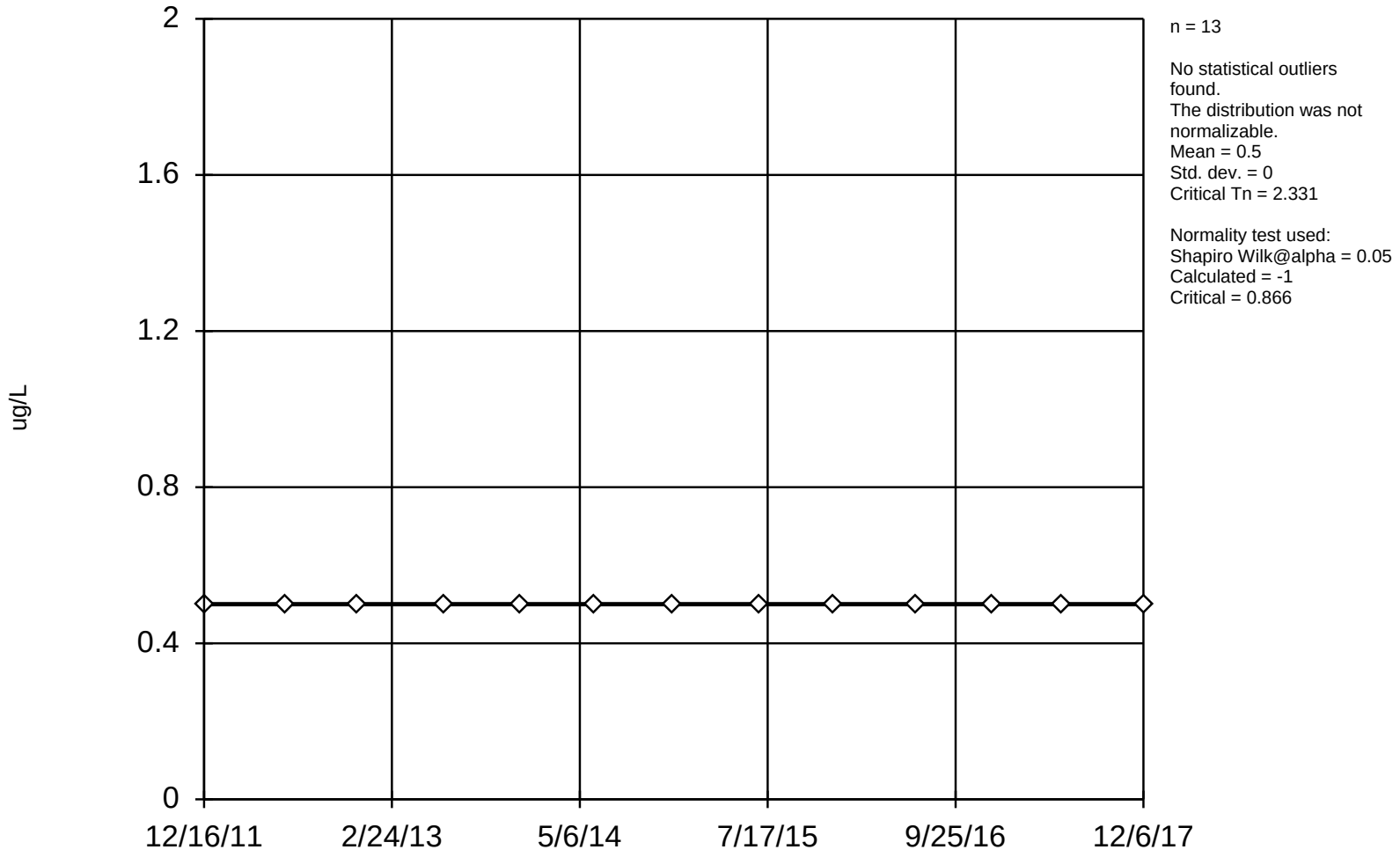
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.1811
Critical = 0.968

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-8S



n = 13

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.331

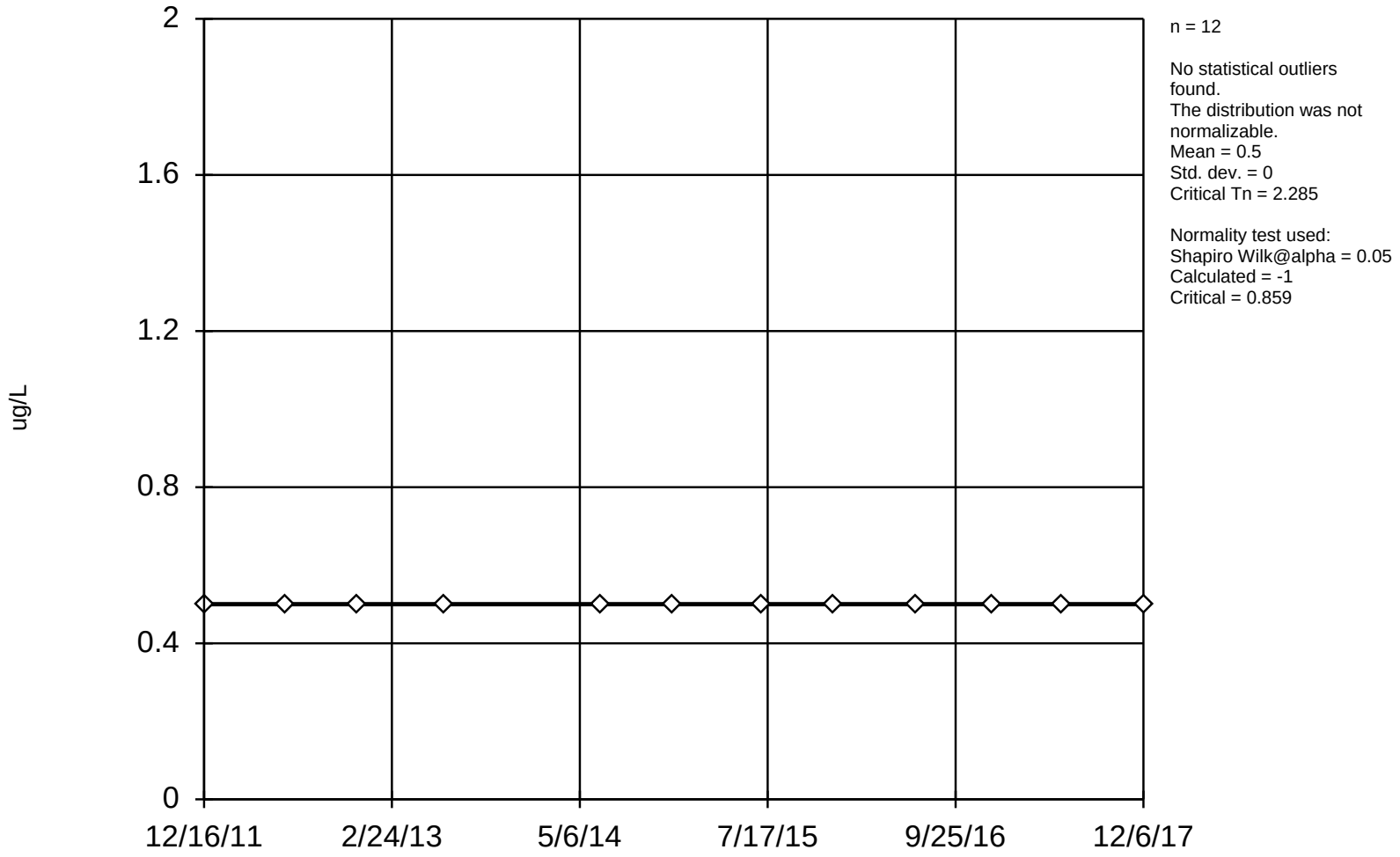
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = -1
Critical = 0.866

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-9S



n = 12

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.285

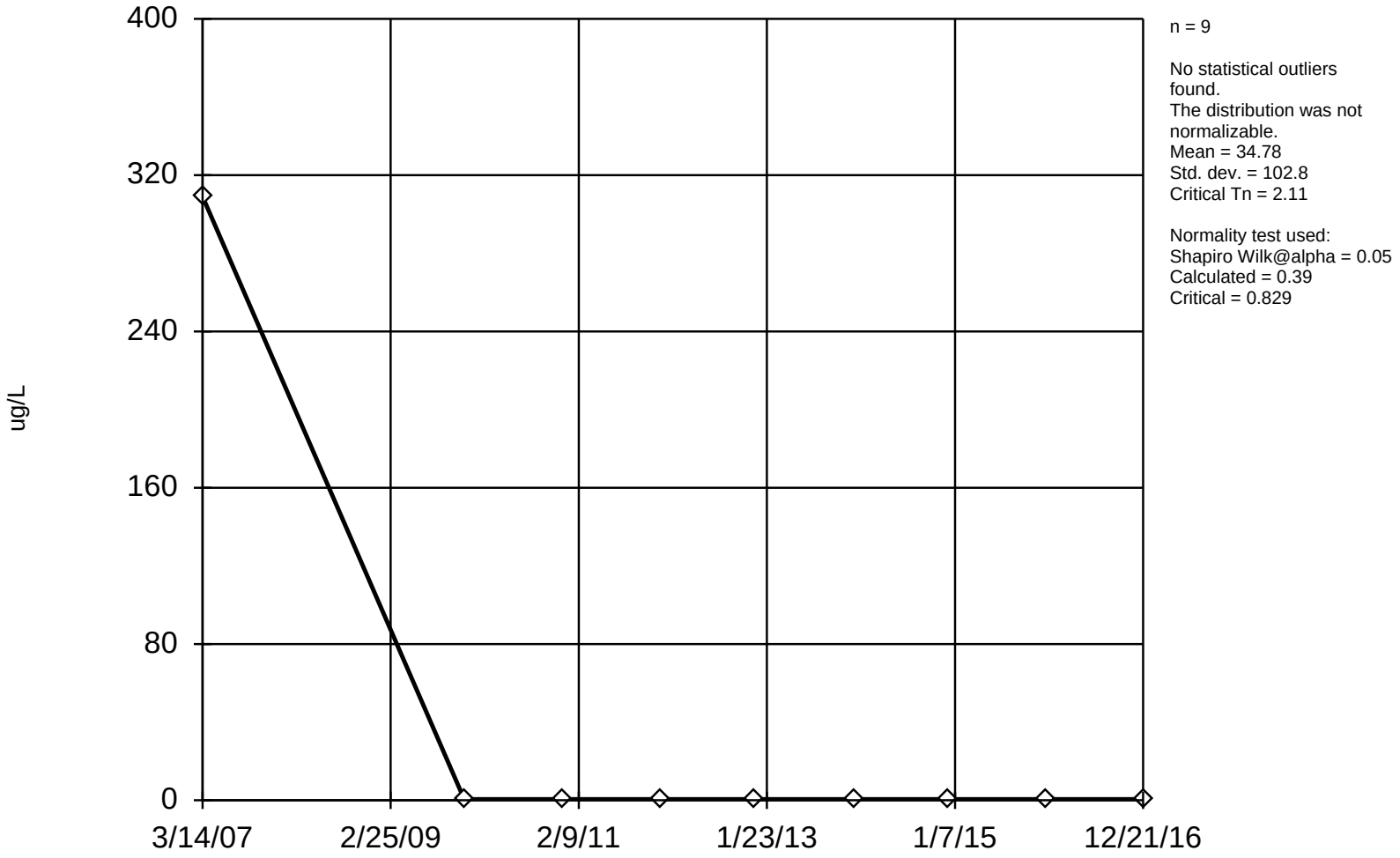
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = -1
Critical = 0.859

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-10S



n = 9

No statistical outliers found.
The distribution was not normalizable.
Mean = 34.78
Std. dev. = 102.8
Critical Tn = 2.11

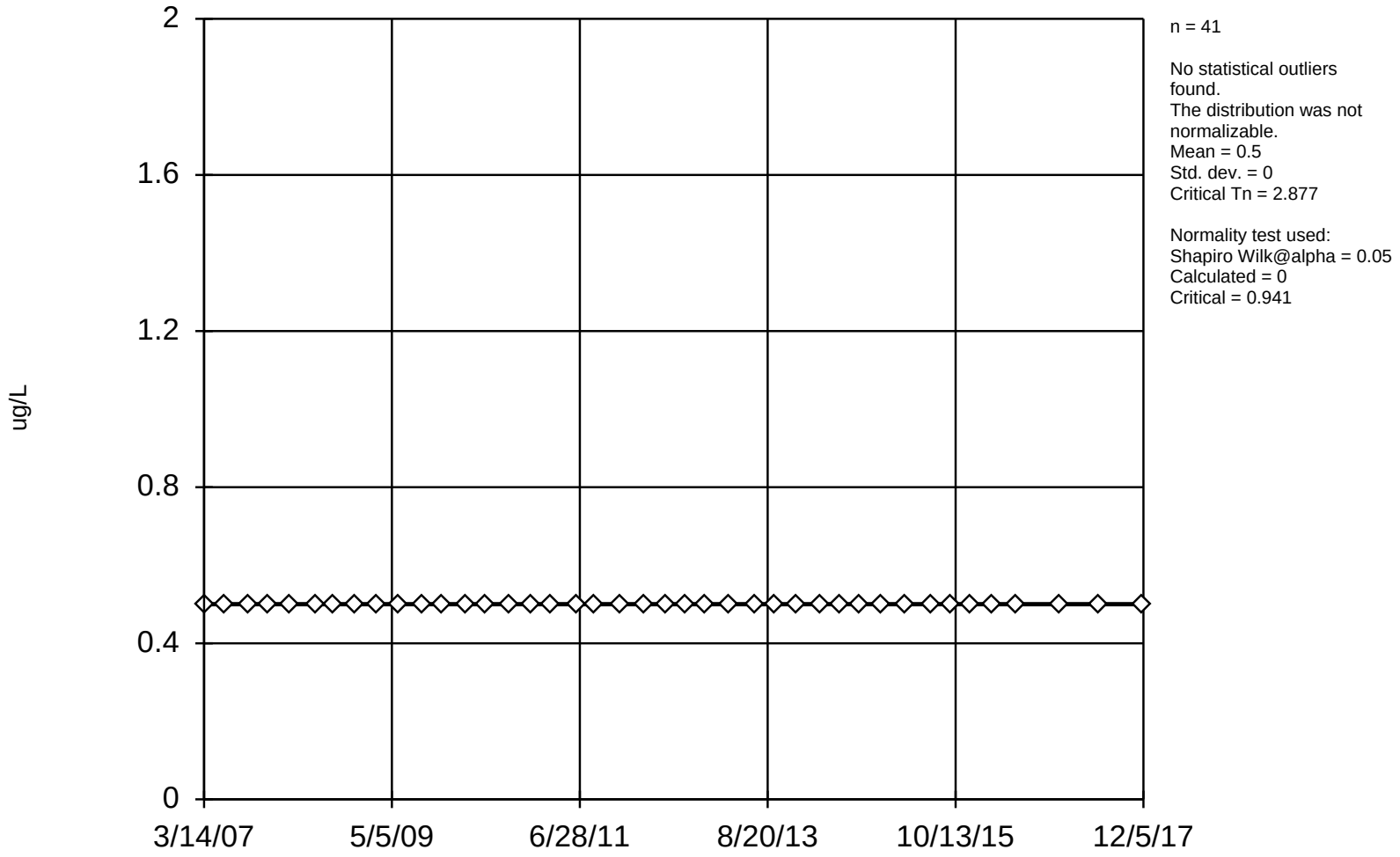
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.39
Critical = 0.829

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-13D



n = 41

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.877

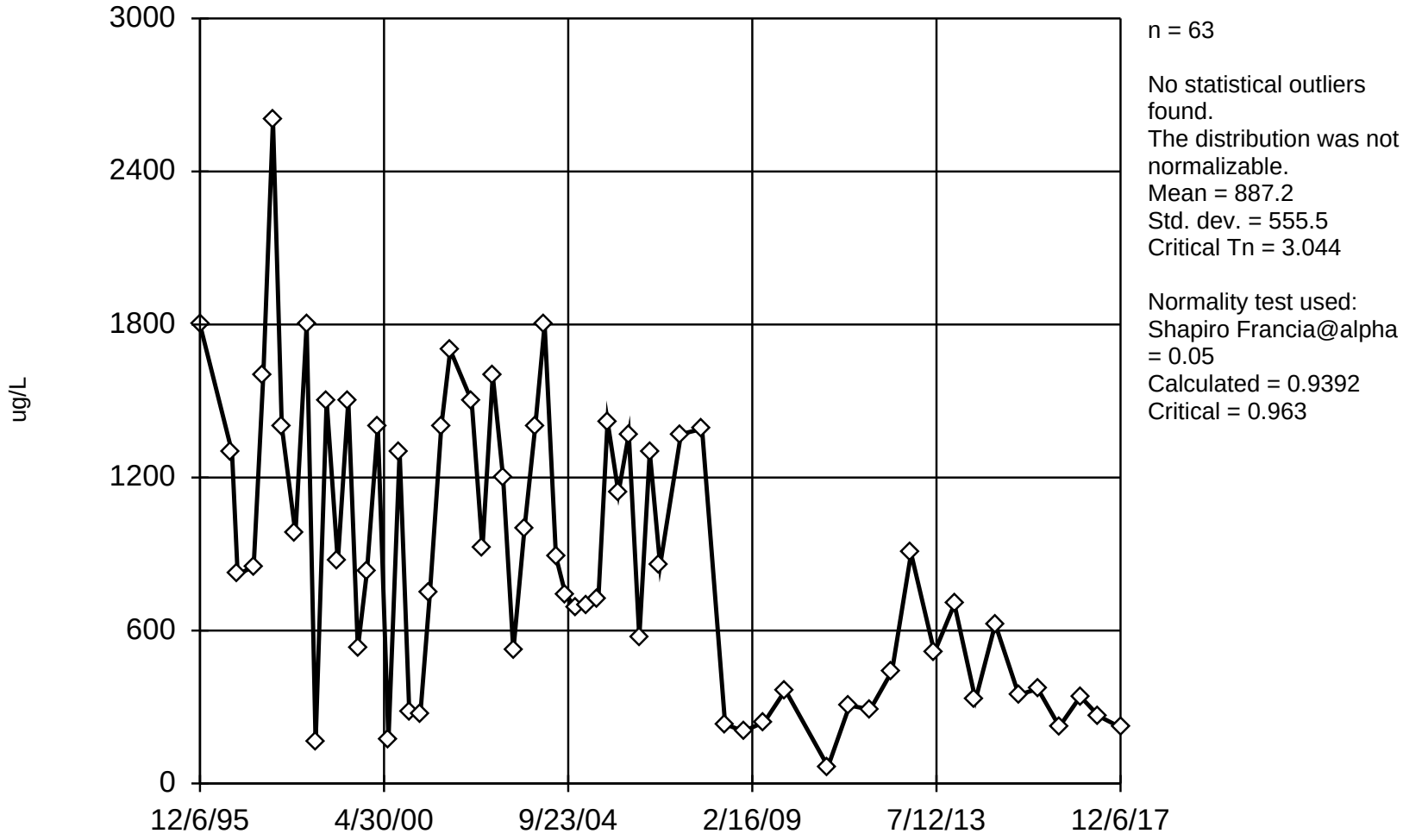
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.941

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-16



n = 63

No statistical outliers found.
The distribution was not normalizable.
Mean = 887.2
Std. dev. = 555.5
Critical Tn = 3.044

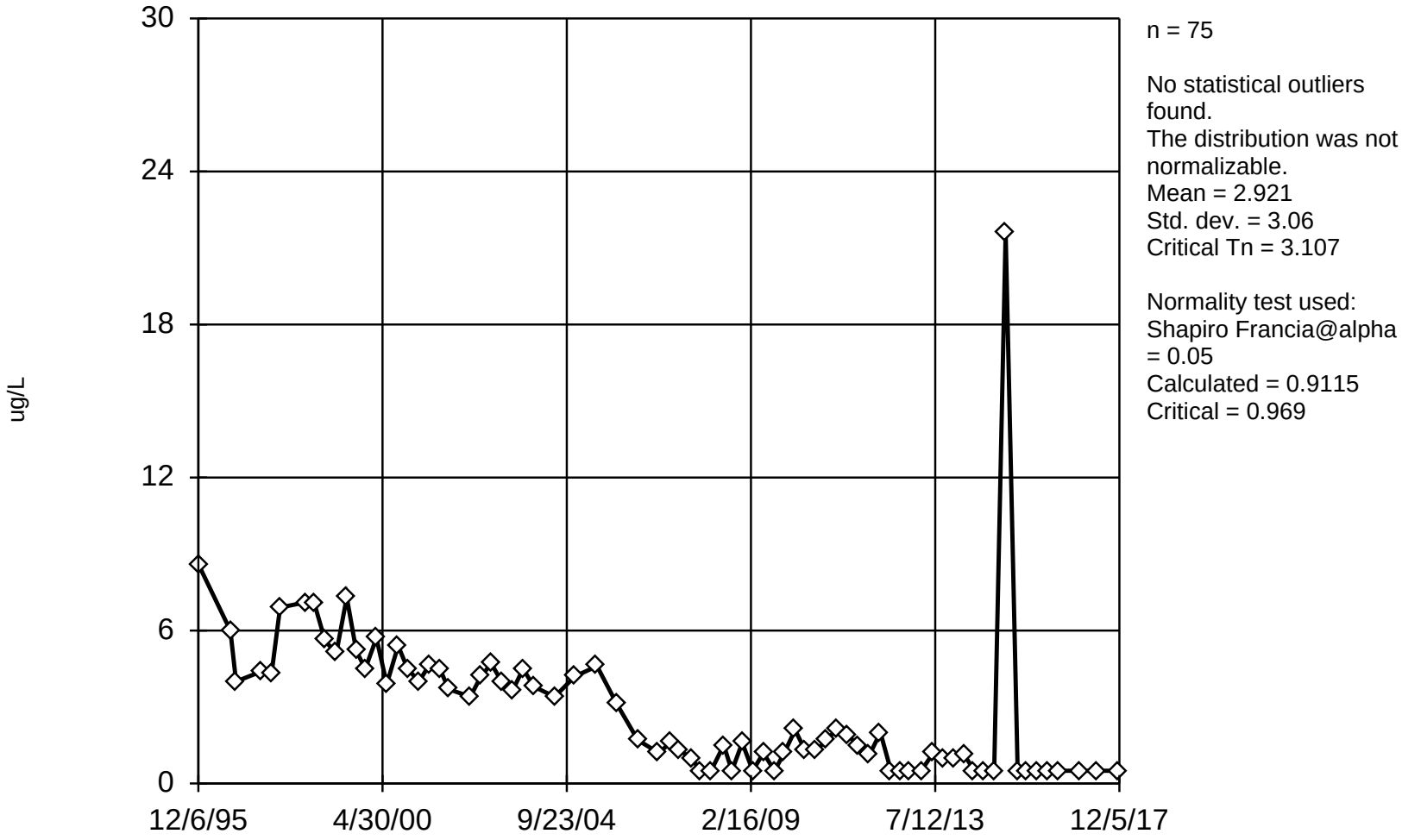
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9392
Critical = 0.963

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-18



n = 75

No statistical outliers found.
The distribution was not normalizable.
Mean = 2.921
Std. dev. = 3.06
Critical Tn = 3.107

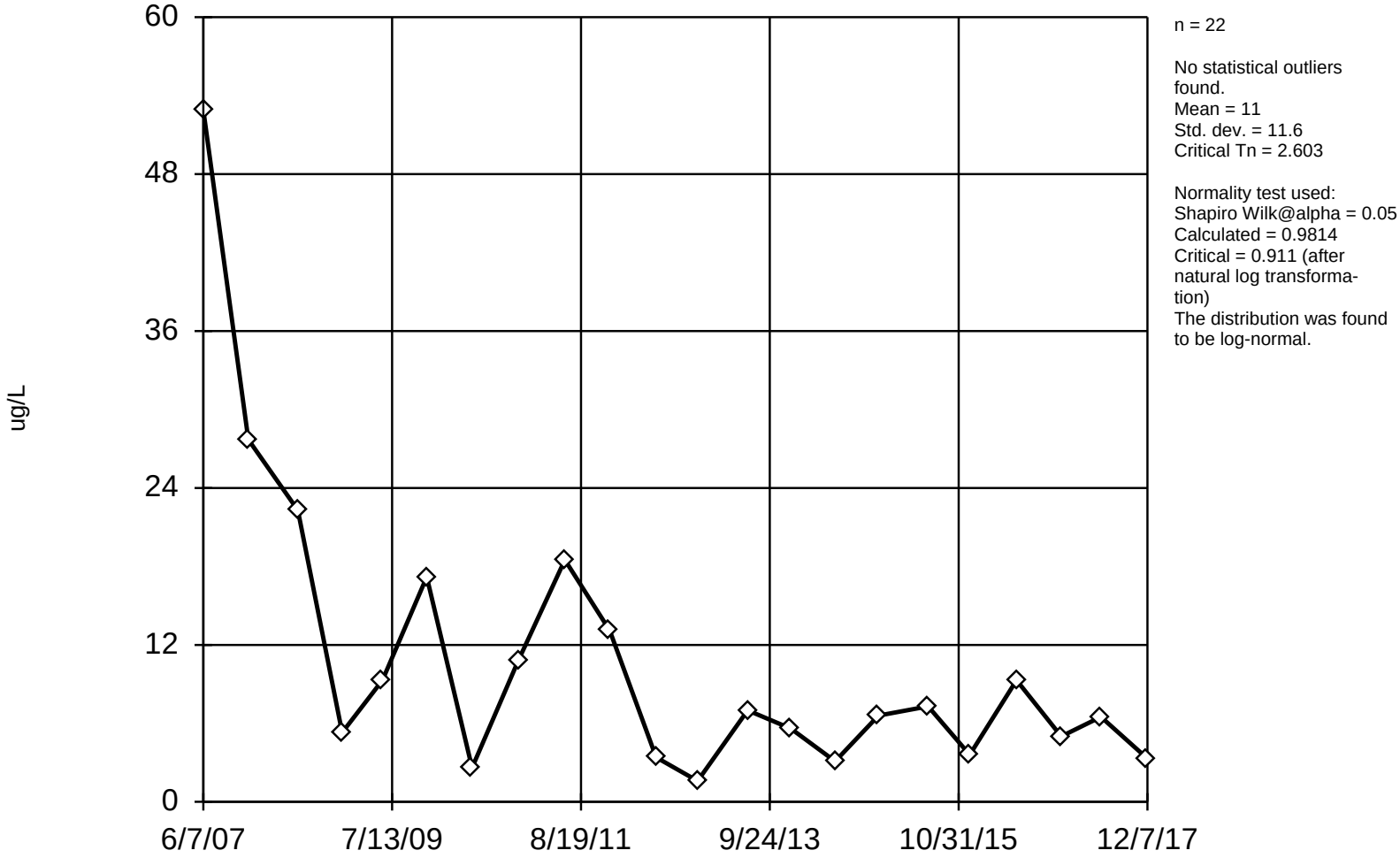
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9115
Critical = 0.969

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

B-23I/D



n = 22

No statistical outliers found.
Mean = 11
Std. dev. = 11.6
Critical Tn = 2.603

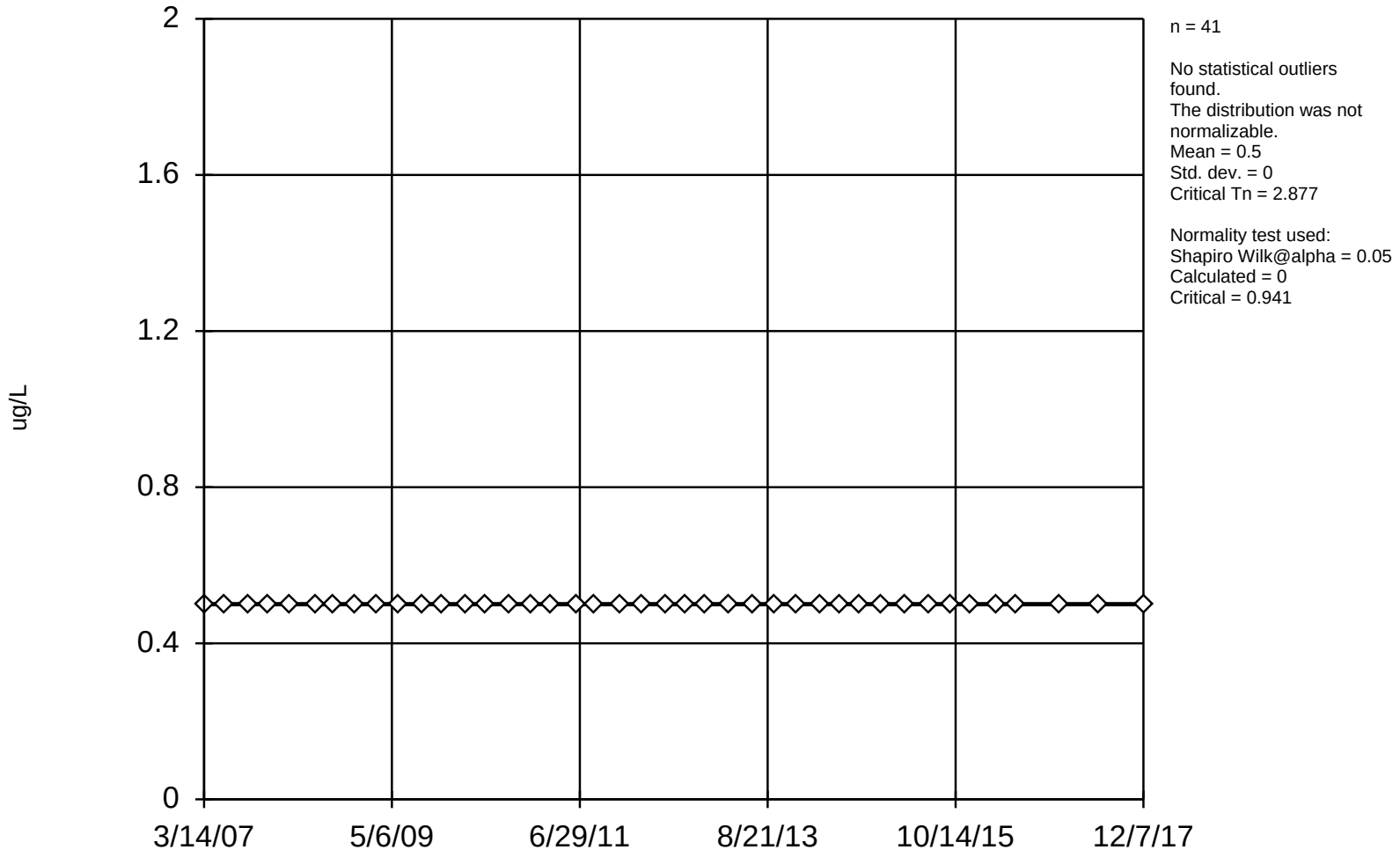
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.9814
Critical = 0.911 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-1D



n = 41

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.877

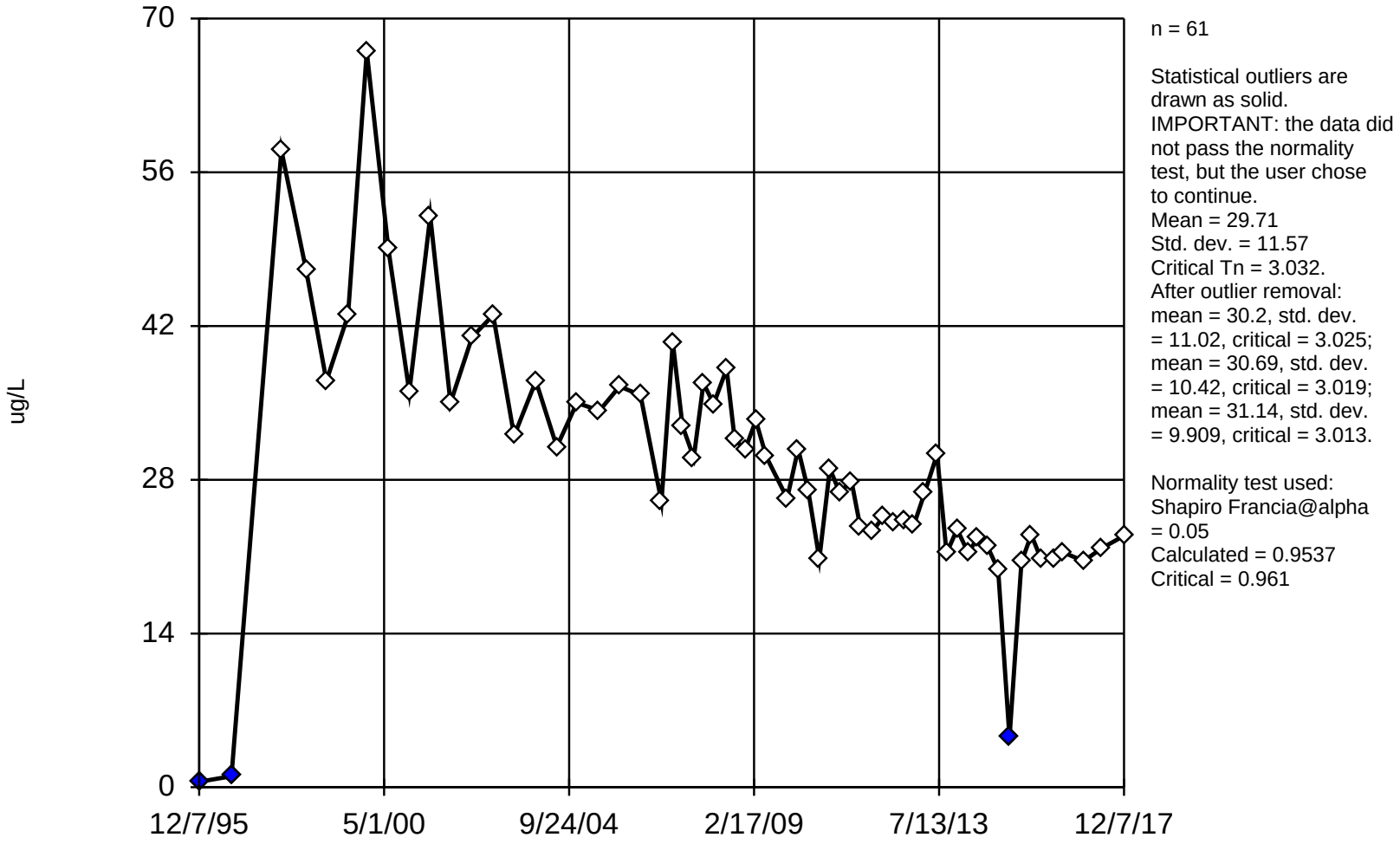
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.941

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-1I



n = 61

Statistical outliers are drawn as solid.
IMPORTANT: the data did not pass the normality test, but the user chose to continue.
Mean = 29.71
Std. dev. = 11.57
Critical Tn = 3.032.
After outlier removal: mean = 30.2, std. dev. = 11.02, critical = 3.025; mean = 30.69, std. dev. = 10.42, critical = 3.019; mean = 31.14, std. dev. = 9.909, critical = 3.013.

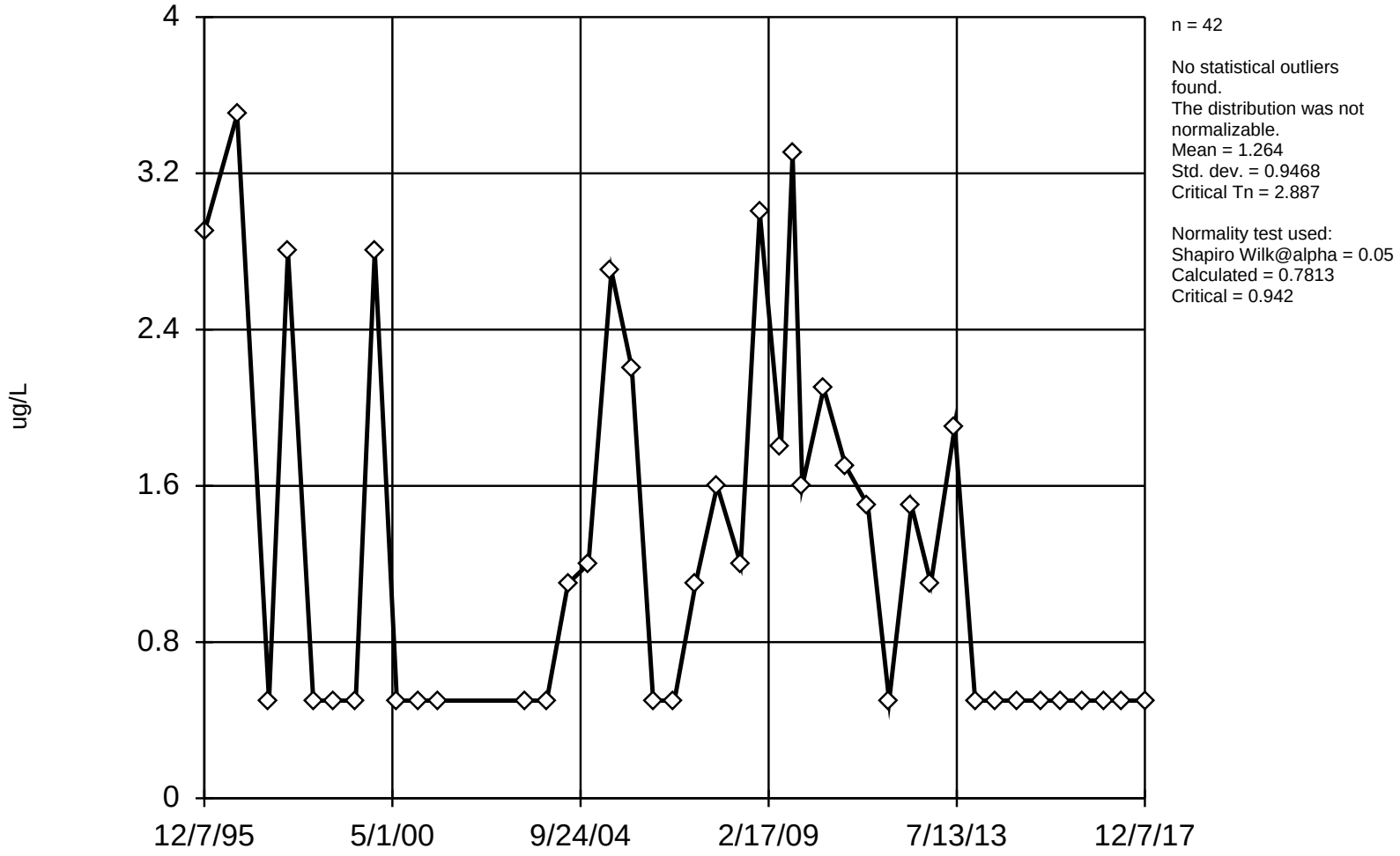
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9537
Critical = 0.961

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-1S



n = 42

No statistical outliers found.
The distribution was not normalizable.
Mean = 1.264
Std. dev. = 0.9468
Critical Tn = 2.887

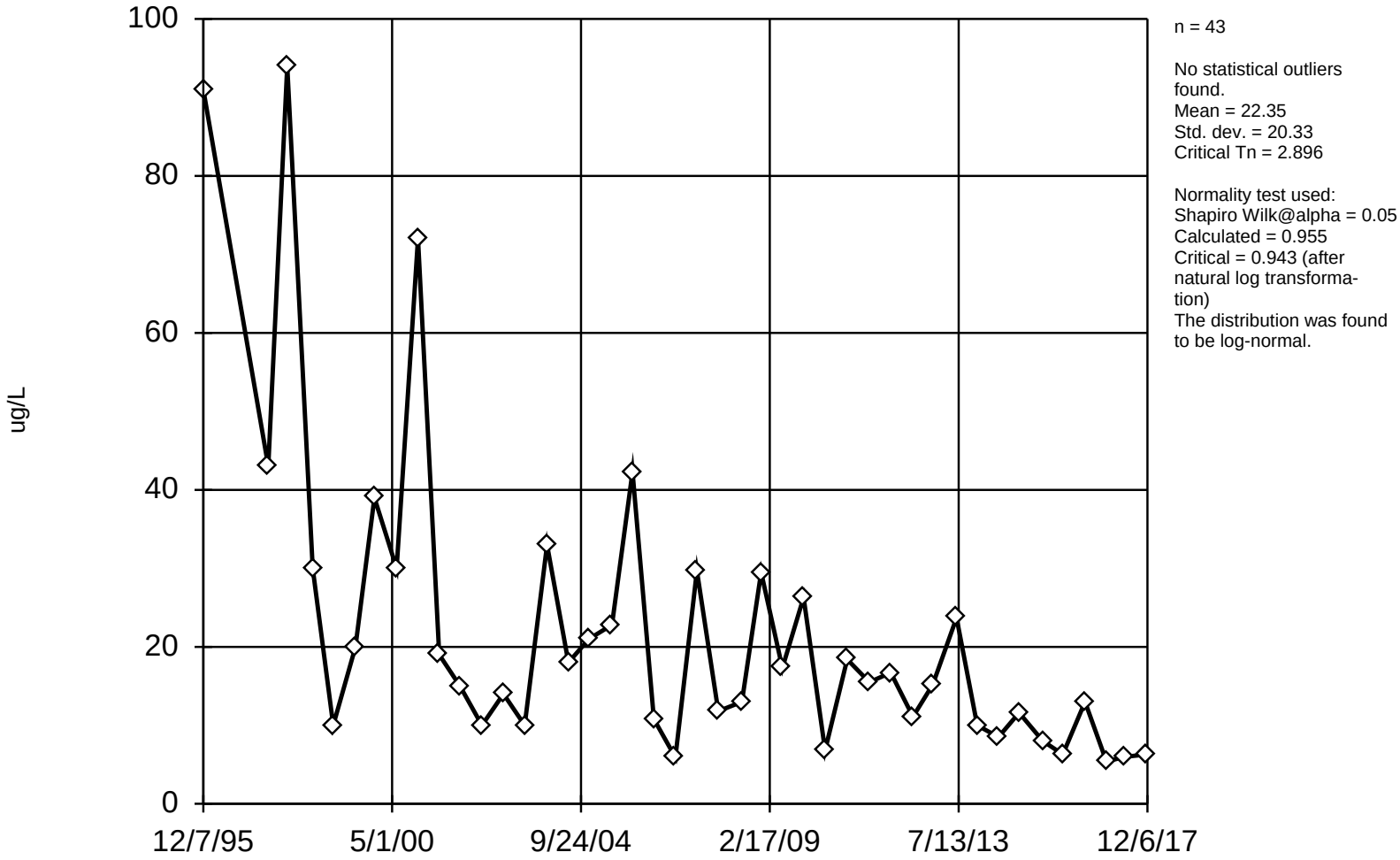
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.7813
Critical = 0.942

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-2D



n = 43

No statistical outliers found.
Mean = 22.35
Std. dev. = 20.33
Critical Tn = 2.896

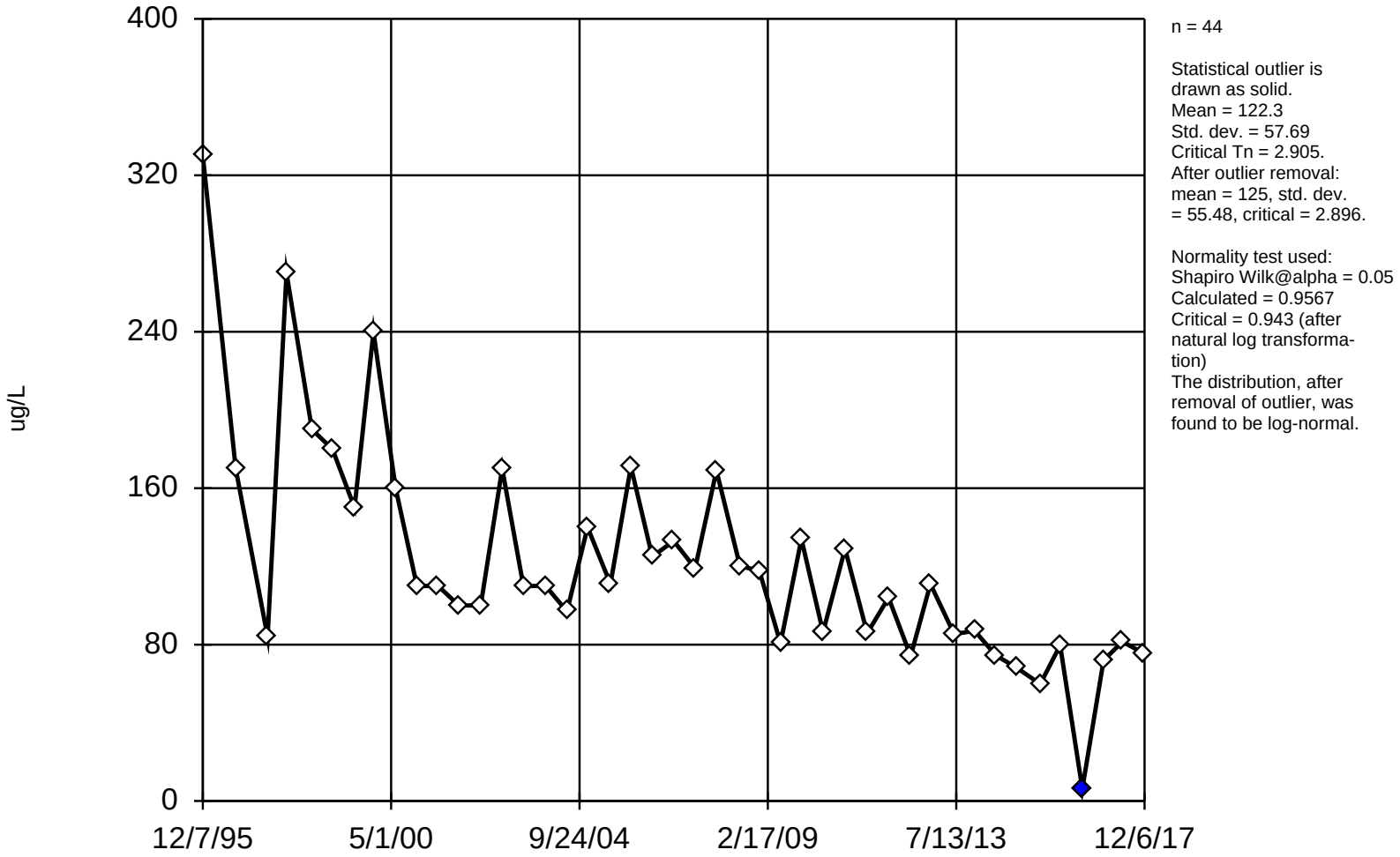
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.955
Critical = 0.943 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-2I



n = 44

Statistical outlier is drawn as solid.
Mean = 122.3
Std. dev. = 57.69
Critical Tn = 2.905.
After outlier removal: mean = 125, std. dev. = 55.48, critical = 2.896.

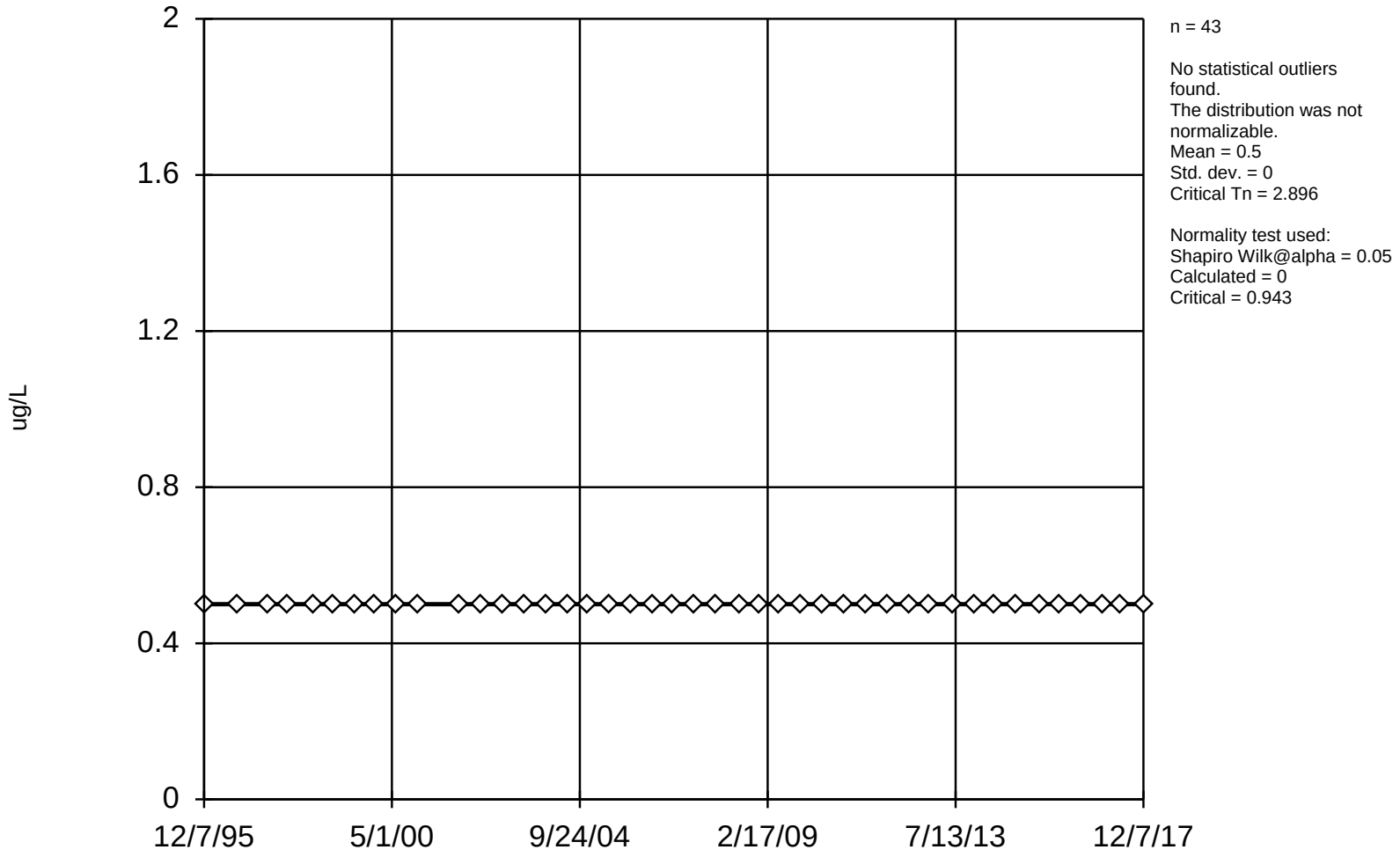
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.9567
Critical = 0.943 (after natural log transformation)
The distribution, after removal of outlier, was found to be log-normal.

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-2S



n = 43

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.896

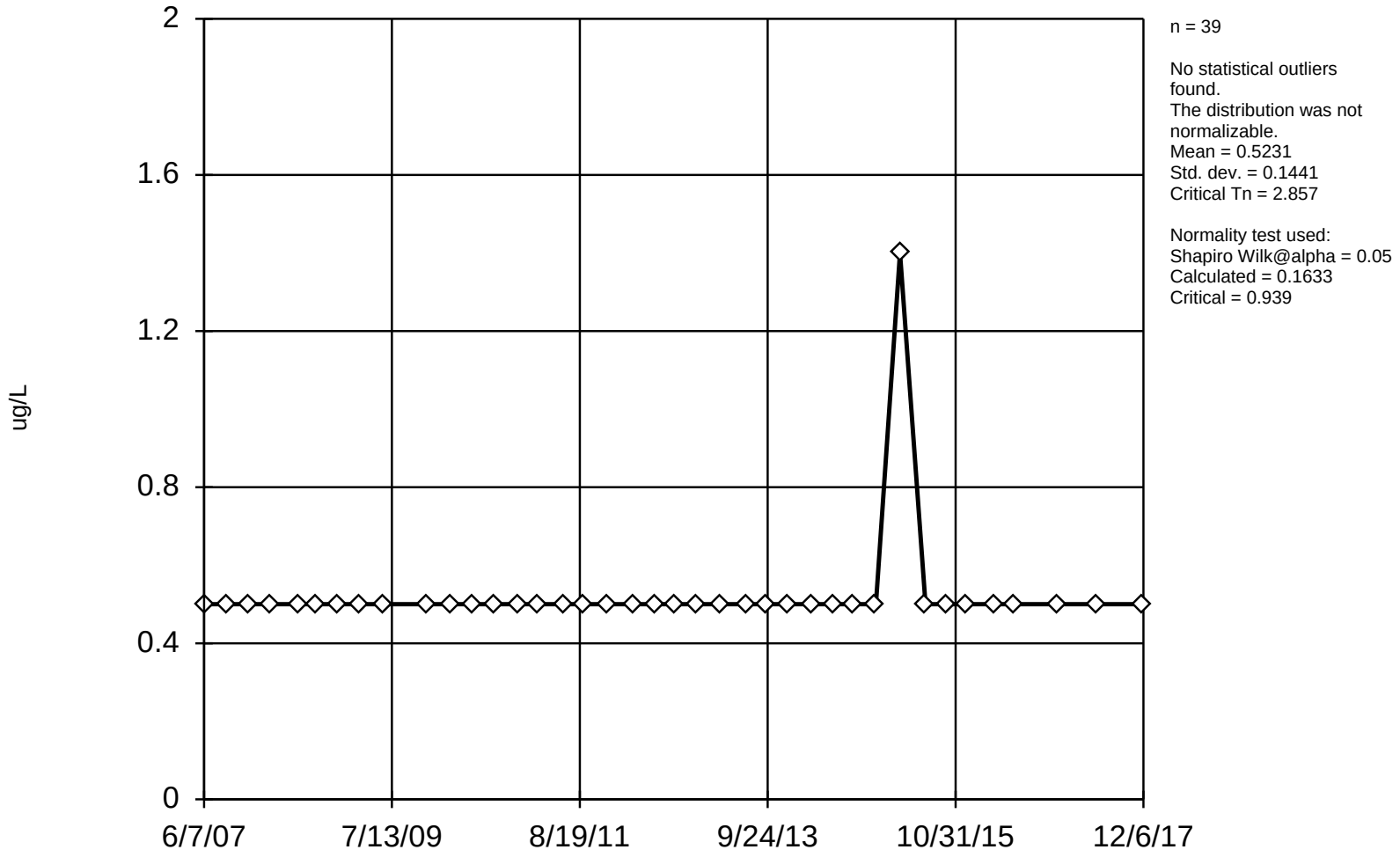
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.943

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-3D



n = 39

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5231
Std. dev. = 0.1441
Critical Tn = 2.857

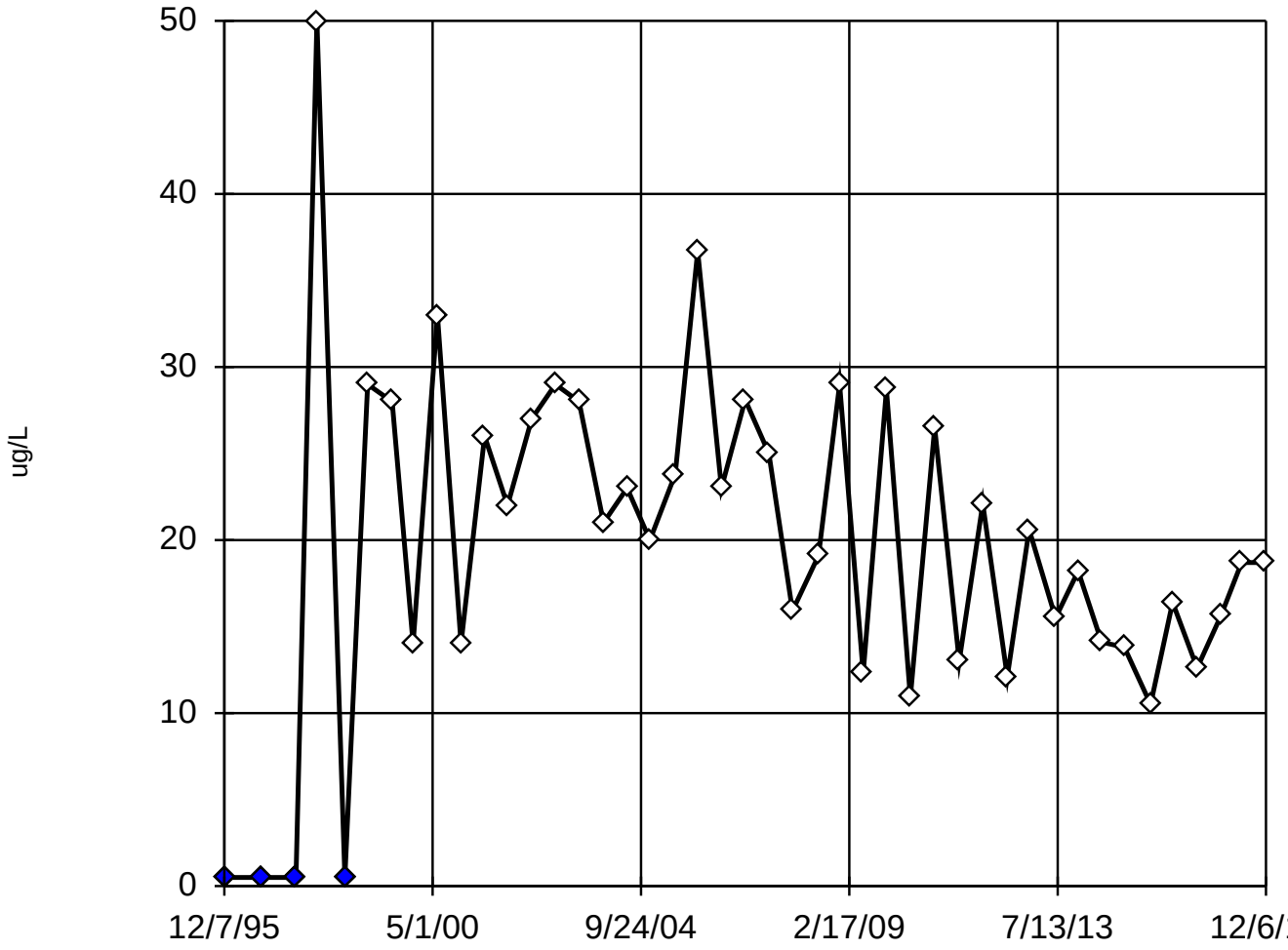
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.1633
Critical = 0.939

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-3I



n = 44

Statistical outliers are drawn as solid.
Mean = 19.7
Std. dev. = 9.874
Critical Tn = 2.905.
After outlier removal: mean = 21.62, std. dev. = 8.118, critical = 2.866.

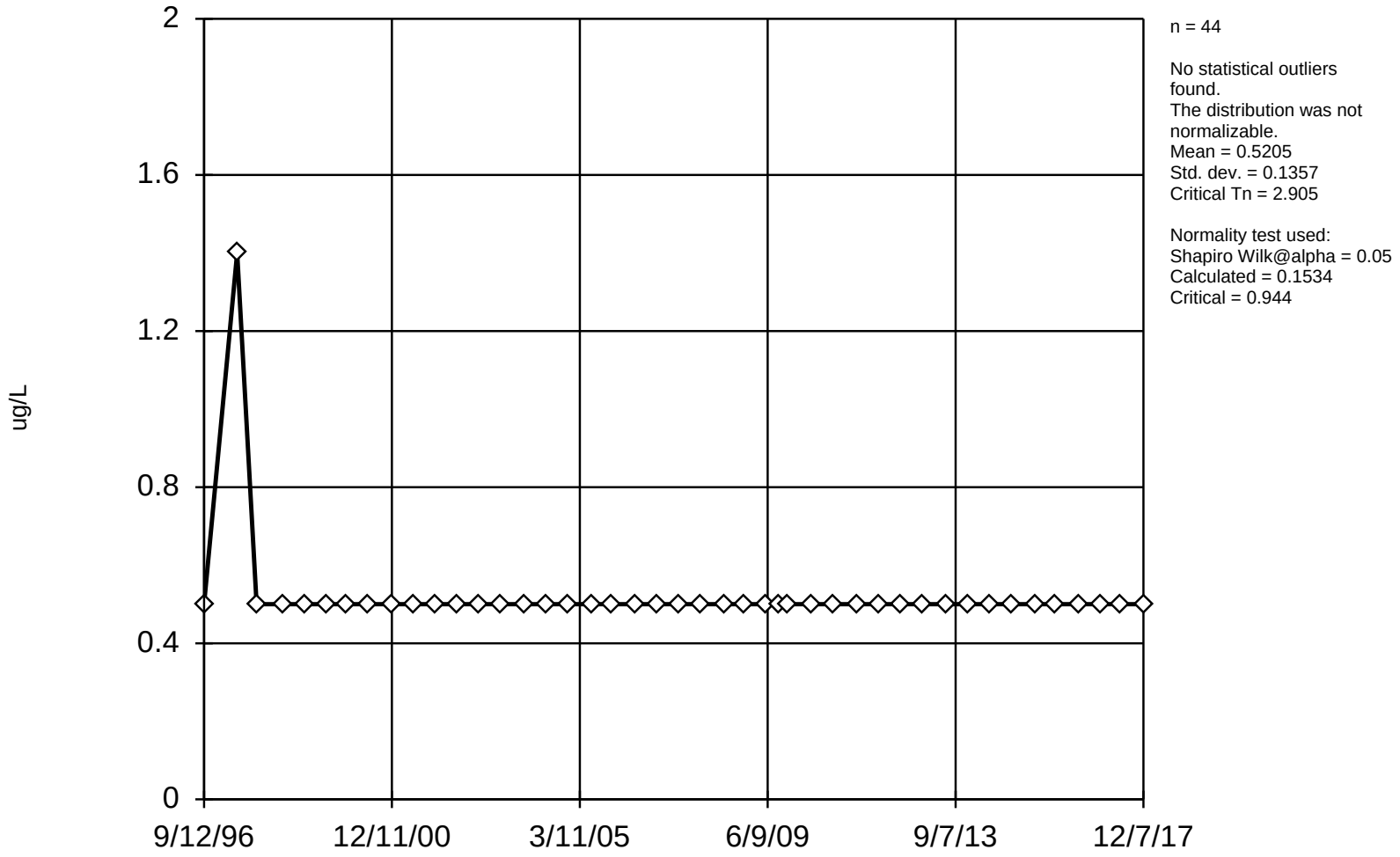
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.9684
Critical = 0.94 (after natural log transformation)
The distribution, after removal of outliers, was found to be log-normal.

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-3S



n = 44

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5205
Std. dev. = 0.1357
Critical Tn = 2.905

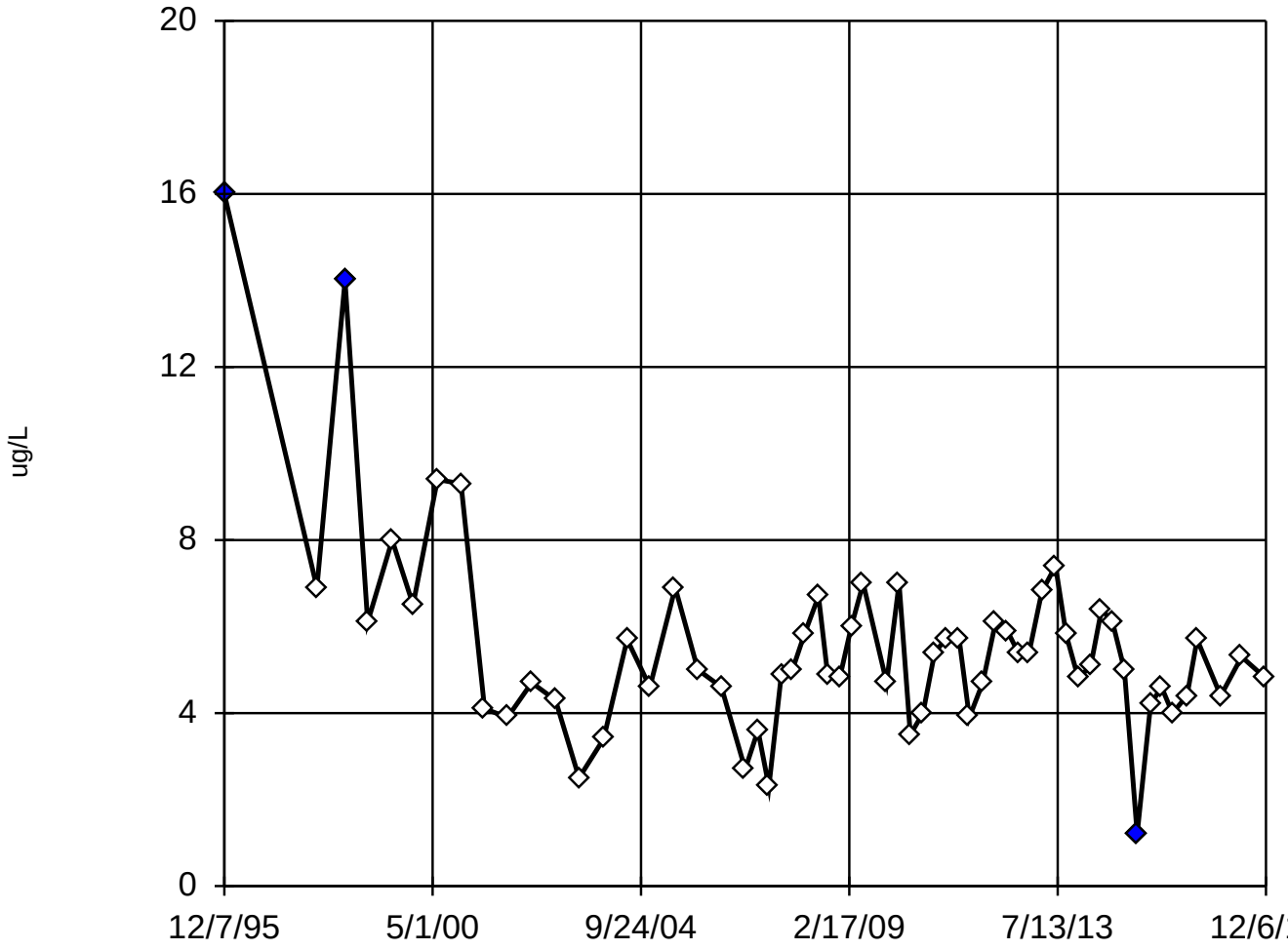
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.1534
Critical = 0.944

Constituent: TCE Analysis Run 4/19/2018 10:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-6



n = 60

Statistical outliers are drawn as solid.
Mean = 5.55
Std. dev. = 2.326
Critical Tn = 3.025.
After outlier removal: mean = 5.624, std. dev. = 2.274, critical = 3.019; mean = 5.445, std. dev. = 1.828, critical = 3.013; mean = 5.295, std. dev. = 1.44, critical = 3.006.

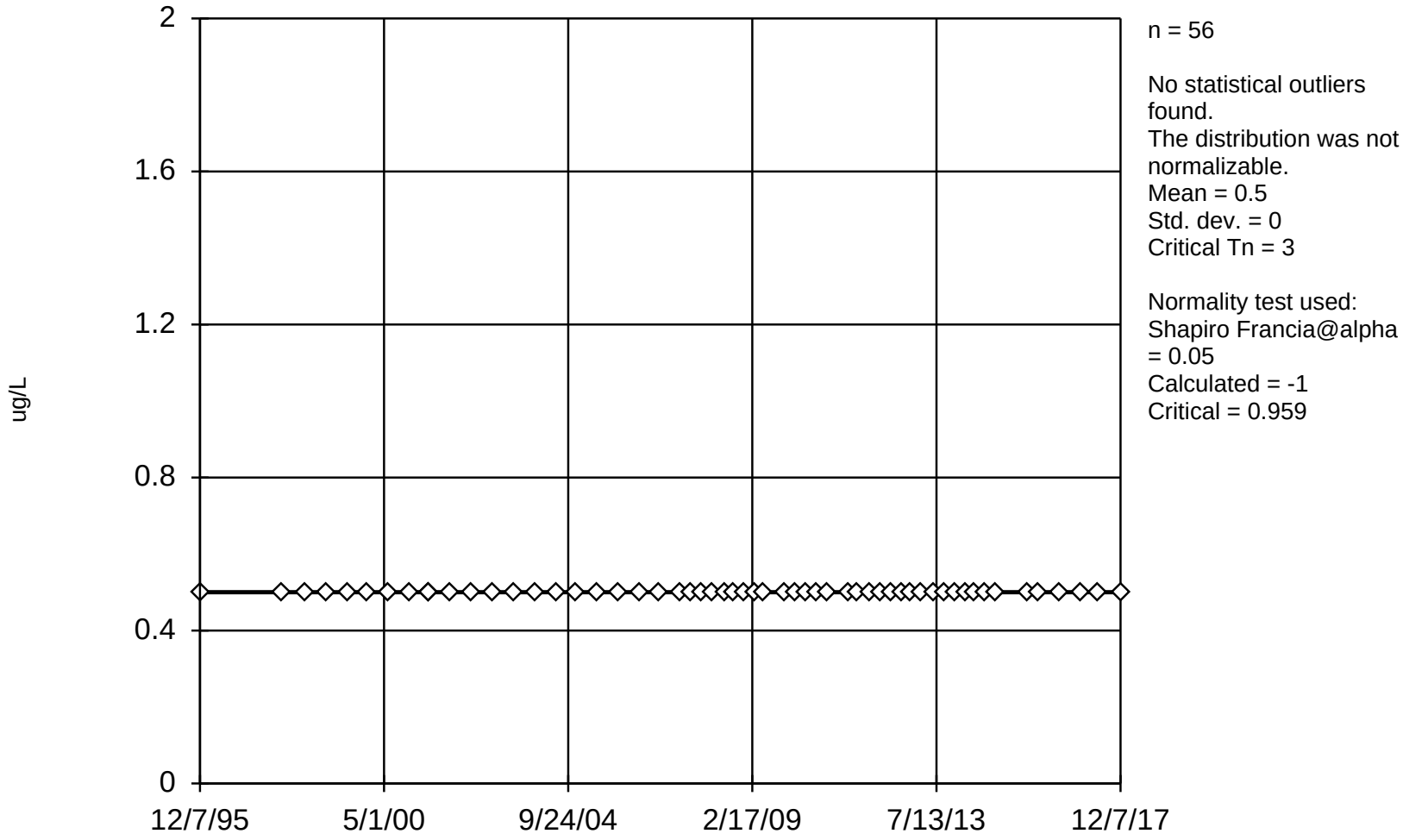
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9633
Critical = 0.961
The distribution, after removal of outliers, was found to be normally distributed.

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-8



n = 56

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 3

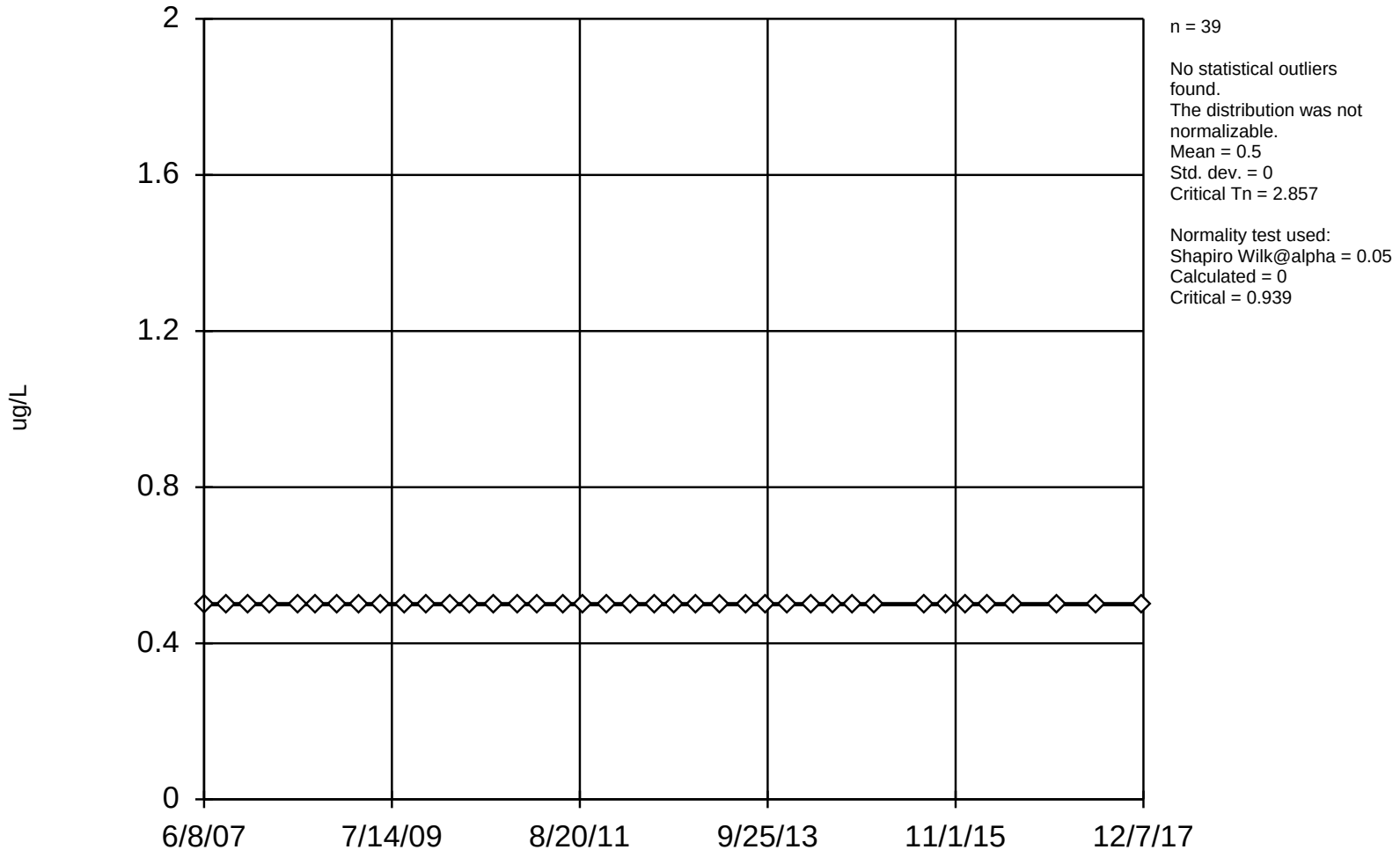
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = -1
Critical = 0.959

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-9



n = 39

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.857

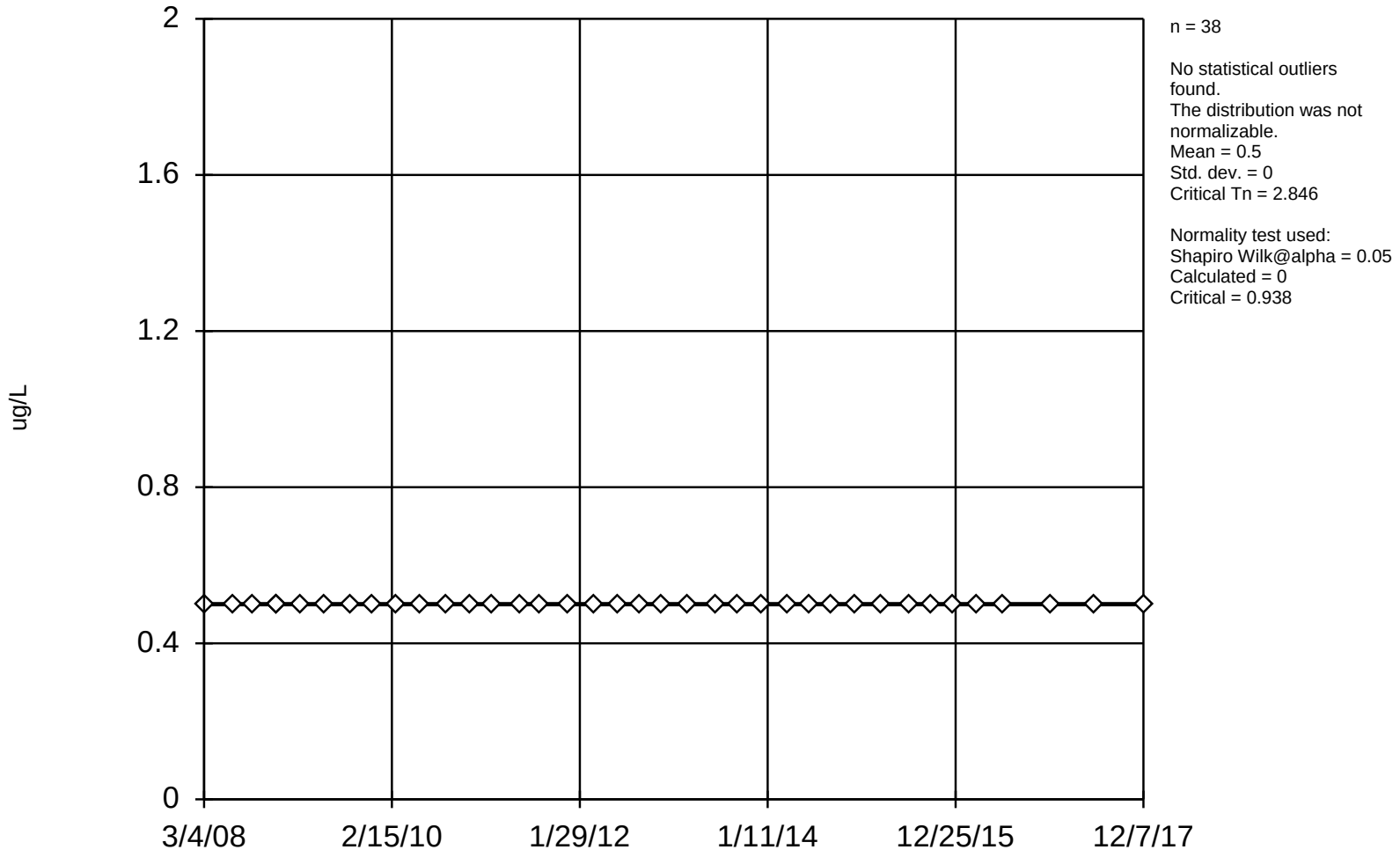
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.939

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-10D



n = 38

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5
Std. dev. = 0
Critical Tn = 2.846

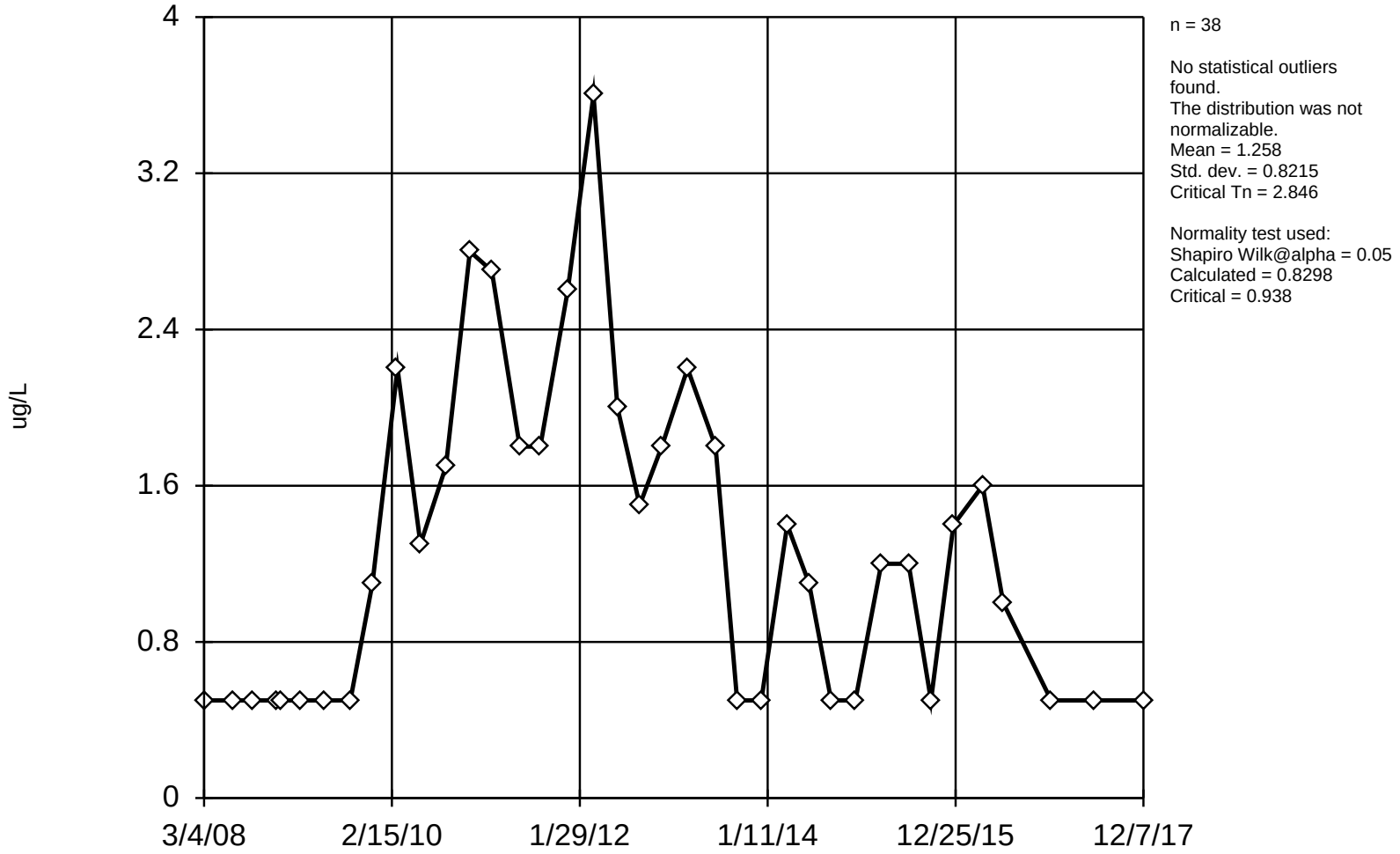
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0
Critical = 0.938

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

C-11I



n = 38

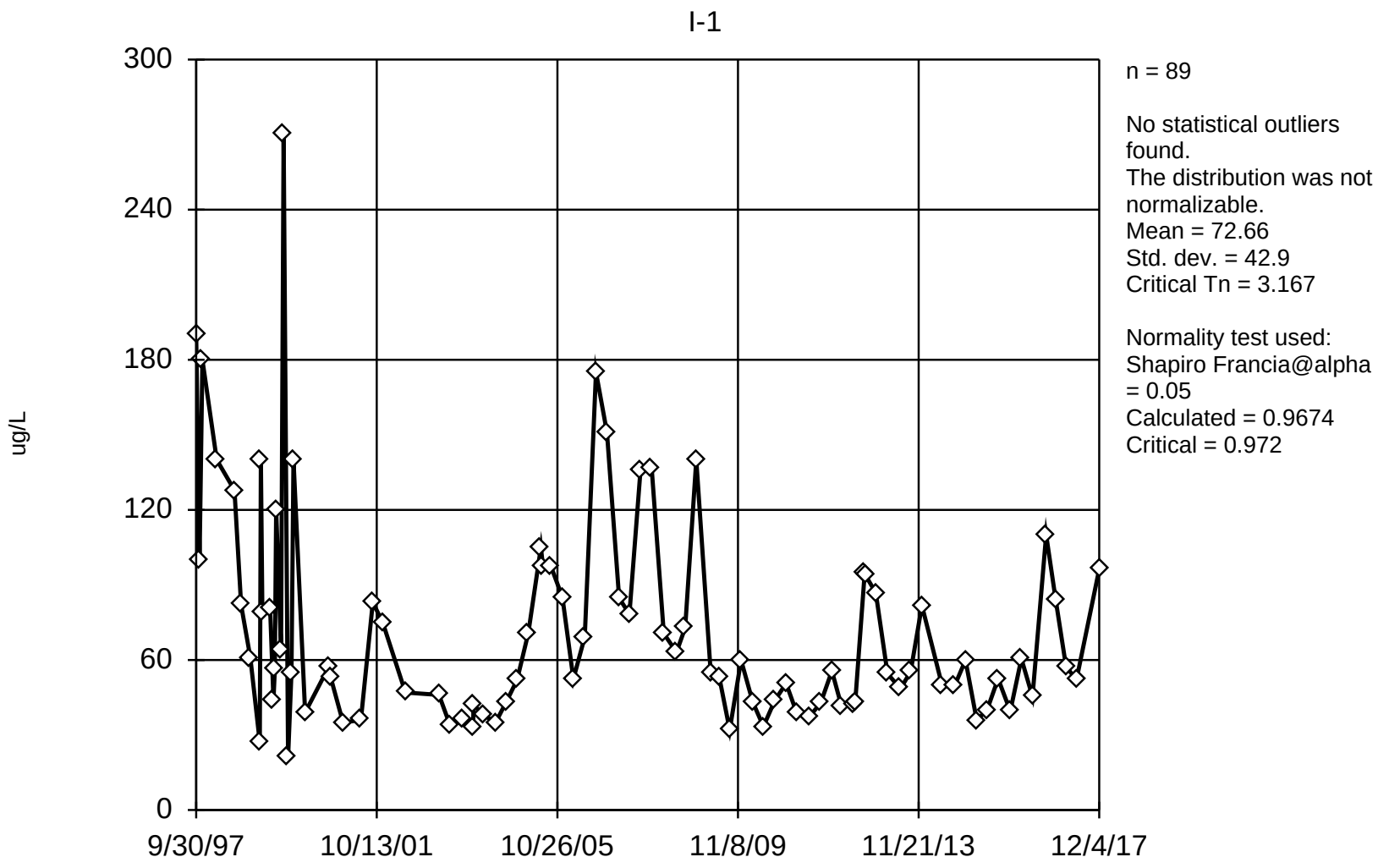
No statistical outliers found.
The distribution was not normalizable.
Mean = 1.258
Std. dev. = 0.8215
Critical Tn = 2.846

Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.8298
Critical = 0.938

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

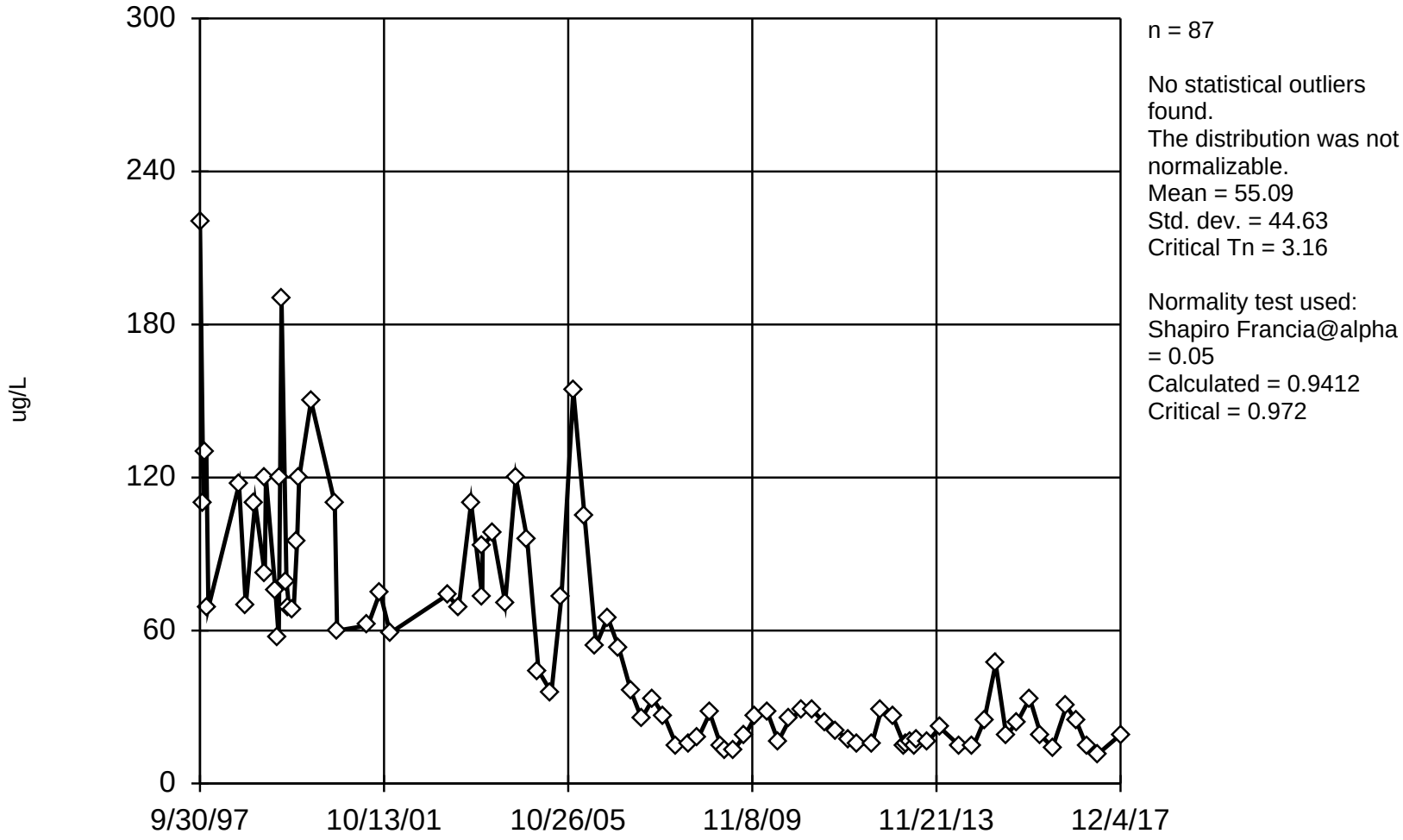


Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

I-2



n = 87

No statistical outliers found.
The distribution was not normalizable.
Mean = 55.09
Std. dev. = 44.63
Critical Tn = 3.16

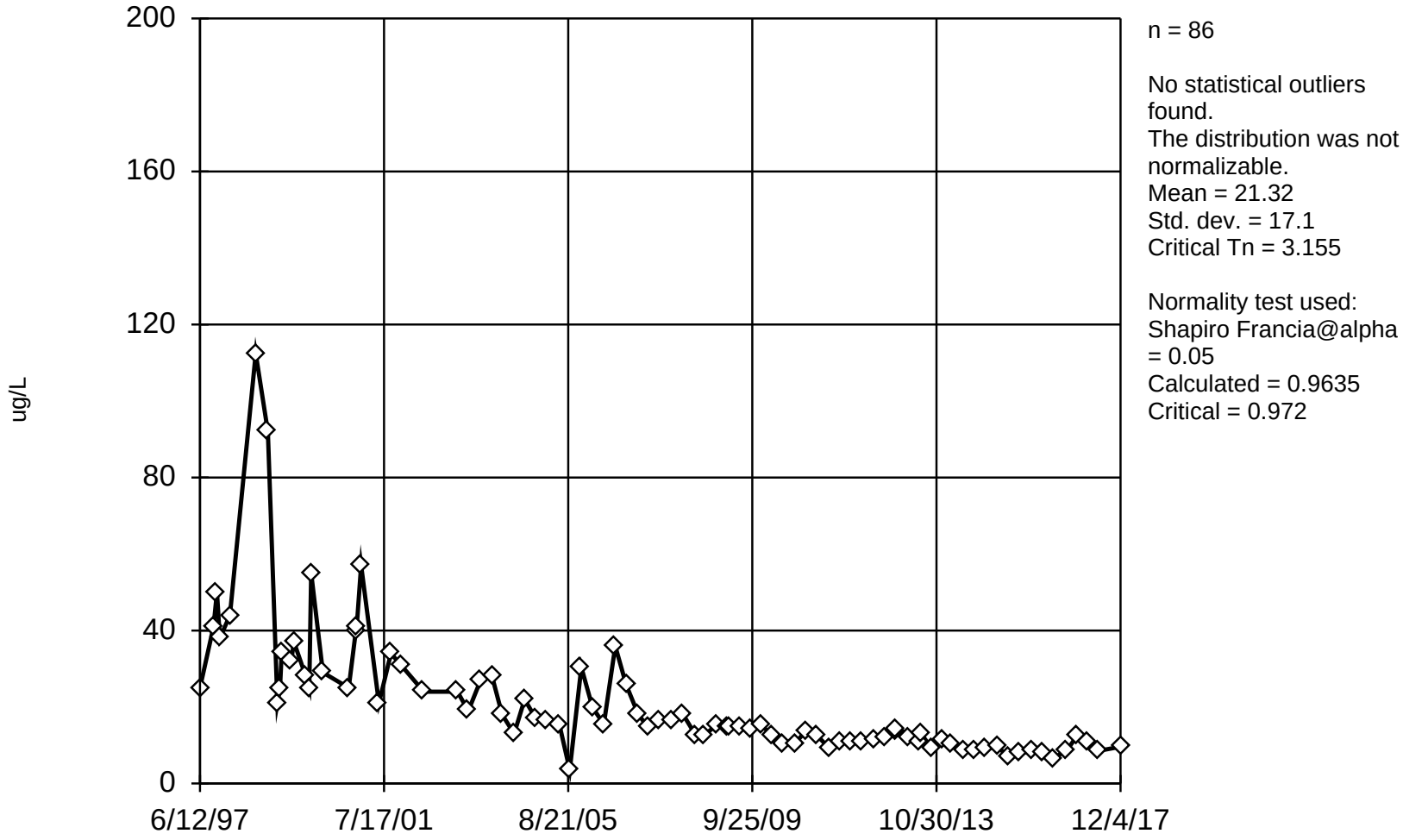
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9412
Critical = 0.972

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

I-3



n = 86

No statistical outliers found.
The distribution was not normalizable.
Mean = 21.32
Std. dev. = 17.1
Critical Tn = 3.155

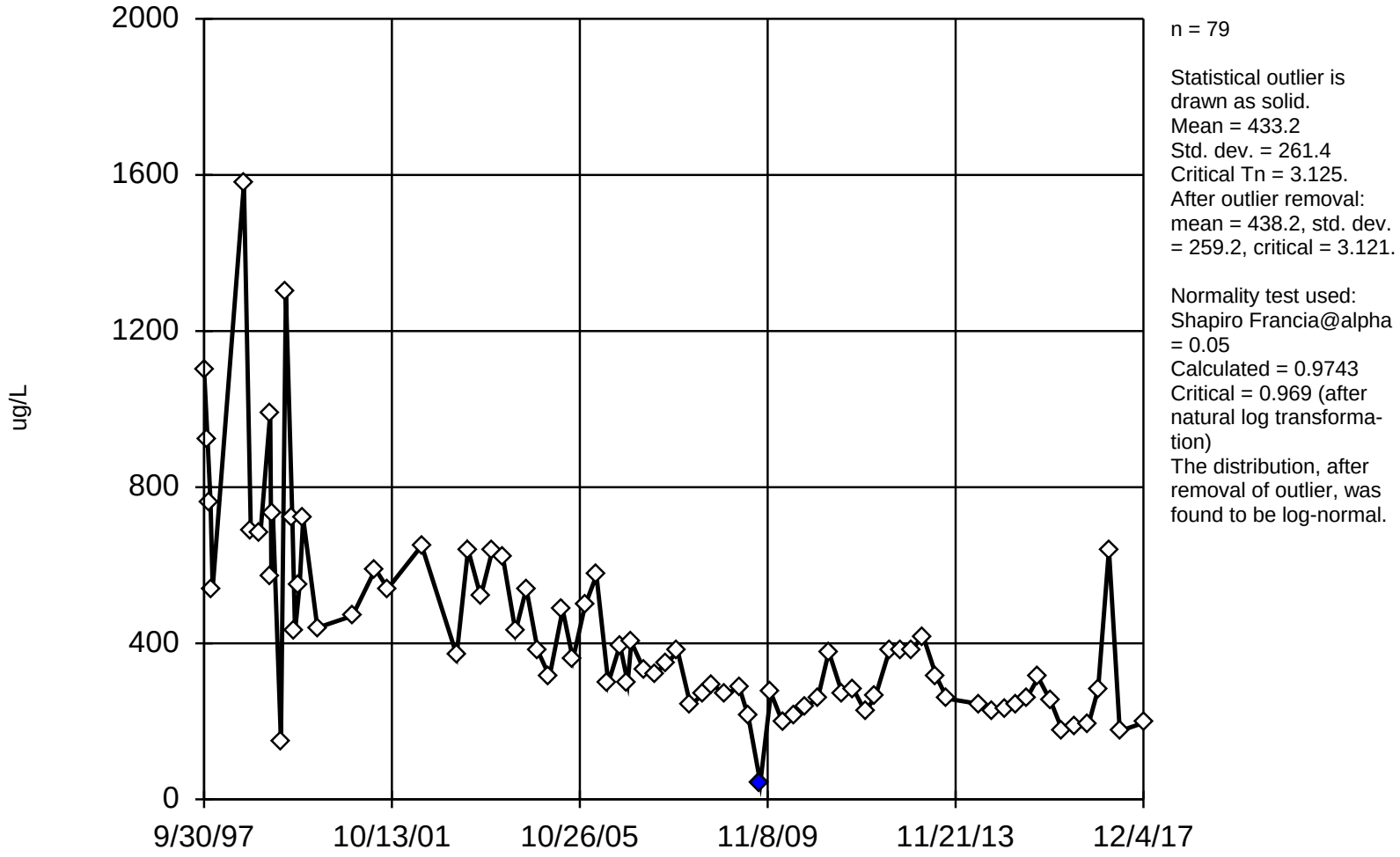
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9635
Critical = 0.972

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

I-4



n = 79

Statistical outlier is drawn as solid.
Mean = 433.2
Std. dev. = 261.4
Critical Tn = 3.125.
After outlier removal: mean = 438.2, std. dev. = 259.2, critical = 3.121.

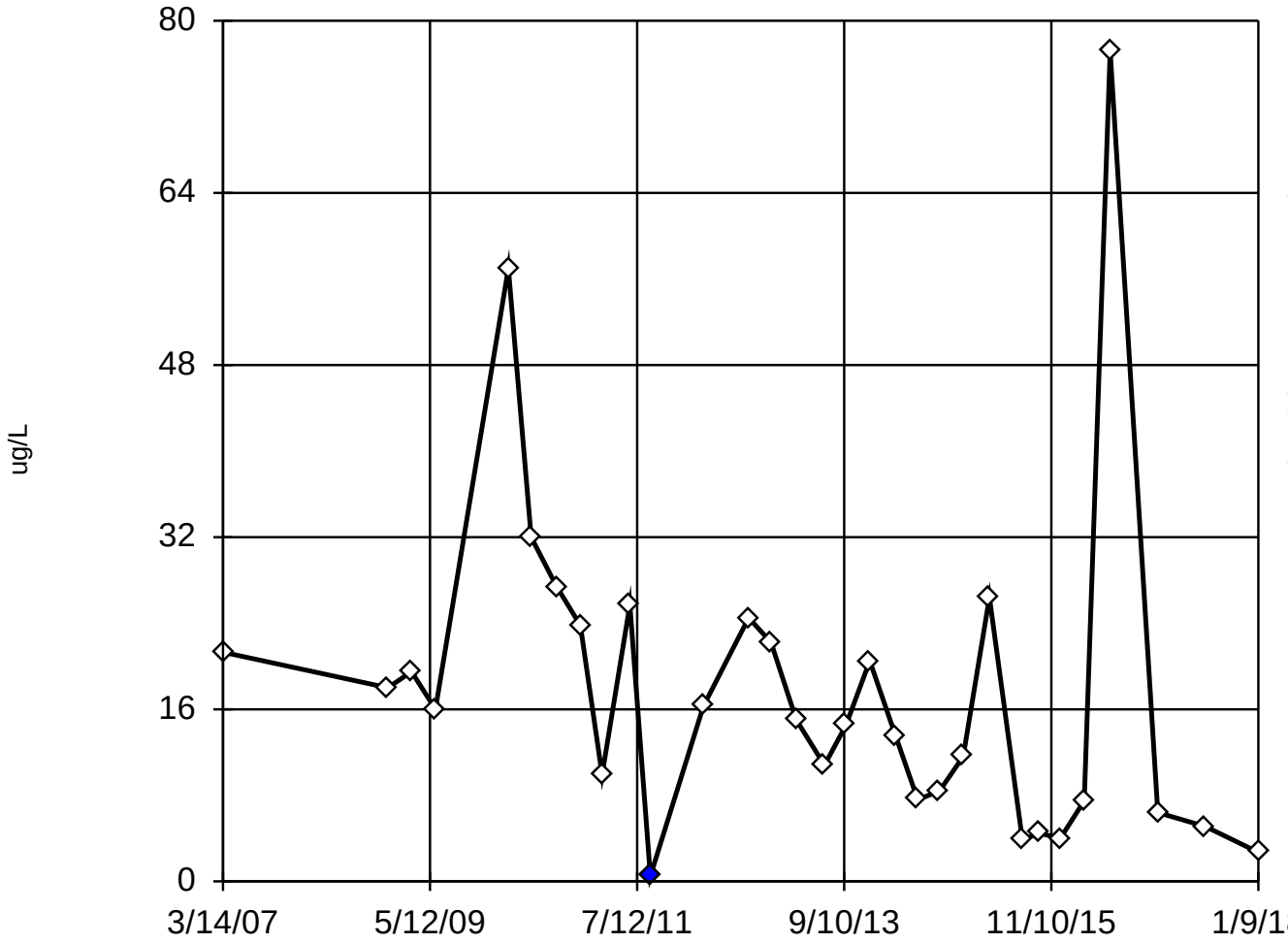
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9743
Critical = 0.969 (after natural log transformation)
The distribution, after removal of outlier, was found to be log-normal.

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

S-2DB



n = 31

Statistical outlier is drawn as solid.
Mean = 17.86
Std. dev. = 15.8
Critical Tn = 2.759.
After outlier removal: mean = 18.44, std. dev. = 15.73, critical = 2.745.

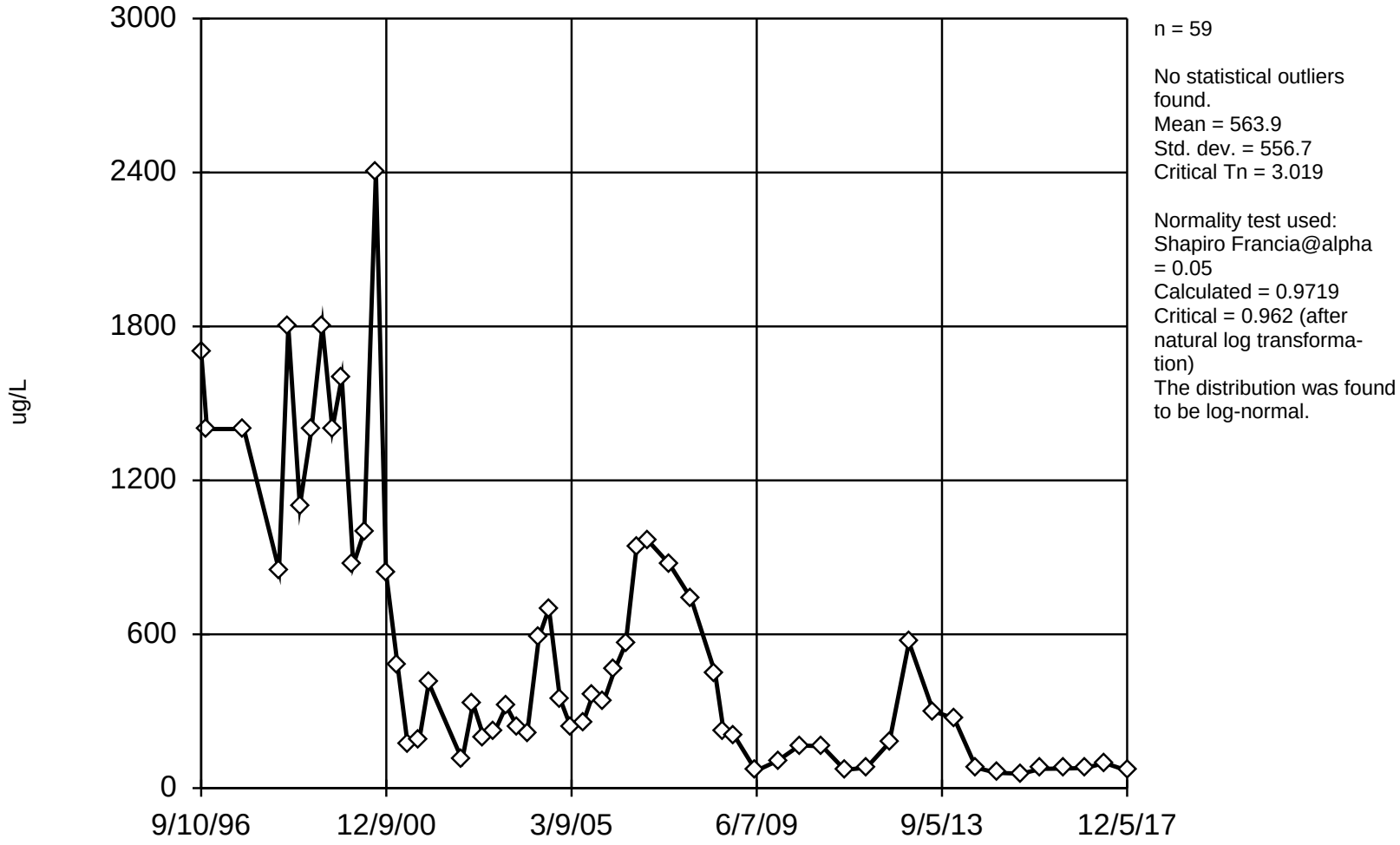
Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.9757
Critical = 0.927 (after natural log transformation)
The distribution, after removal of outlier, was found to be log-normal.

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

SM-1



n = 59

No statistical outliers found.
Mean = 563.9
Std. dev. = 556.7
Critical Tn = 3.019

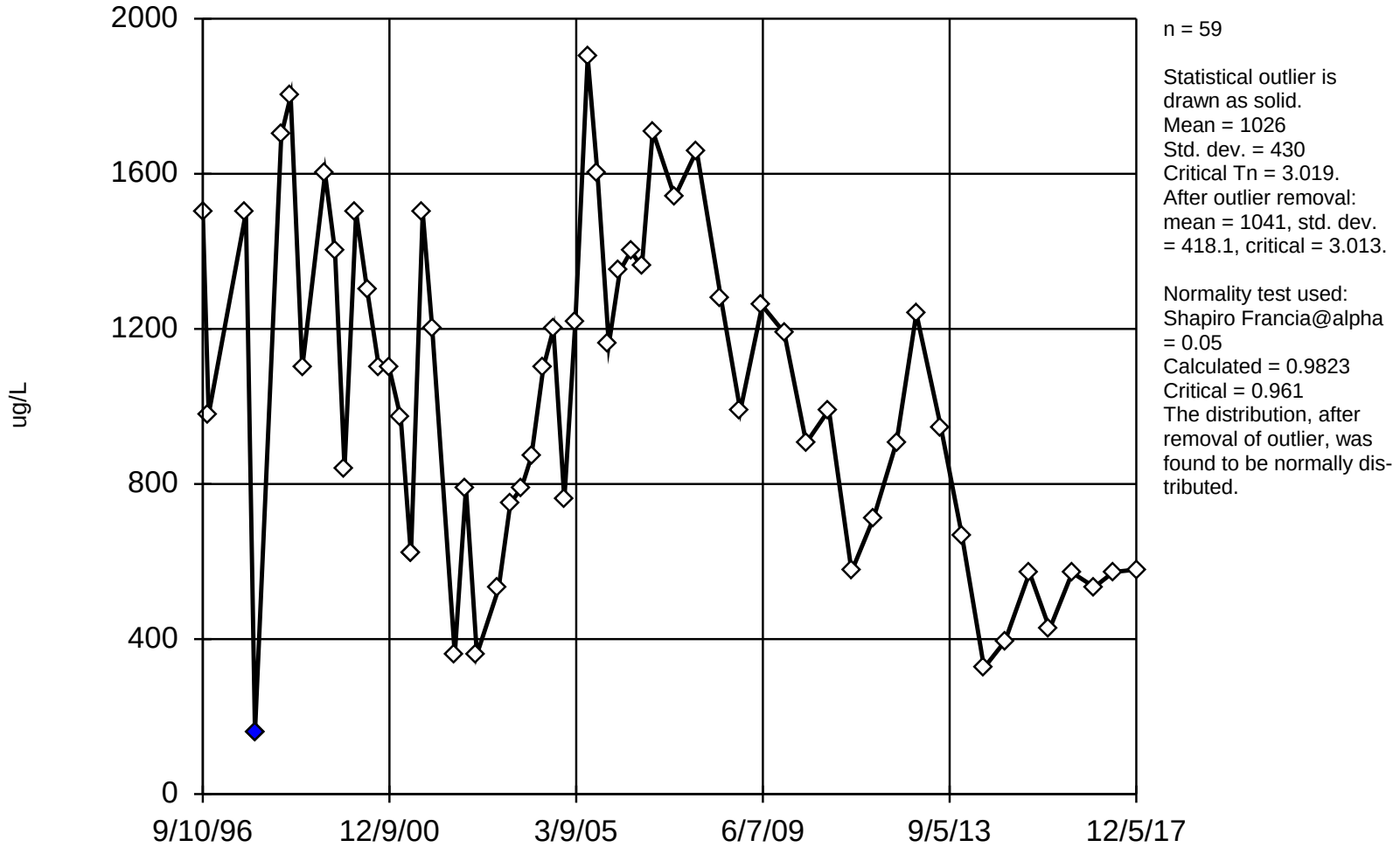
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.9719
Critical = 0.962 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

SM-2



n = 59

Statistical outlier is drawn as solid.
Mean = 1026
Std. dev. = 430
Critical Tn = 3.019.
After outlier removal: mean = 1041, std. dev. = 418.1, critical = 3.013.

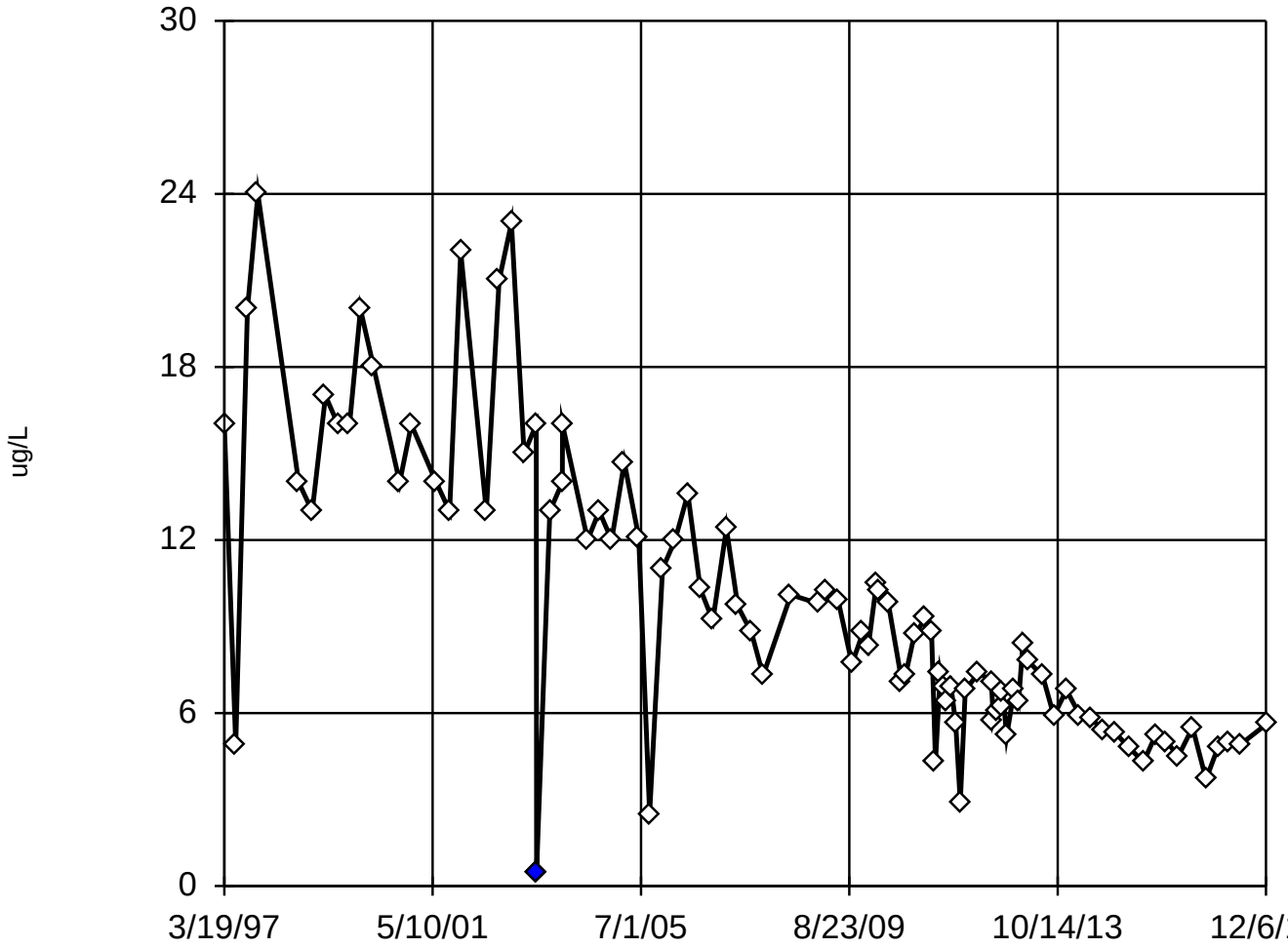
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9823
Critical = 0.961
The distribution, after removal of outlier, was found to be normally distributed.

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

W-6



n = 92

Statistical outlier is drawn as solid.
Mean = 9.817
Std. dev. = 4.968
Critical Tn = 3.179.
After outlier removal: mean = 9.92, std. dev. = 4.897, critical = 3.174.

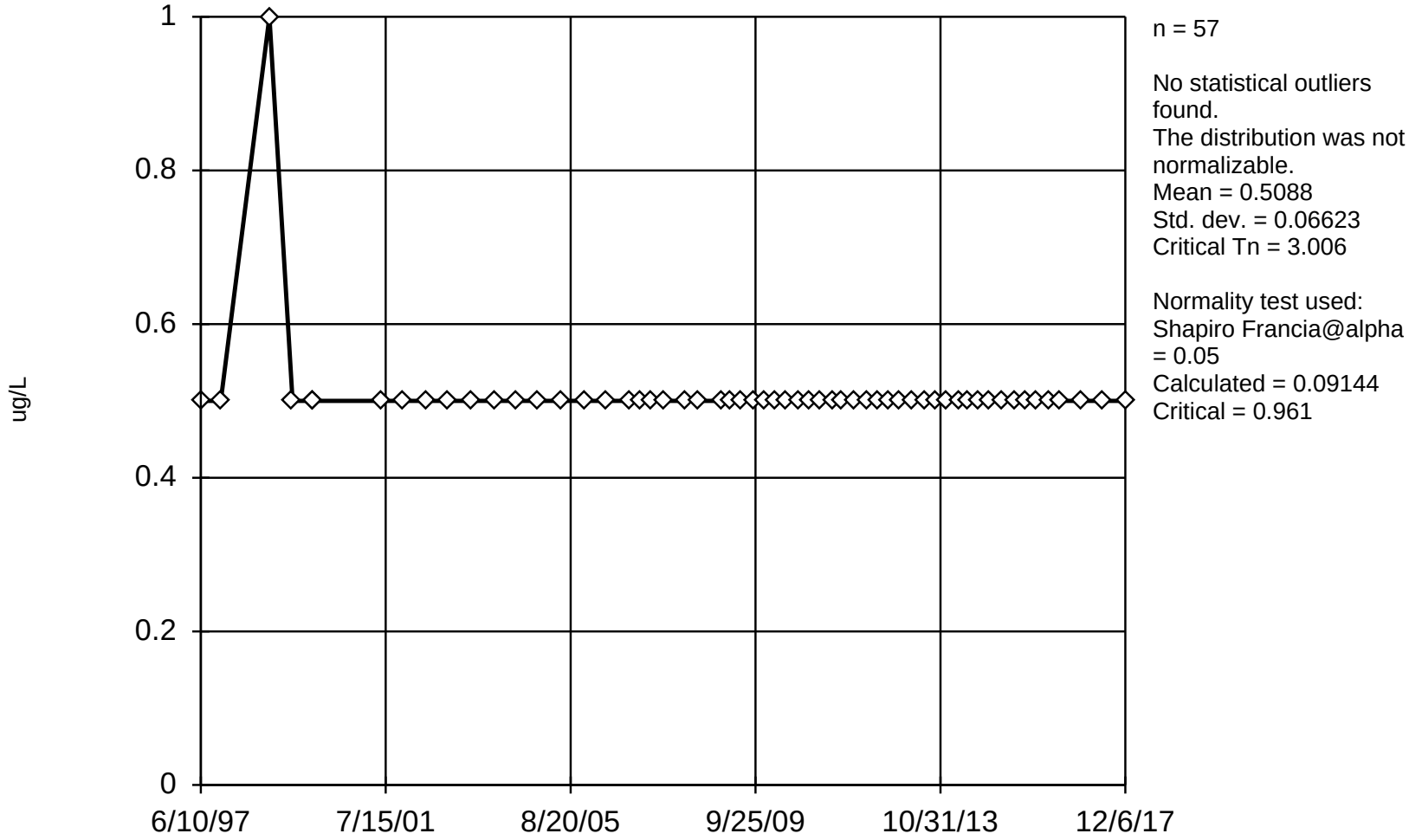
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9873
Critical = 0.973 (after natural log transformation)
The distribution, after removal of outlier, was found to be log-normal.

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

W-7



n = 57

No statistical outliers found.
The distribution was not normalizable.
Mean = 0.5088
Std. dev. = 0.06623
Critical Tn = 3.006

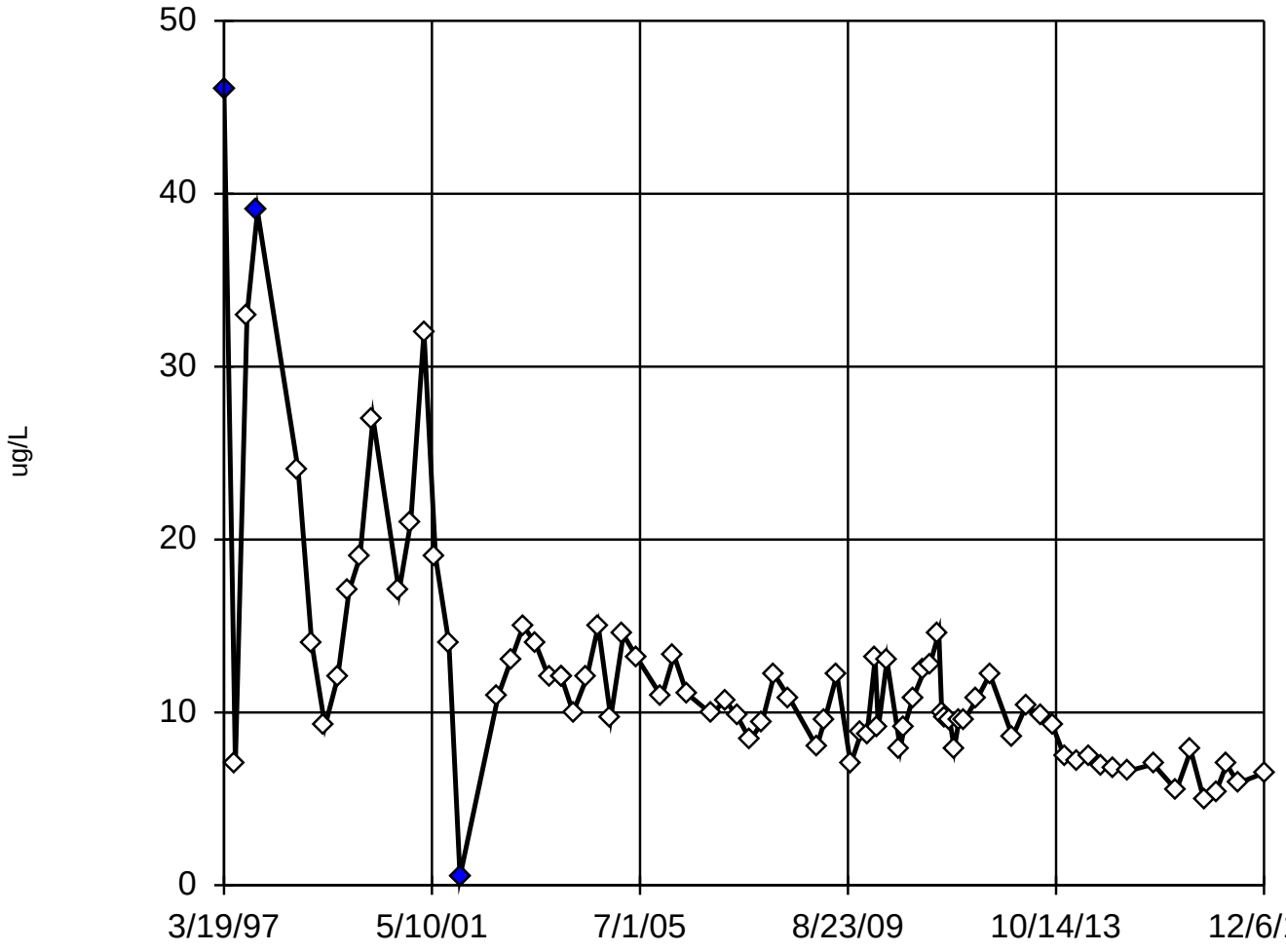
Normality test used:
Shapiro Francia@alpha = 0.05
Calculated = 0.09144
Critical = 0.961

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

EPA 1989 Outlier Test

W-12



n = 81

Statistical outliers are drawn as solid.
IMPORTANT: the data did not pass the normality test, but the user chose to continue.
Mean = 12.19
Std. dev. = 7.225
Critical Tn = 3.134.
After outlier removal: mean = 12.33, std. dev. = 7.149, critical = 3.13; mean = 11.91, std. dev. = 6.087, critical = 3.125; mean = 11.56, std. dev. = 5.28, critical = 3.121.

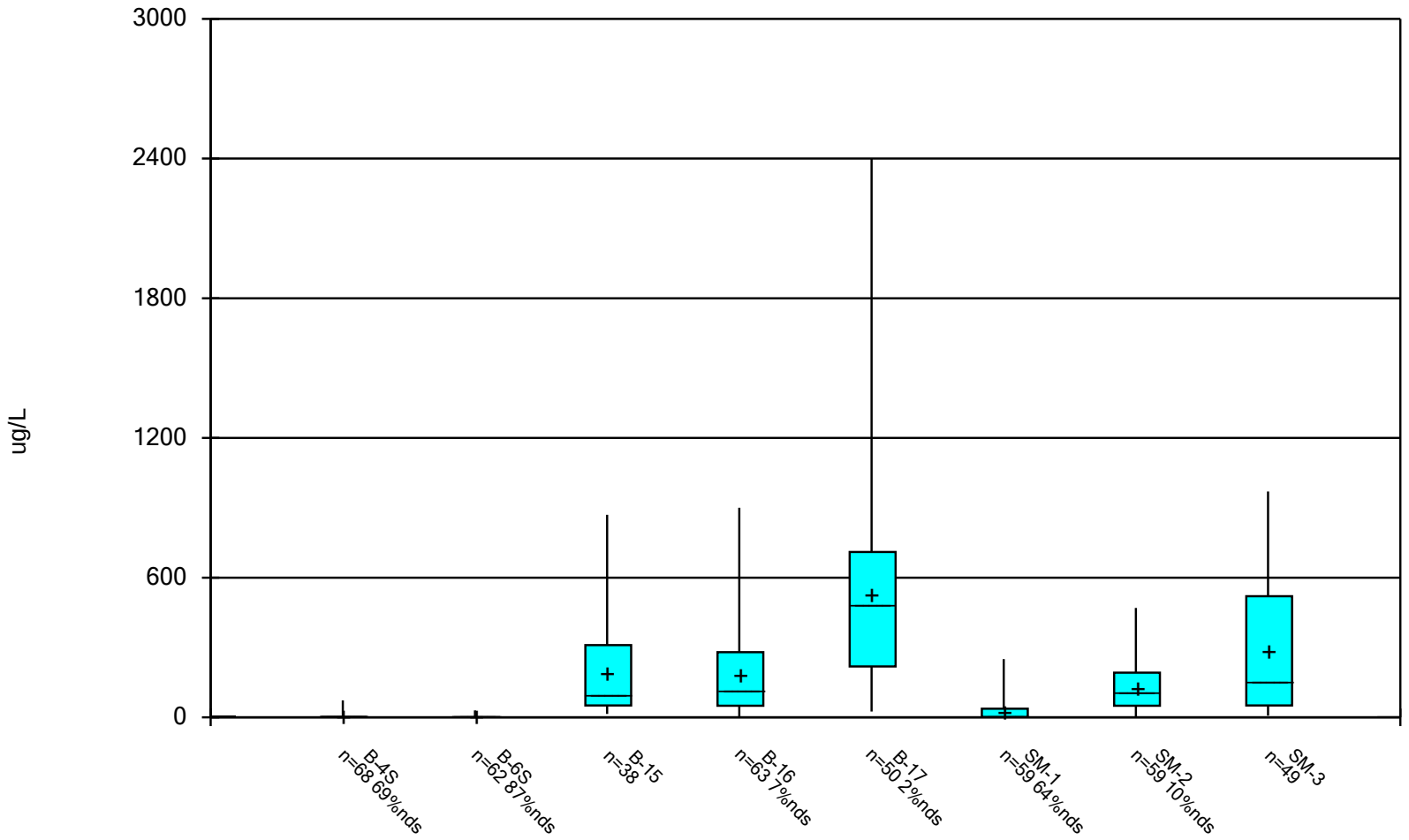
Normality test used: Shapiro Francia@alpha = 0.05
Calculated = 0.9608
Critical = 0.969

Constituent: TCE Analysis Run 4/19/2018 10:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Appendix I BOX & WHISKERS PLOTS

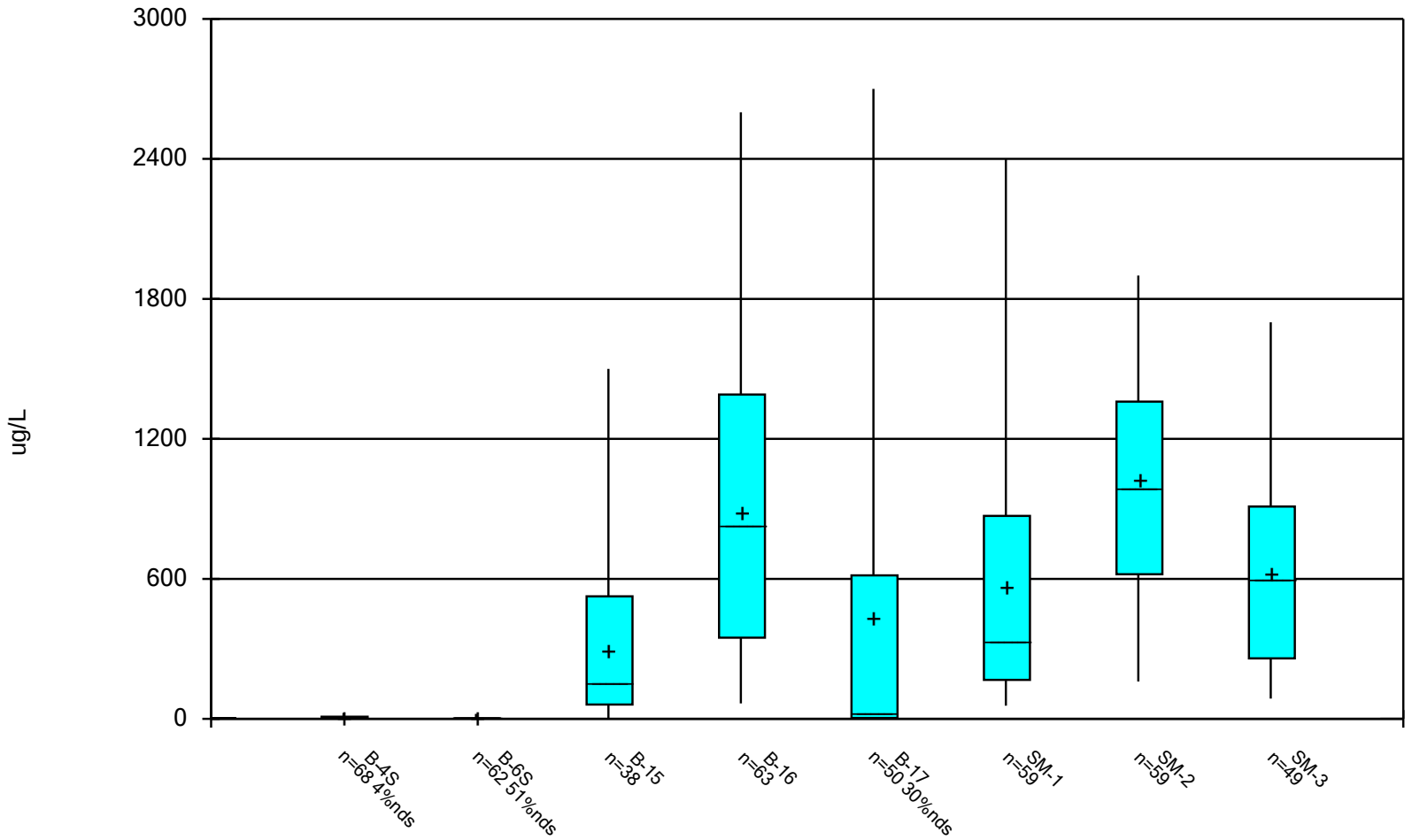
Box & Whiskers Plot



Constituent: 1,2-DCE Analysis Run 12/27/2018 4:52 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

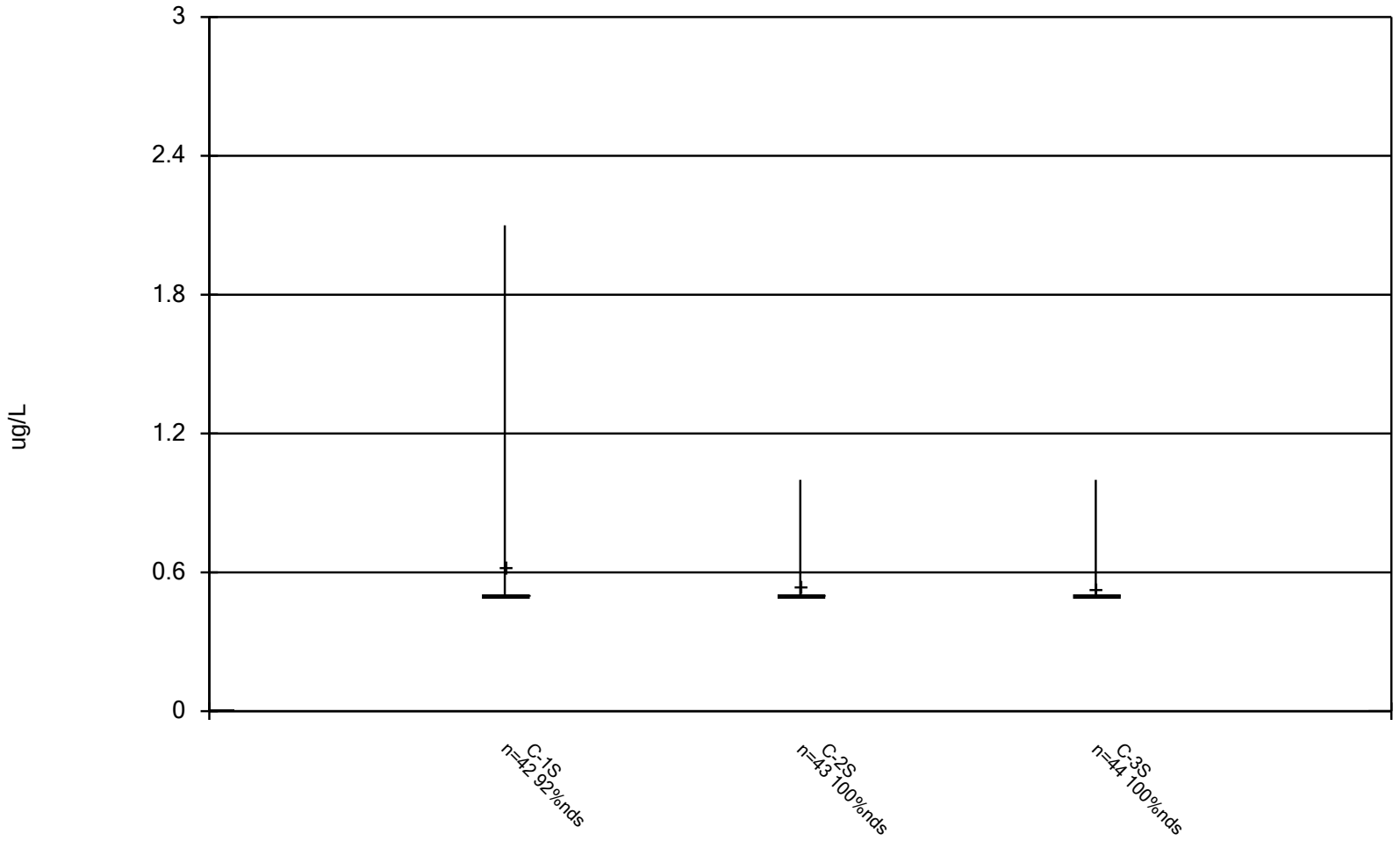
Box & Whiskers Plot



Constituent: TCE Analysis Run 12/27/2018 4:52 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

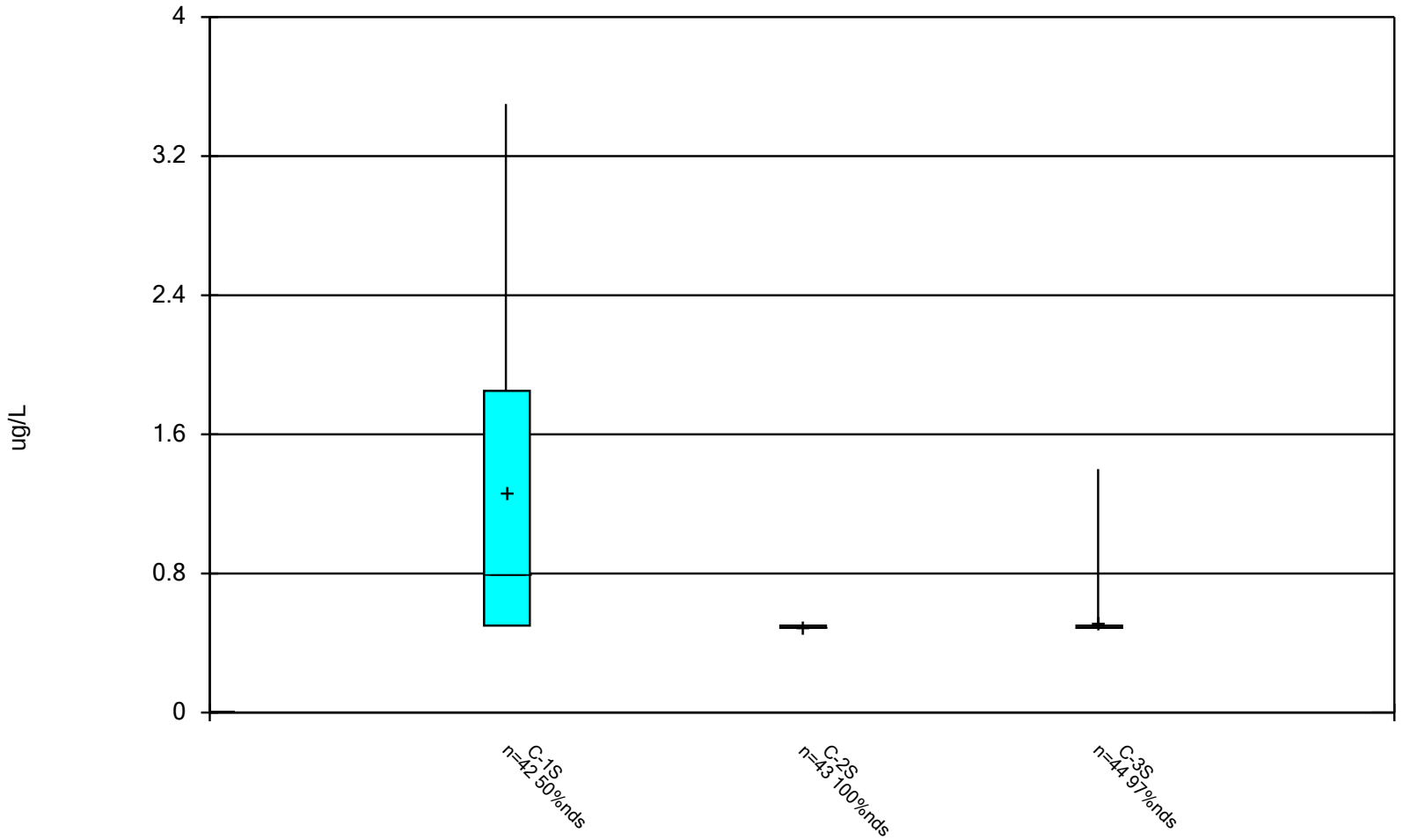
Box & Whiskers Plot



Constituent: 1,2-DCE Analysis Run 12/27/2018 4:56 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

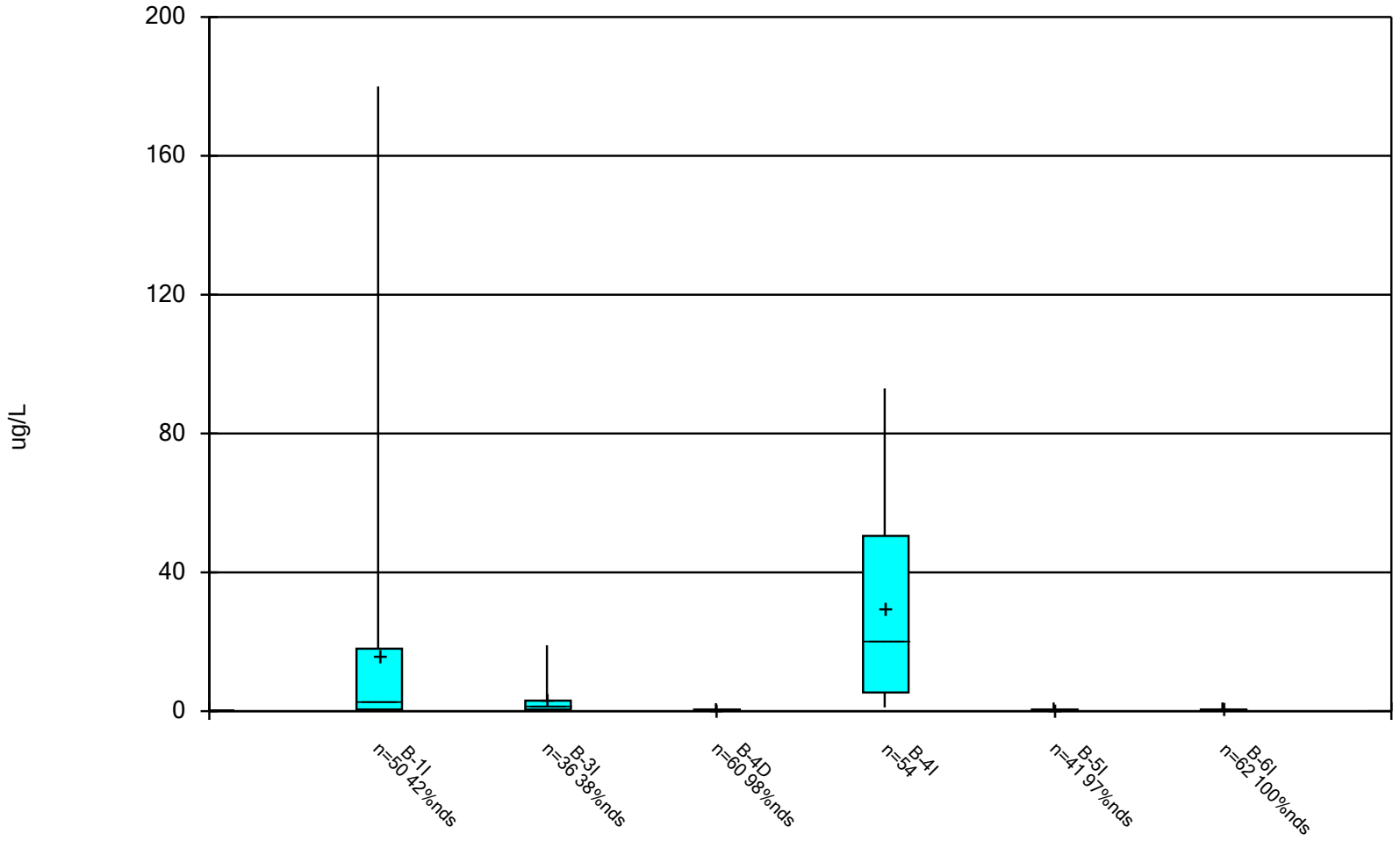
Box & Whiskers Plot



Constituent: TCE Analysis Run 12/27/2018 4:56 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

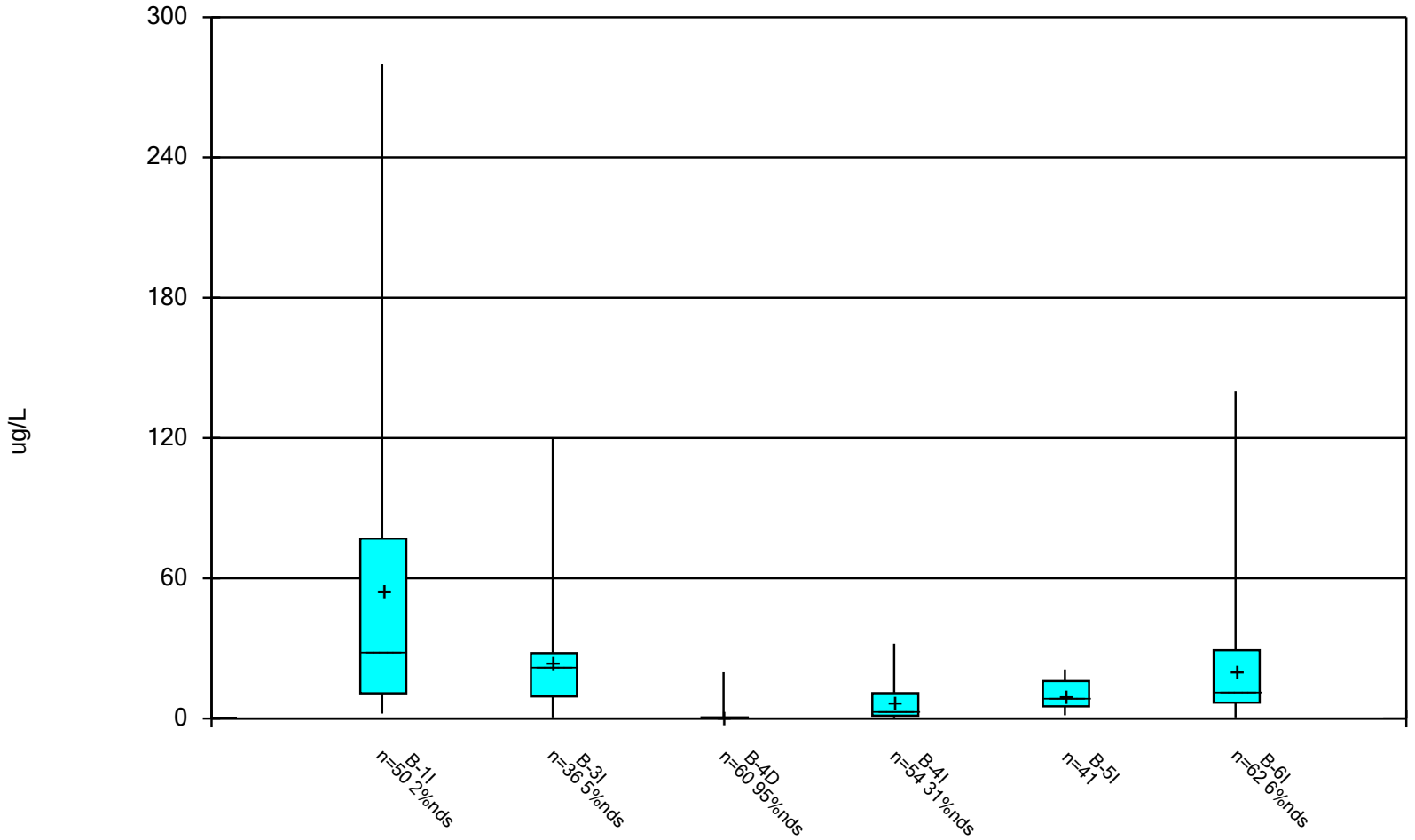
Box & Whiskers Plot



Constituent: 1,2-DCE Analysis Run 12/27/2018 4:58 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

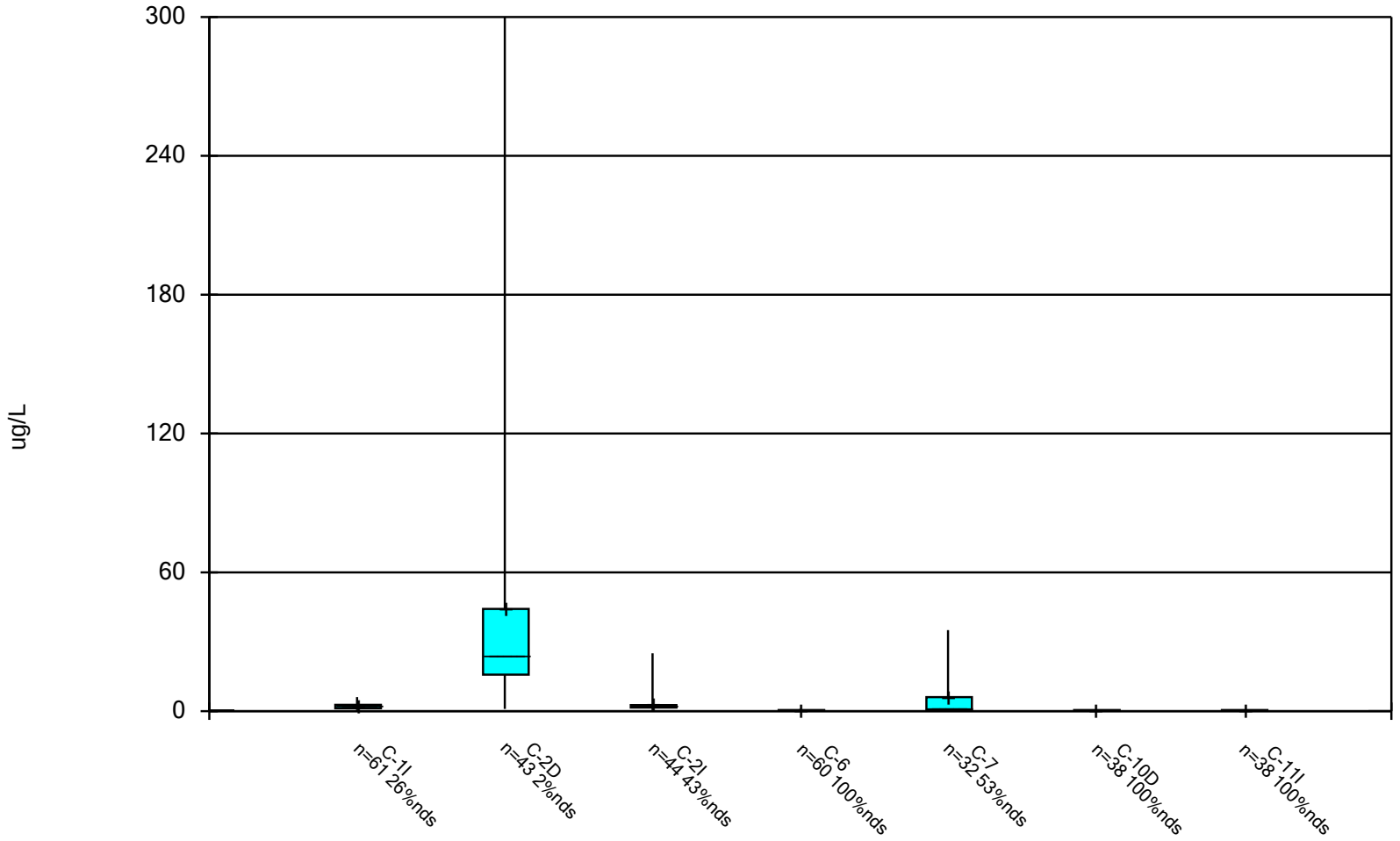
Box & Whiskers Plot



Constituent: TCE Analysis Run 12/27/2018 4:58 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

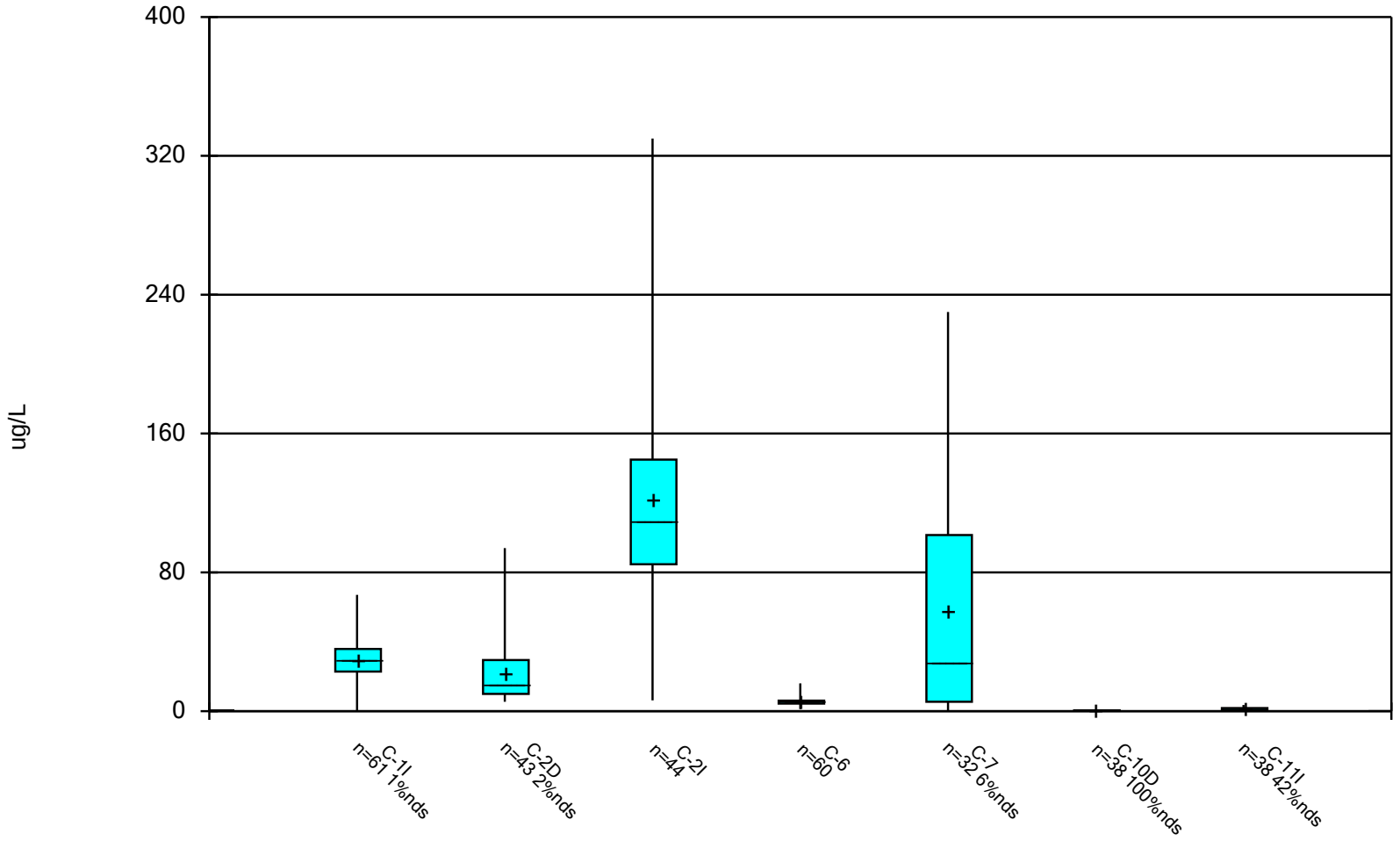
Box & Whiskers Plot



Constituent: 1,2-DCE Analysis Run 12/27/2018 4:59 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Box & Whiskers Plot



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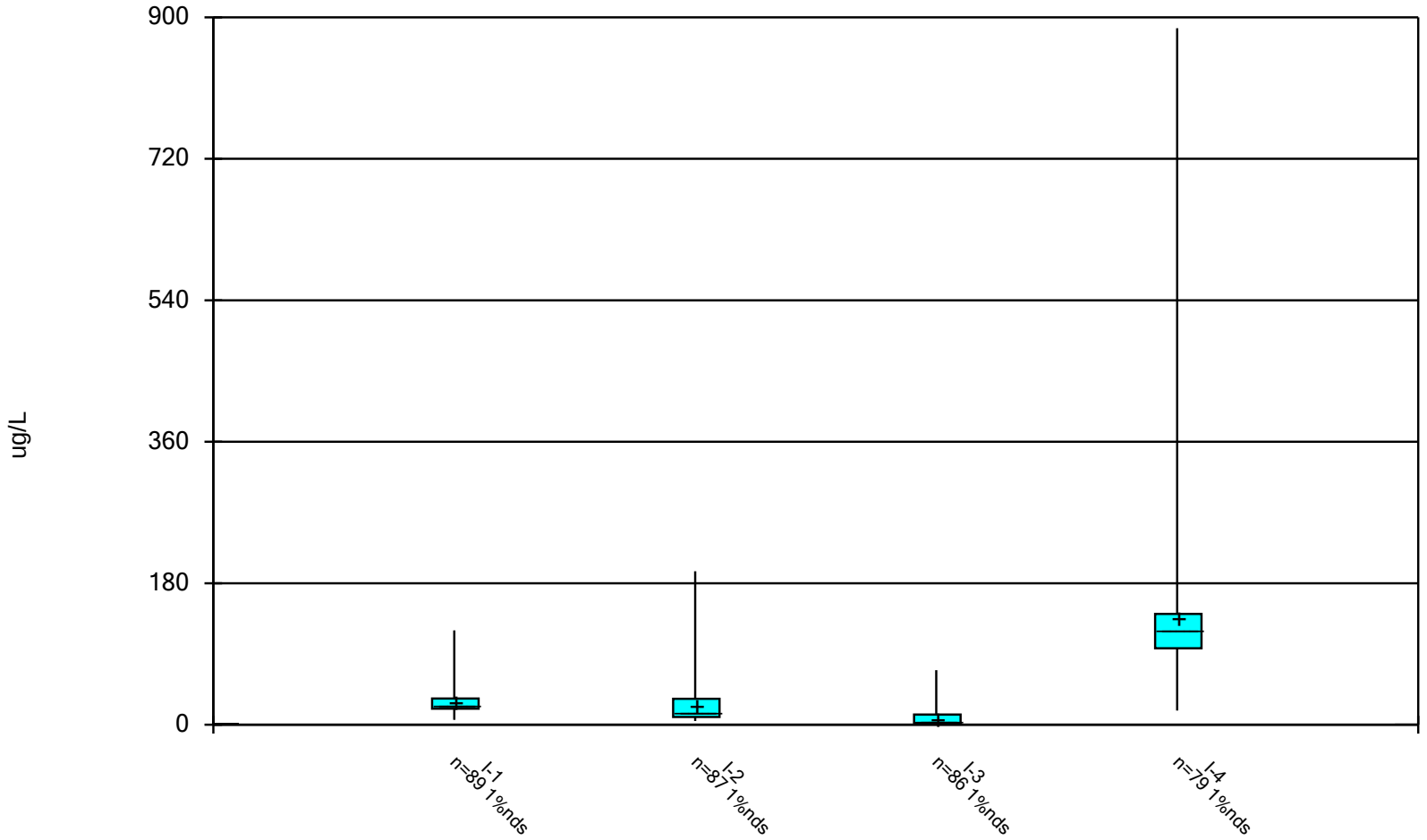
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

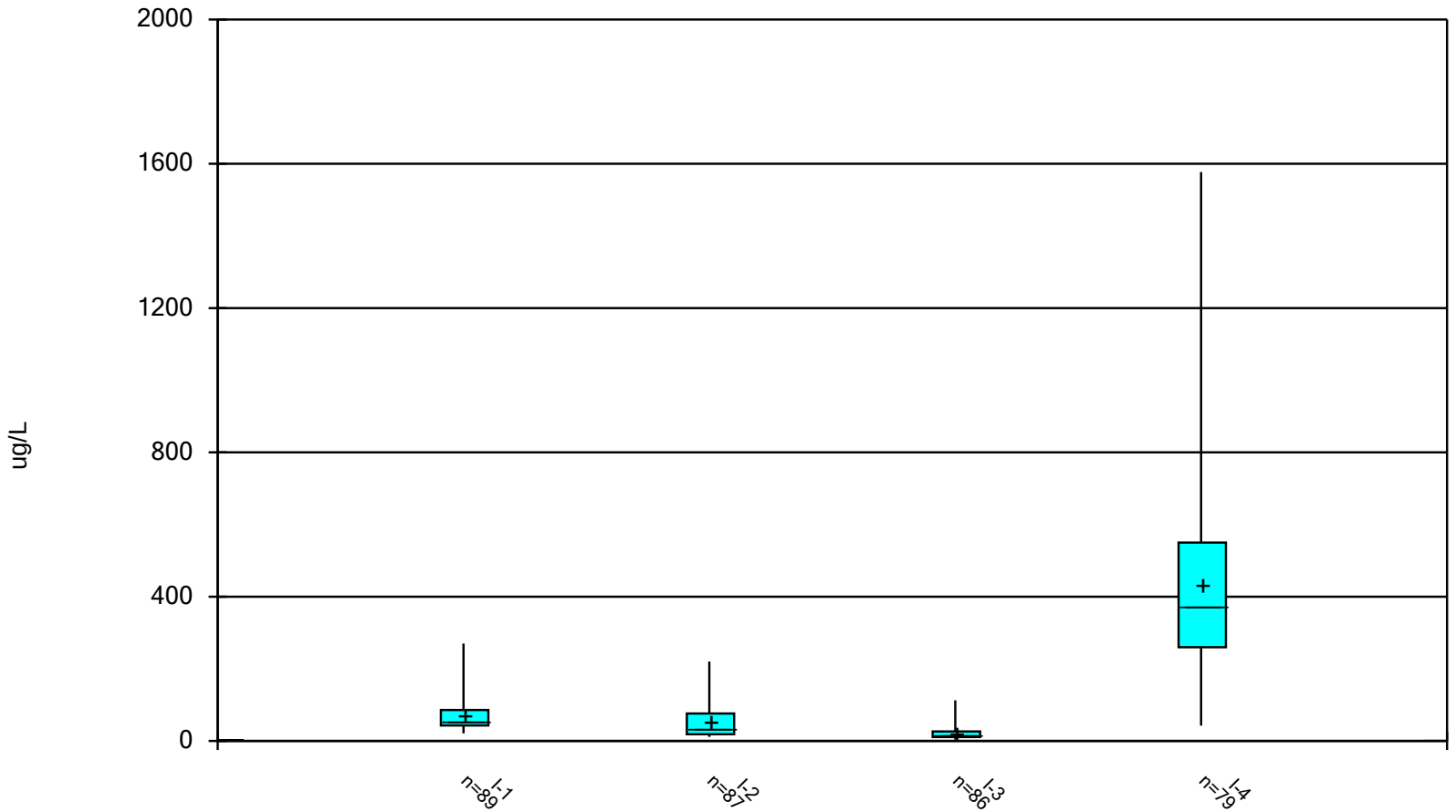
Box & Whiskers Plot



Constituent: 1,2-DCE Analysis Run 12/27/2018 5:00 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

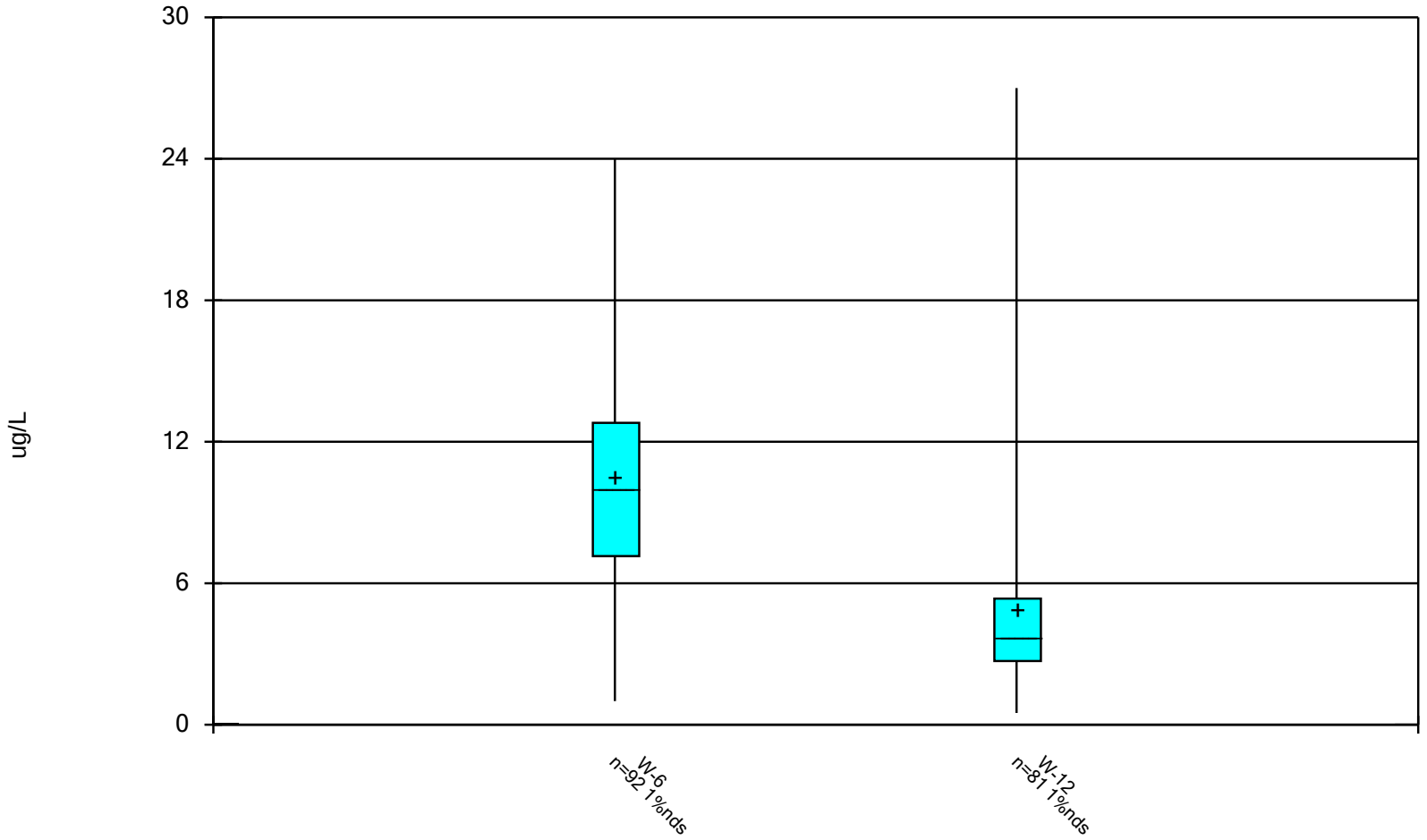
Box & Whiskers Plot



Constituent: TCE Analysis Run 12/27/2018 5:00 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

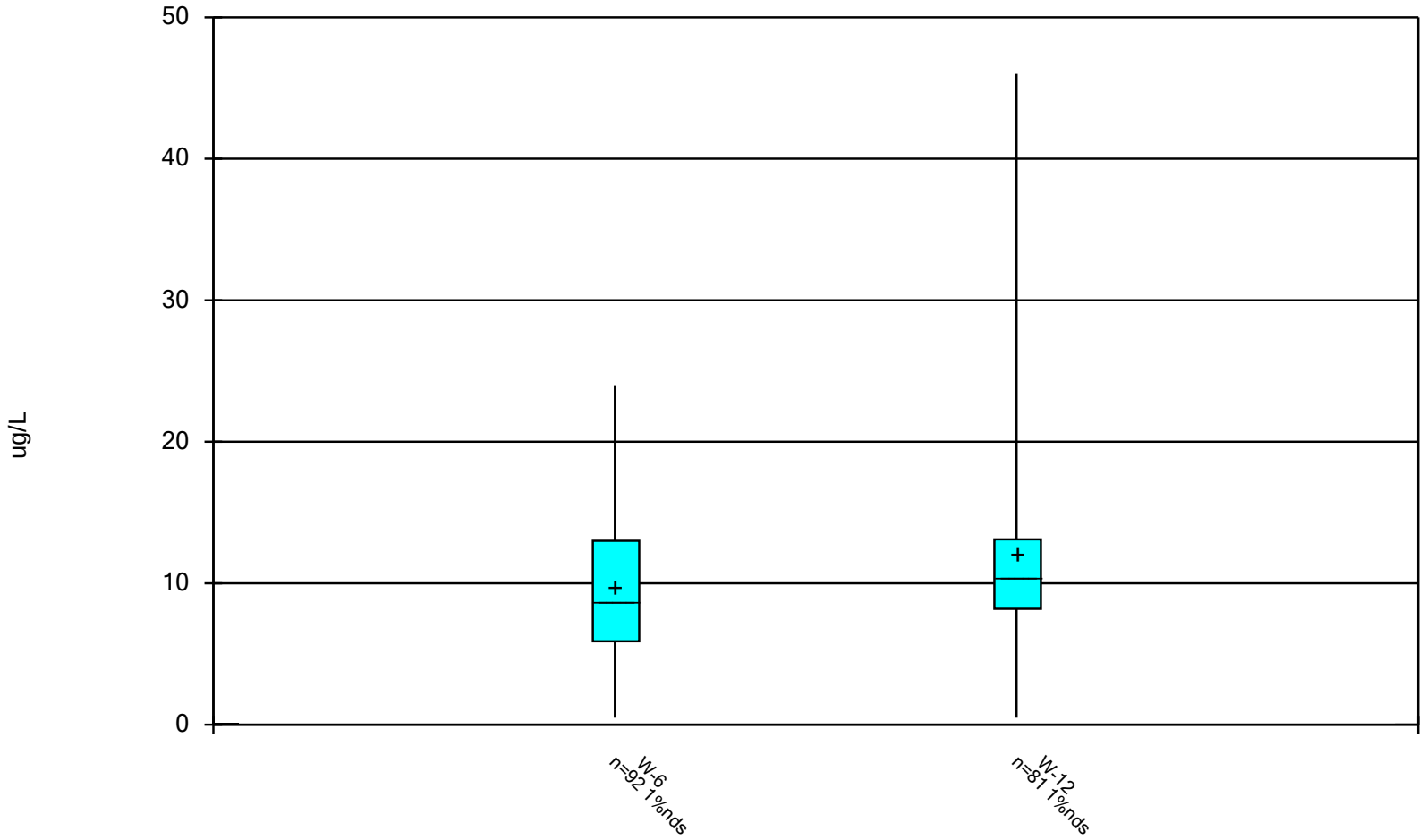
Box & Whiskers Plot



Constituent: 1,2-DCE Analysis Run 12/27/2018 5:02 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Box & Whiskers Plot



Constituent: TCE Analysis Run 12/27/2018 5:02 PM

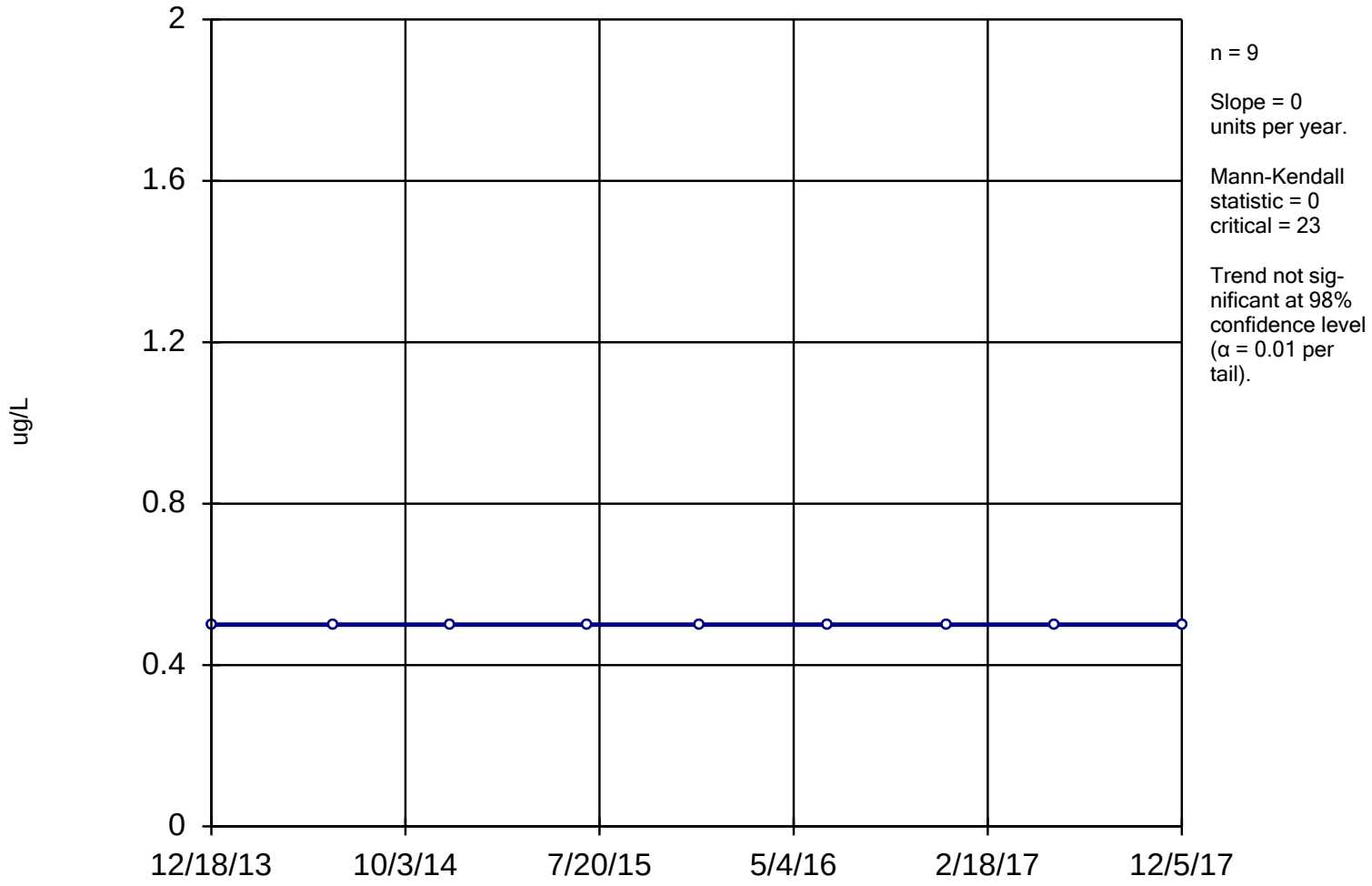
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Appendix J SEN'S SLOPE ESTIMATOR ANALYSIS

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-2I



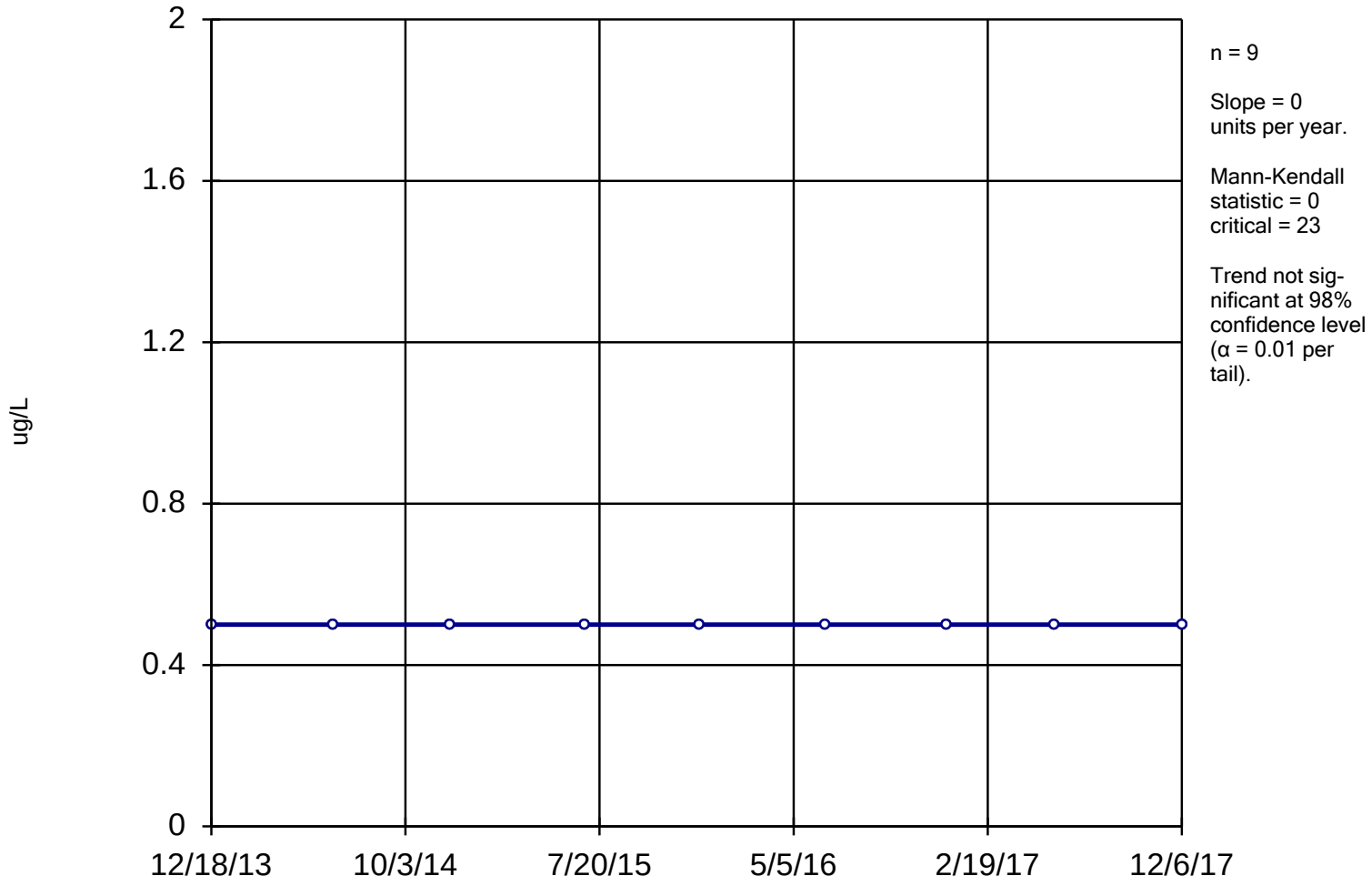
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-4D



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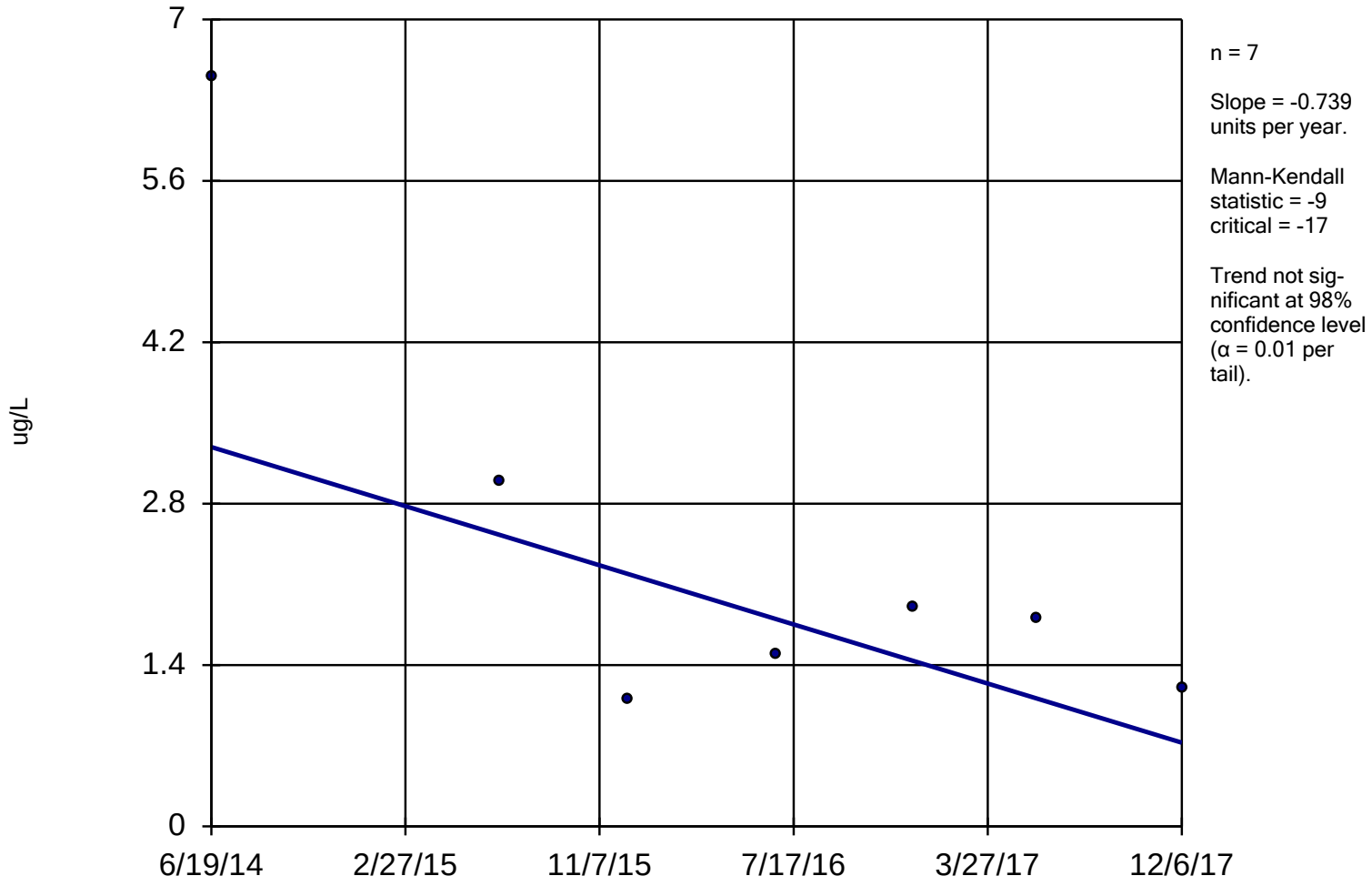
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

B-4I



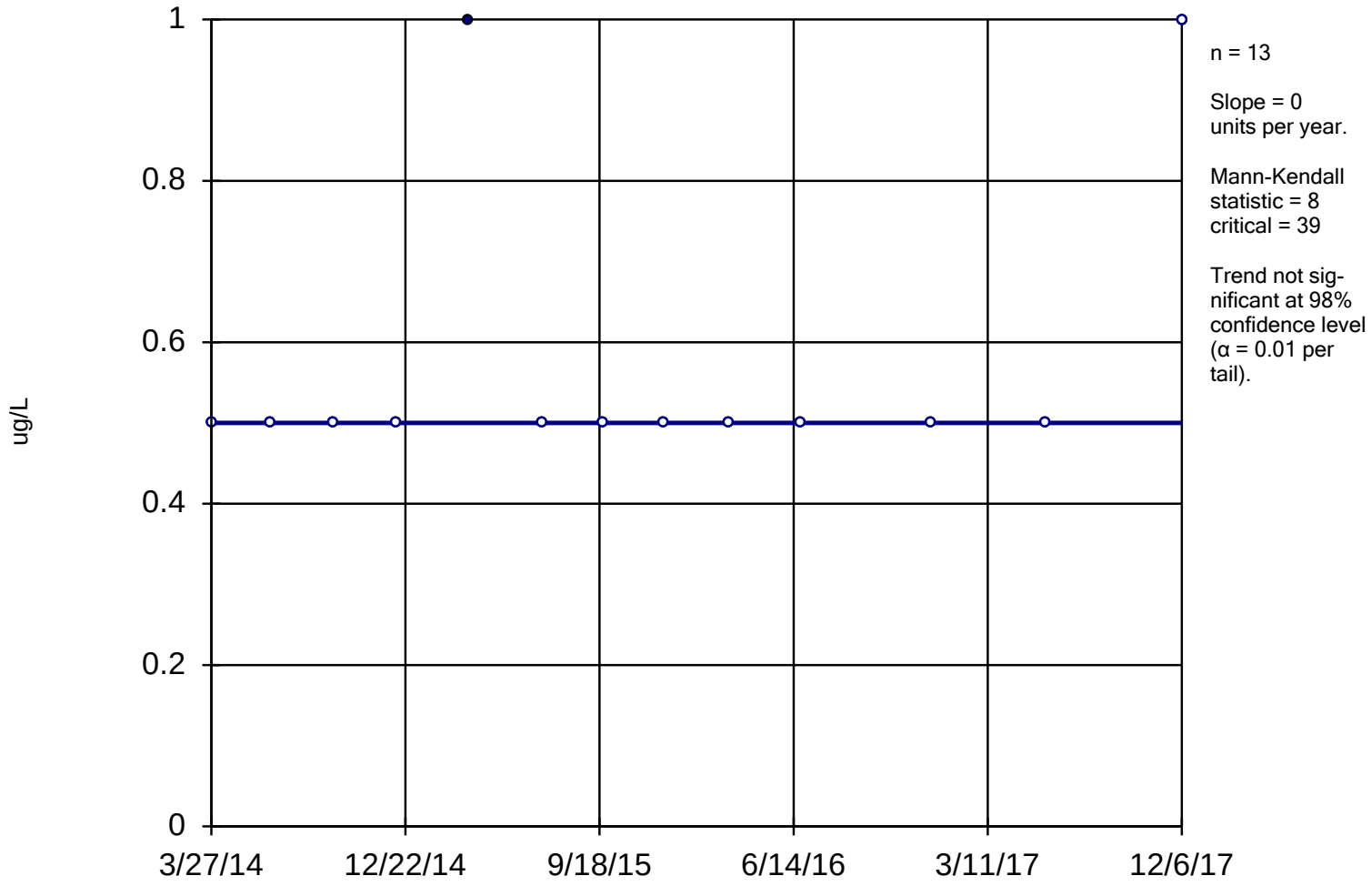
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-4S



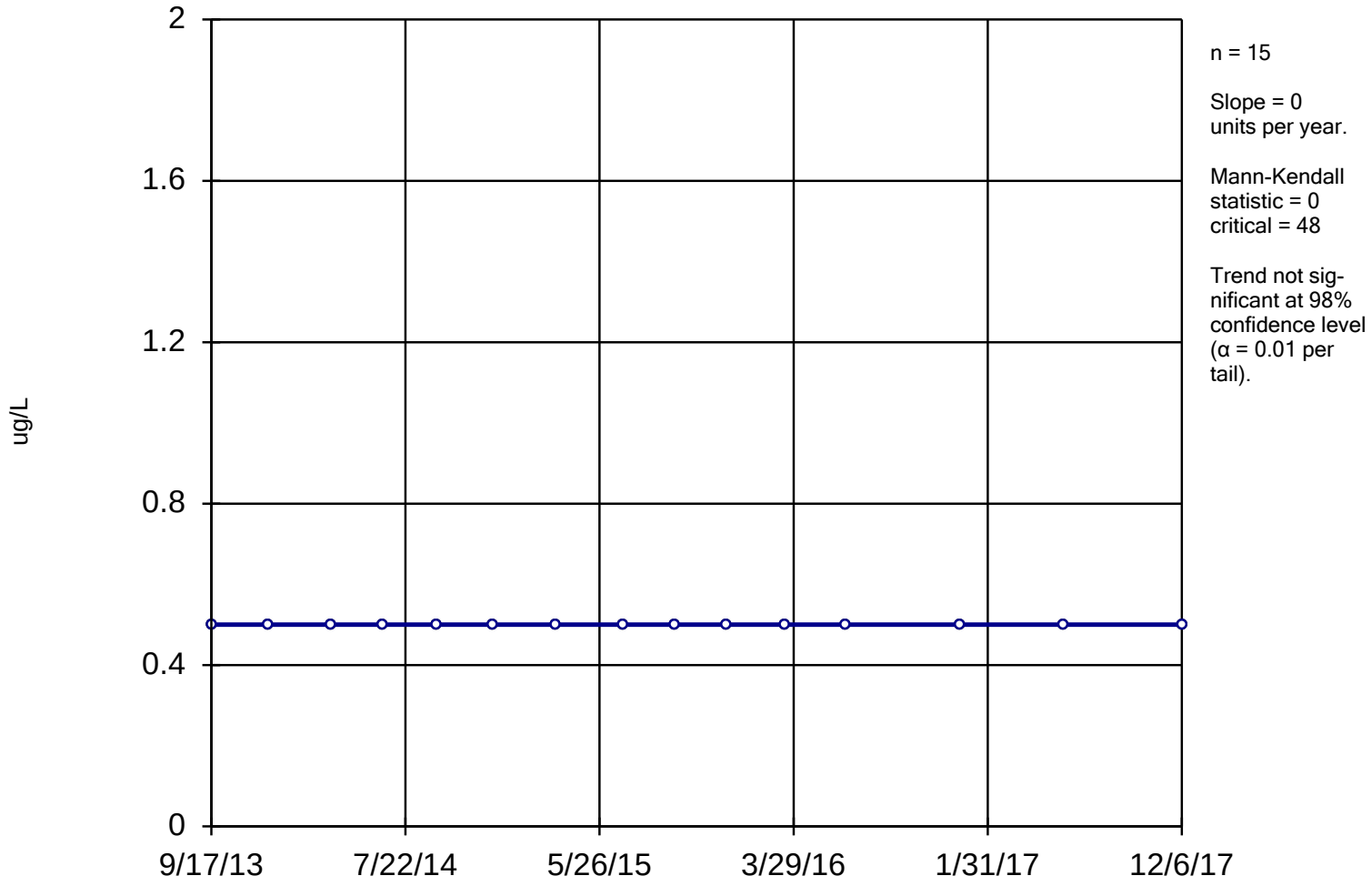
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-5D



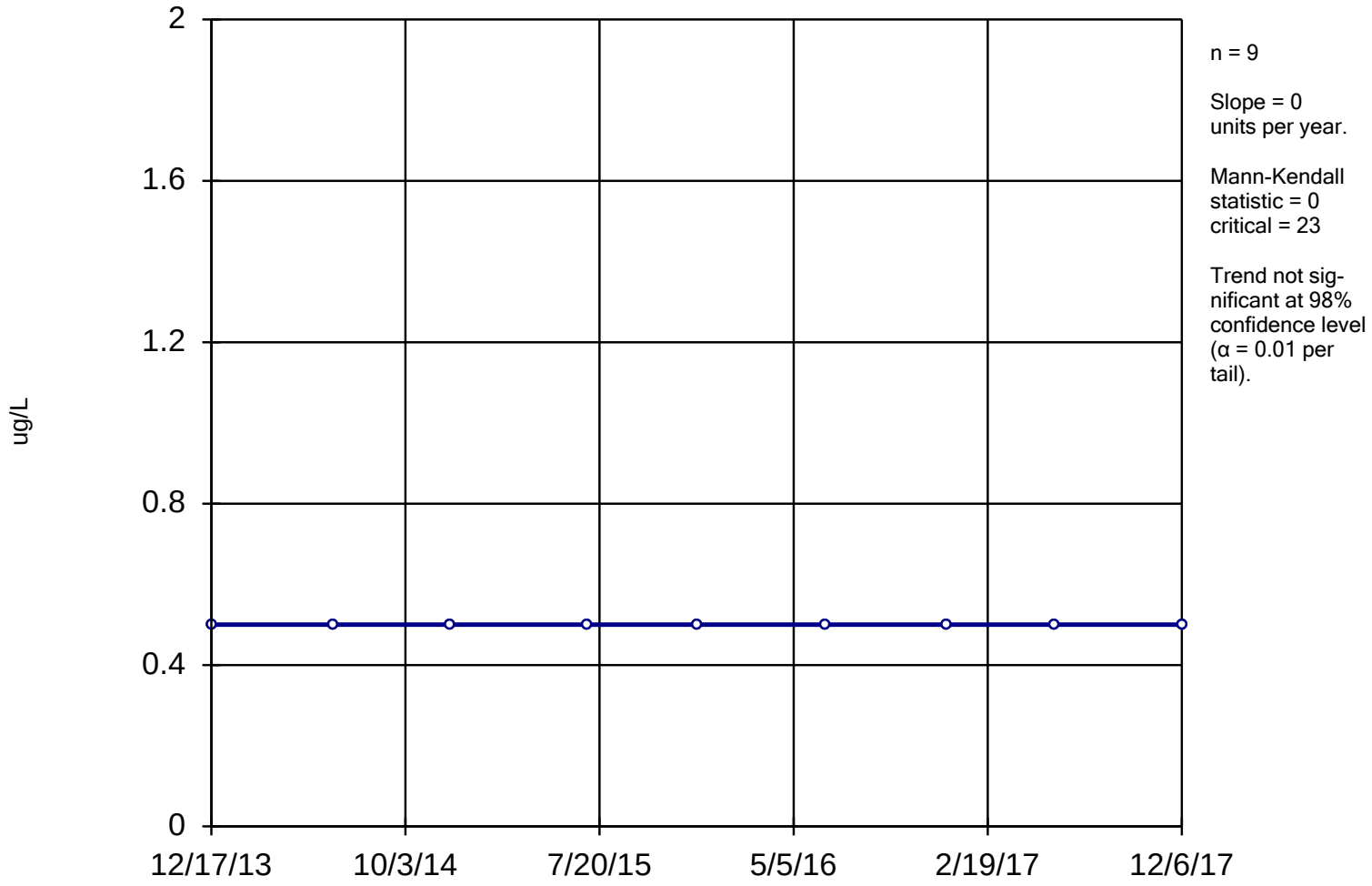
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-5I



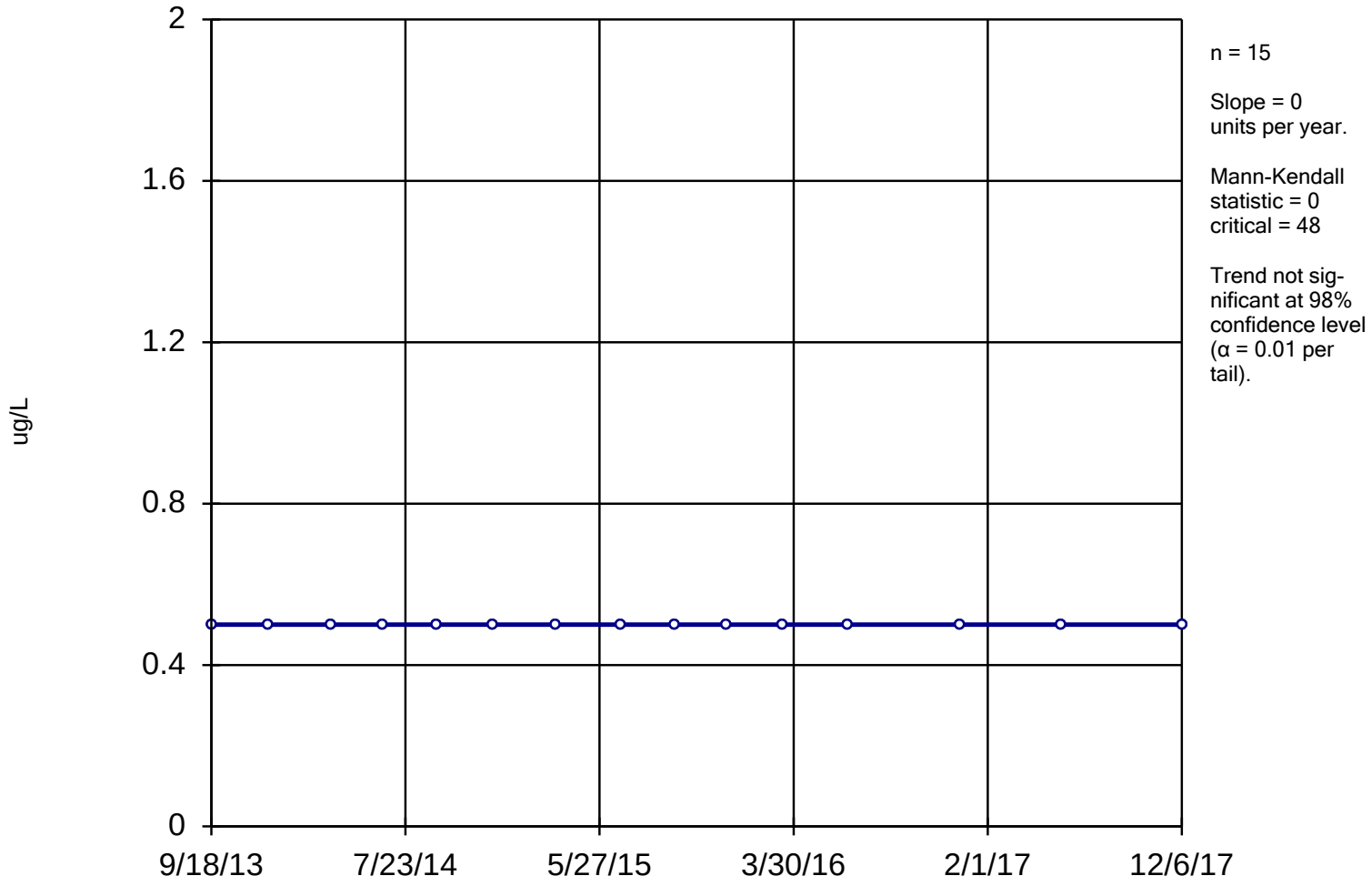
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-6I



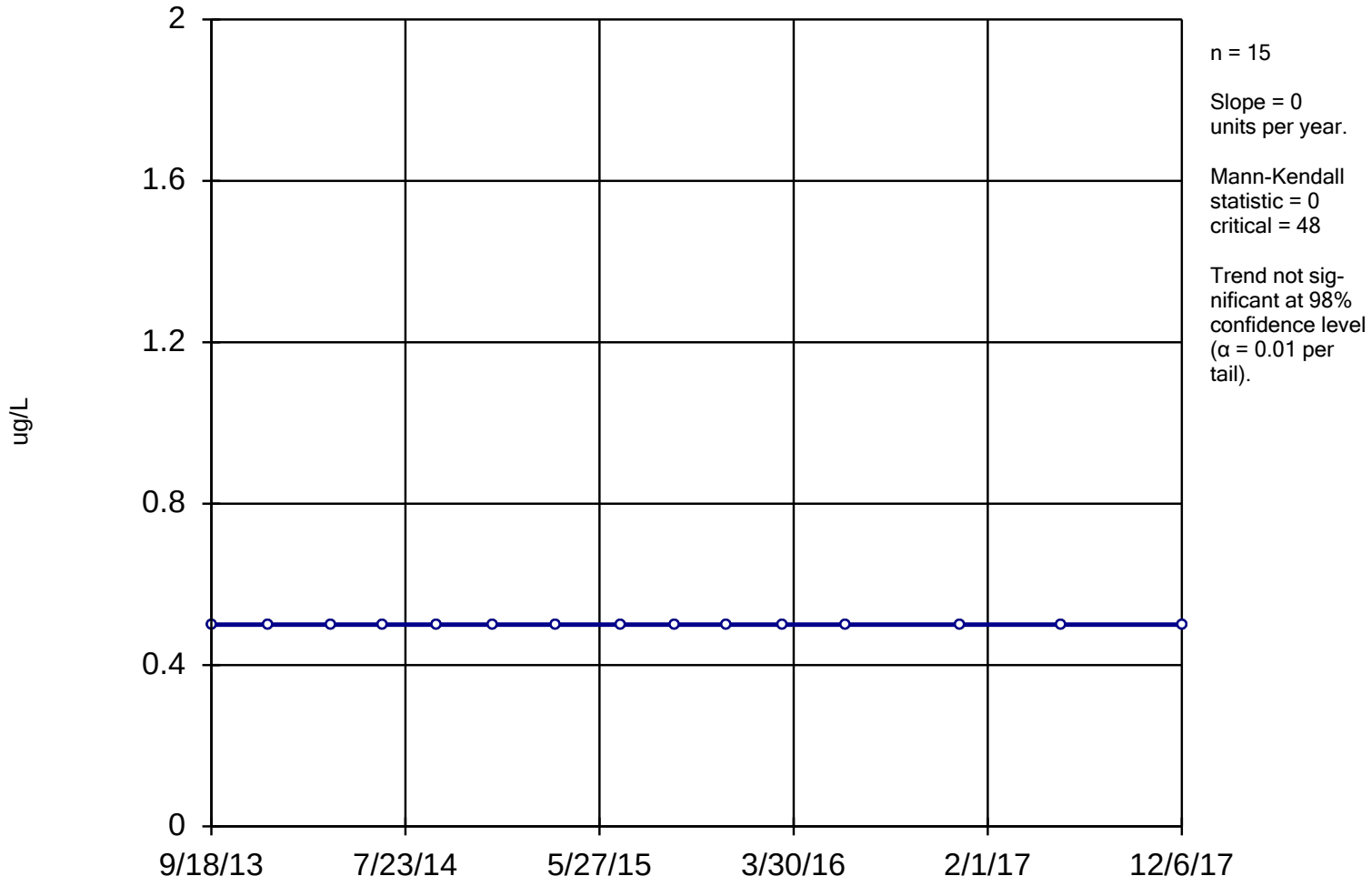
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-6S



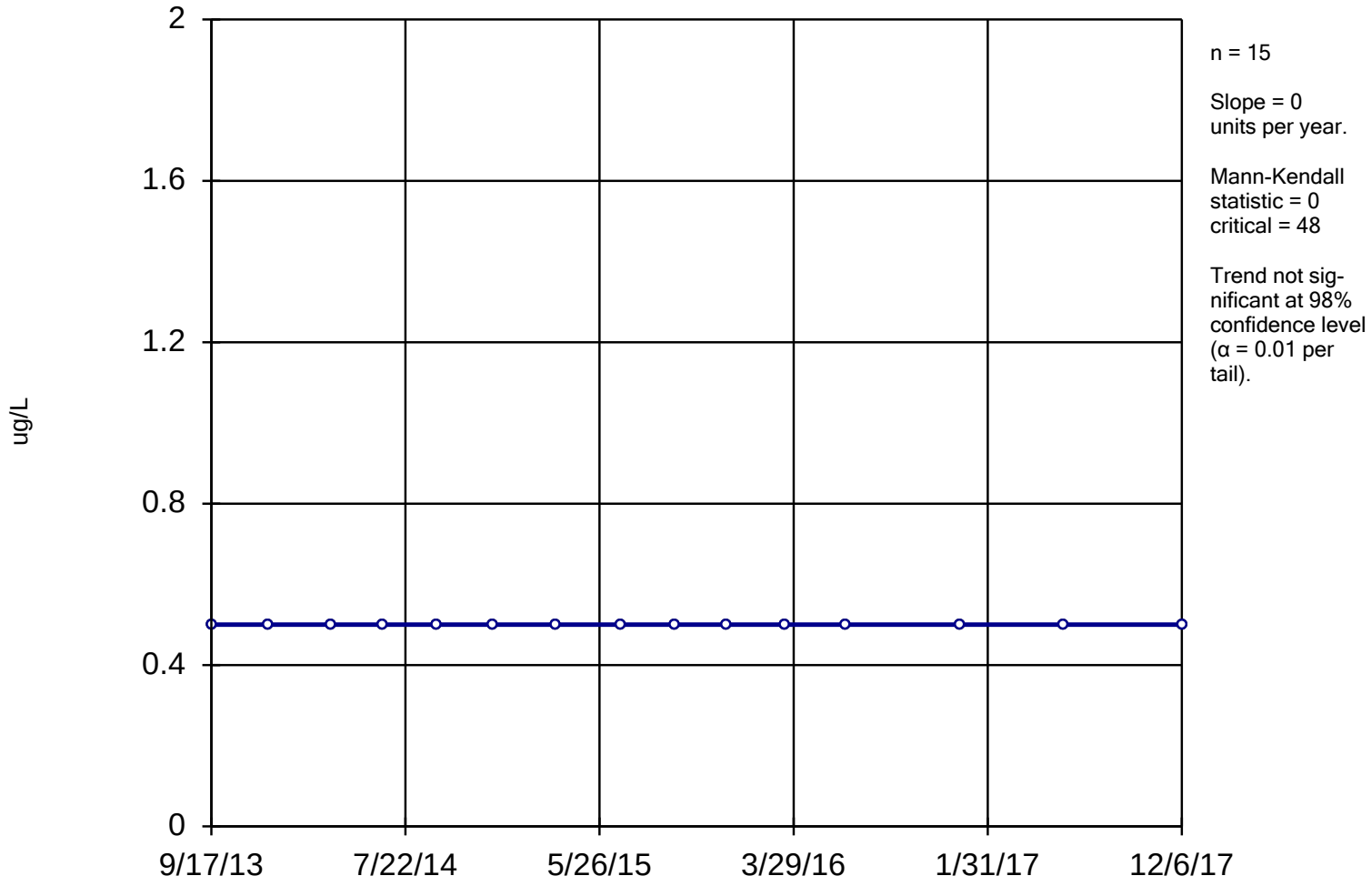
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:32 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Hollow symbols indicate censored values.

Sen's Slope Estimator

B-8D



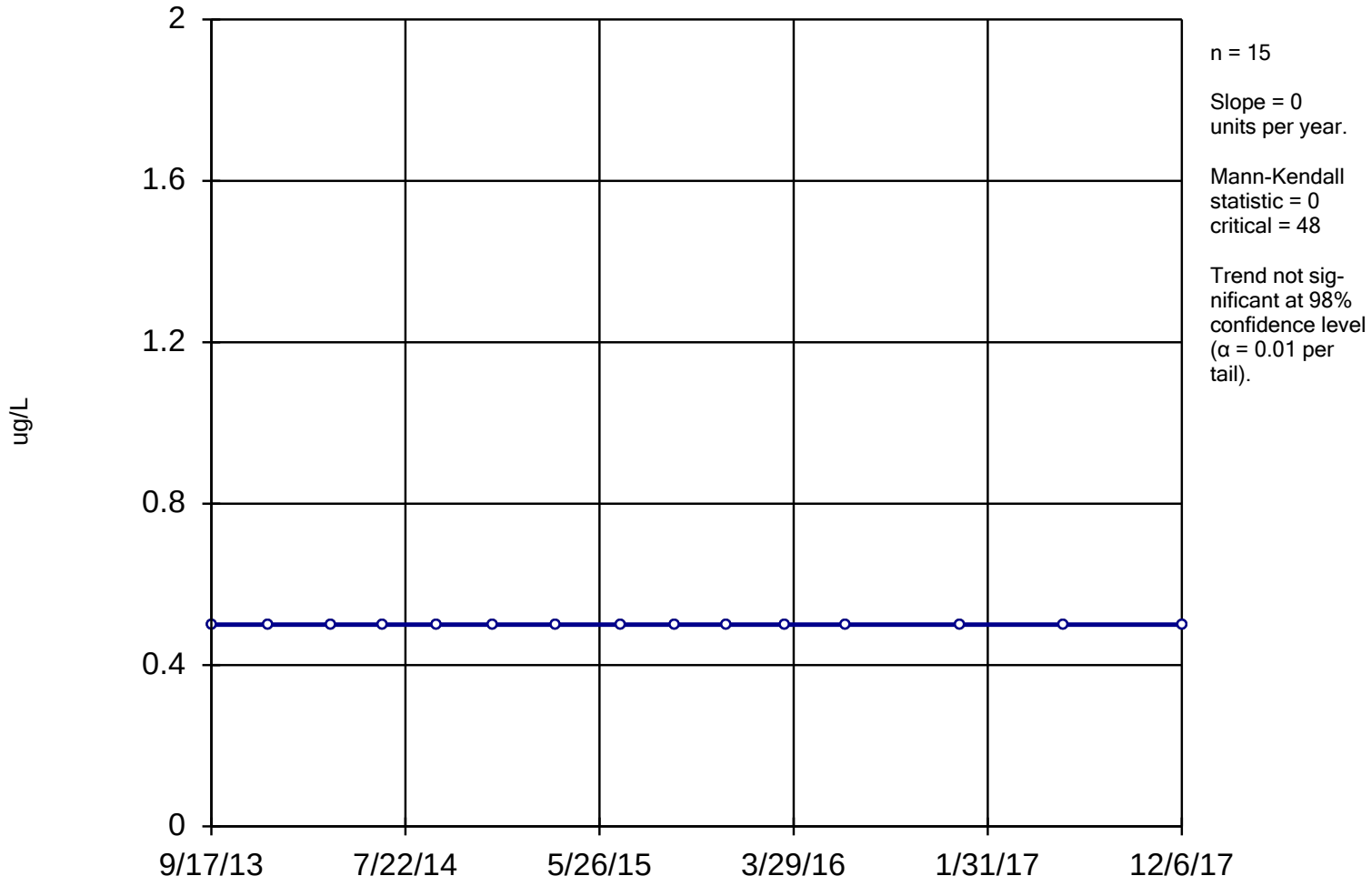
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Hollow symbols indicate censored values.

Sen's Slope Estimator

B-8I



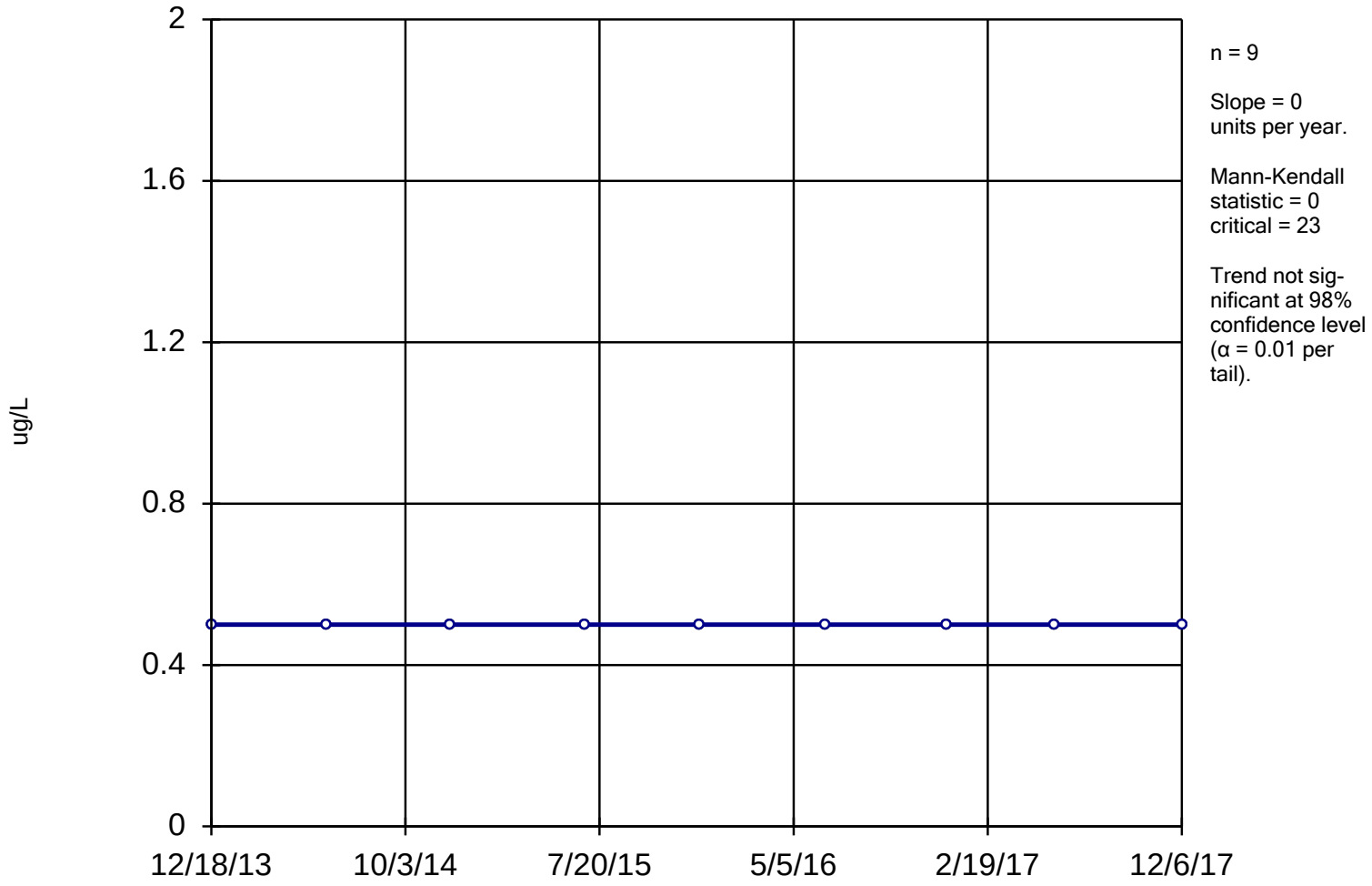
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-8S



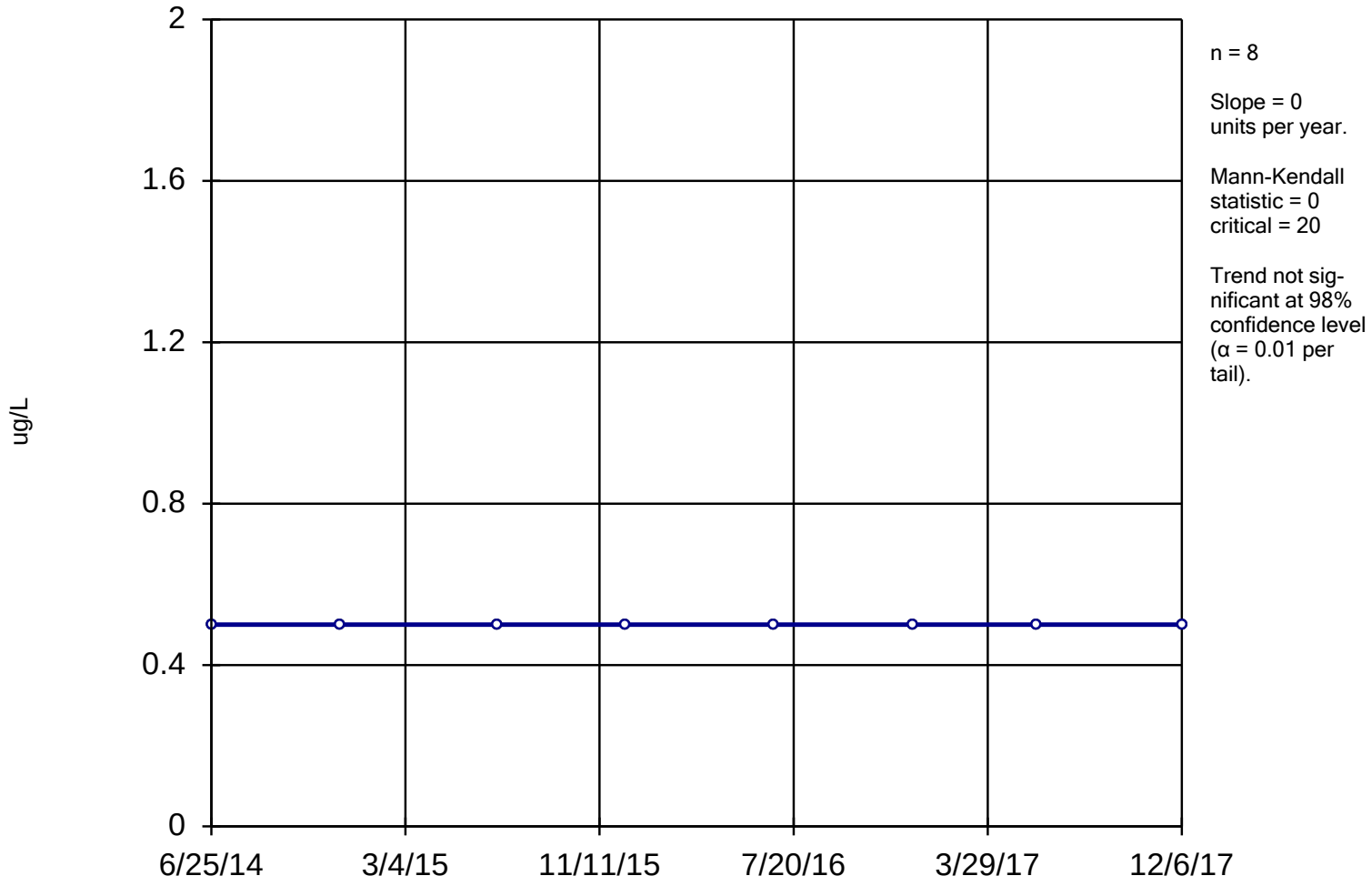
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-9S



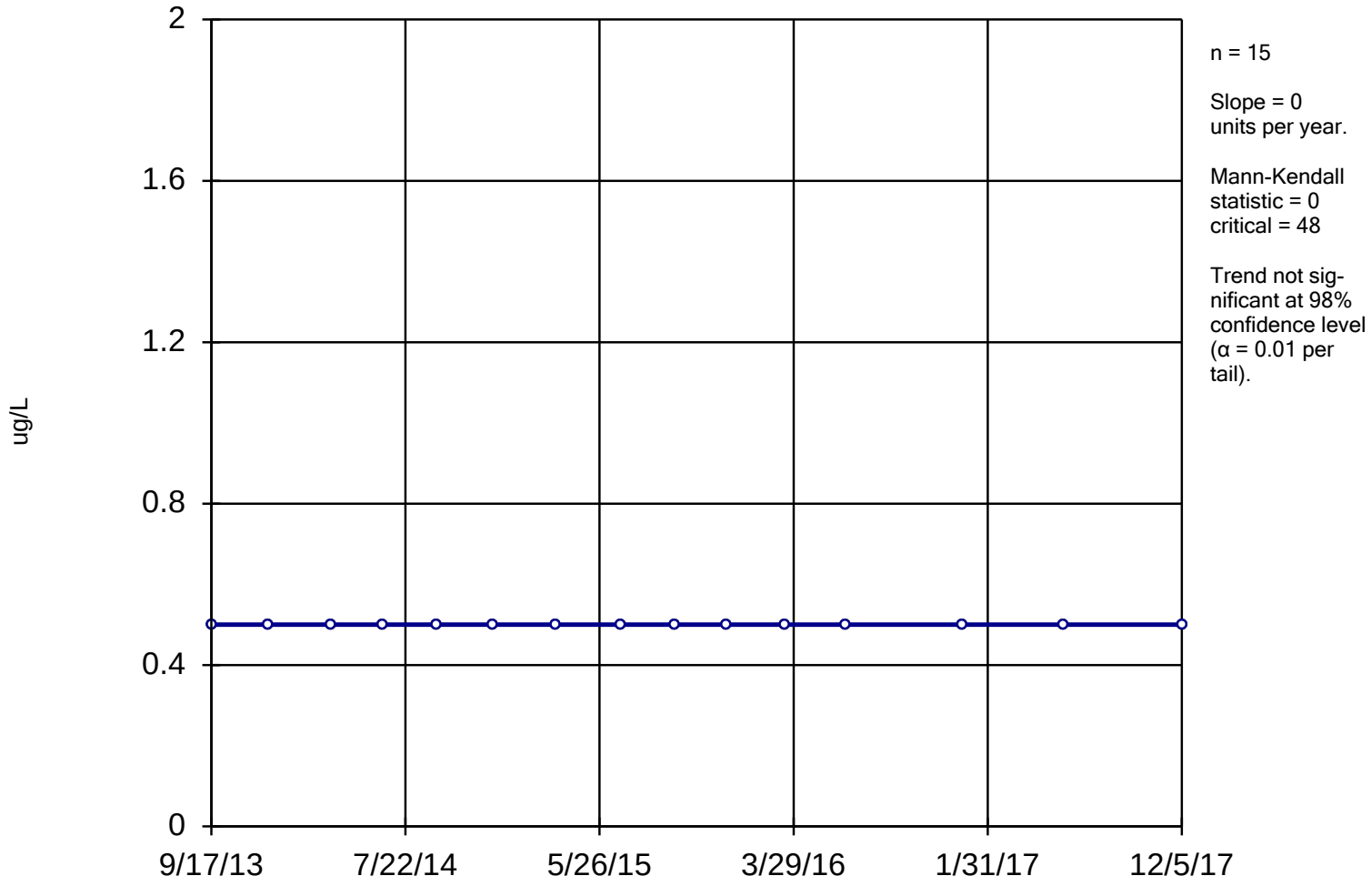
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-13D



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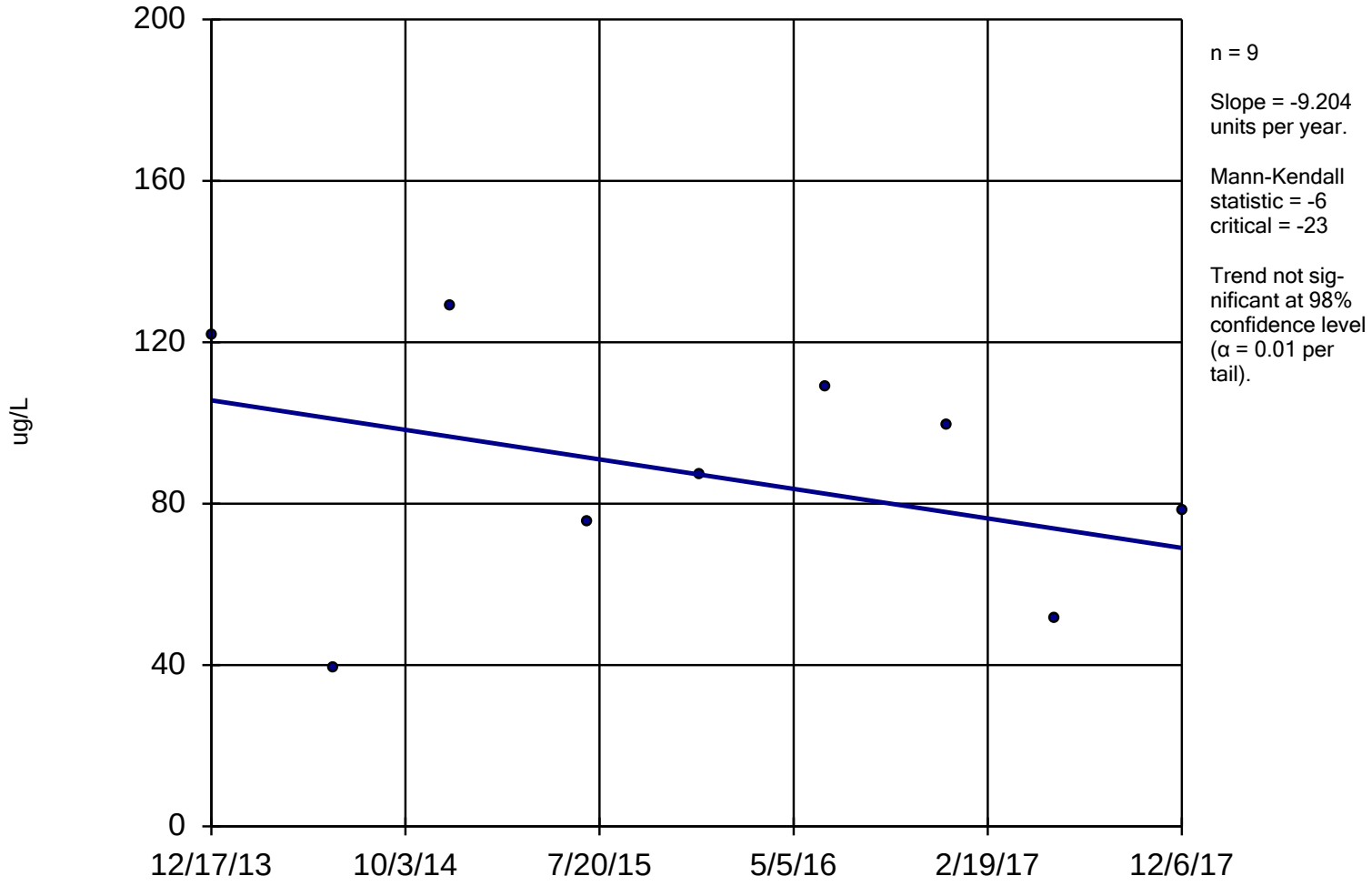
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

B-16



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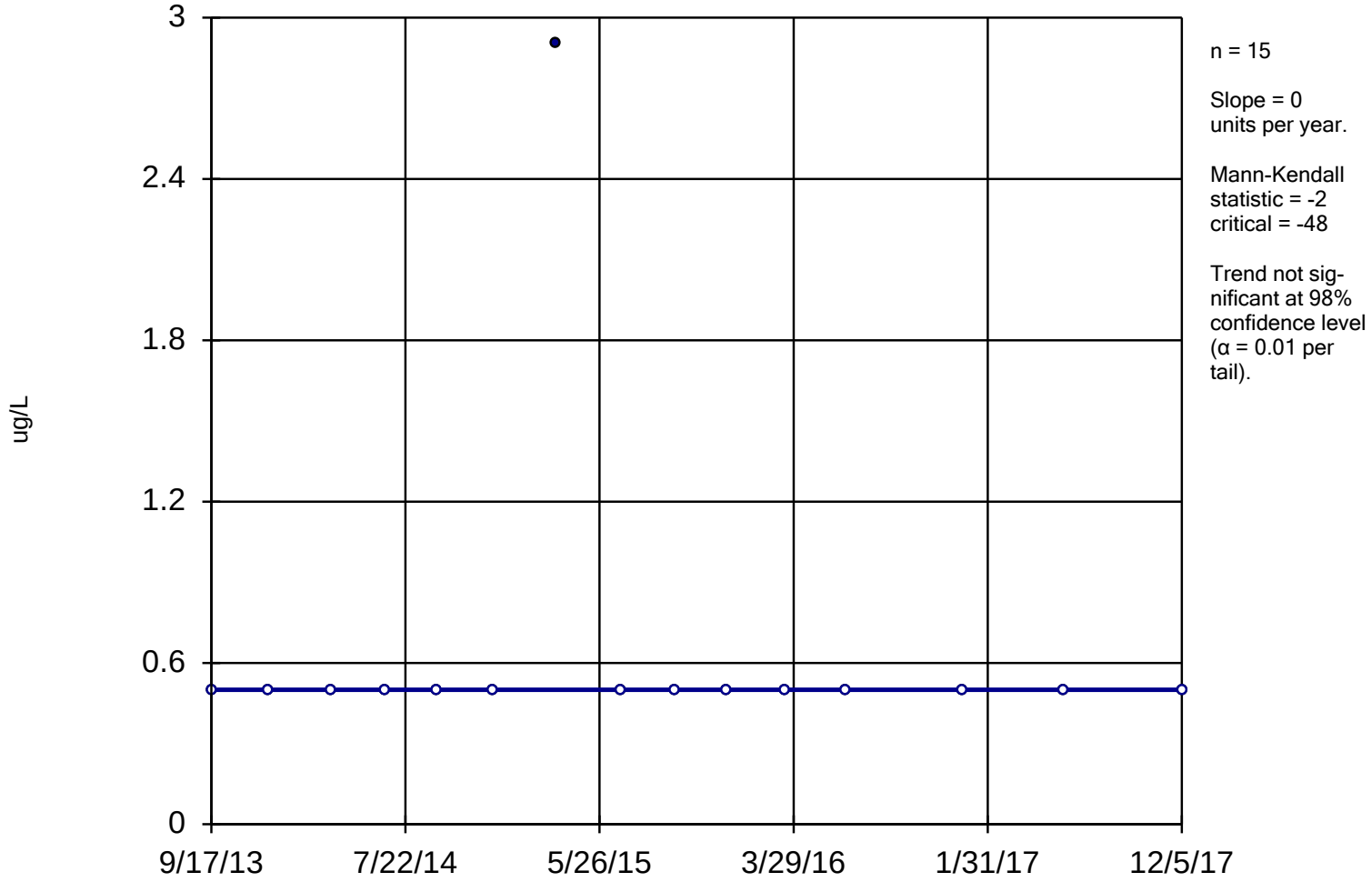
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-18



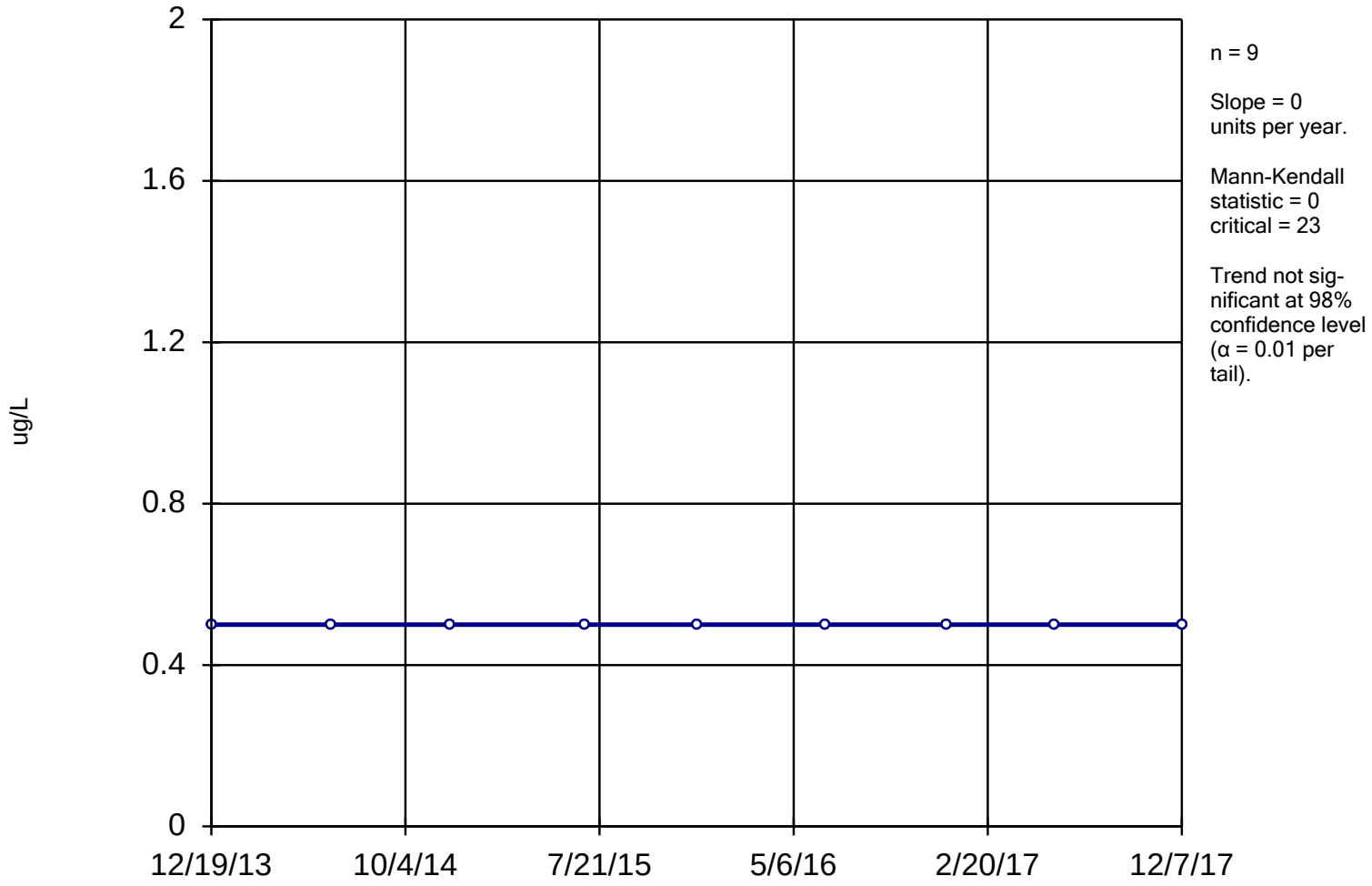
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-23I/D



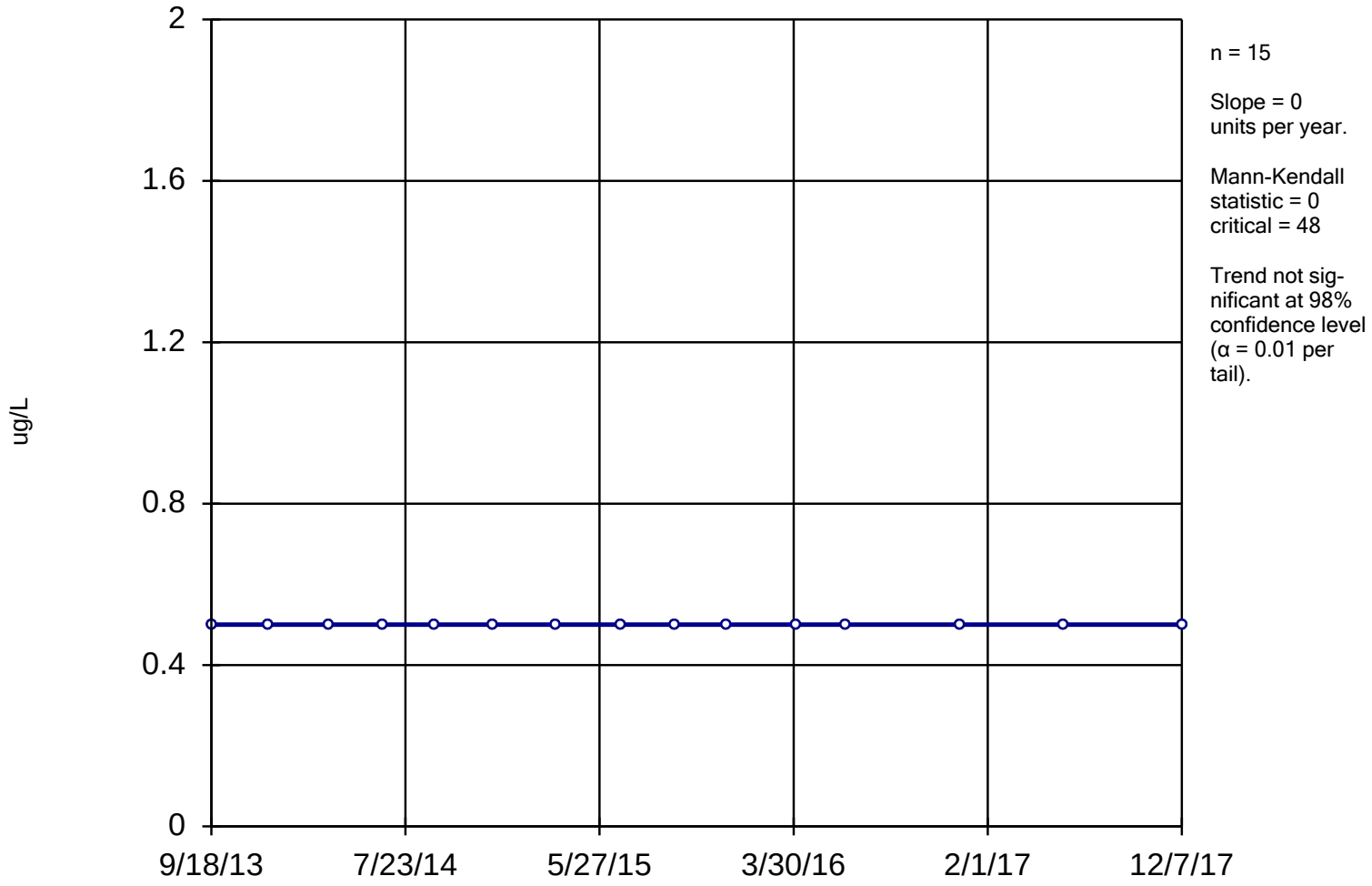
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-1D



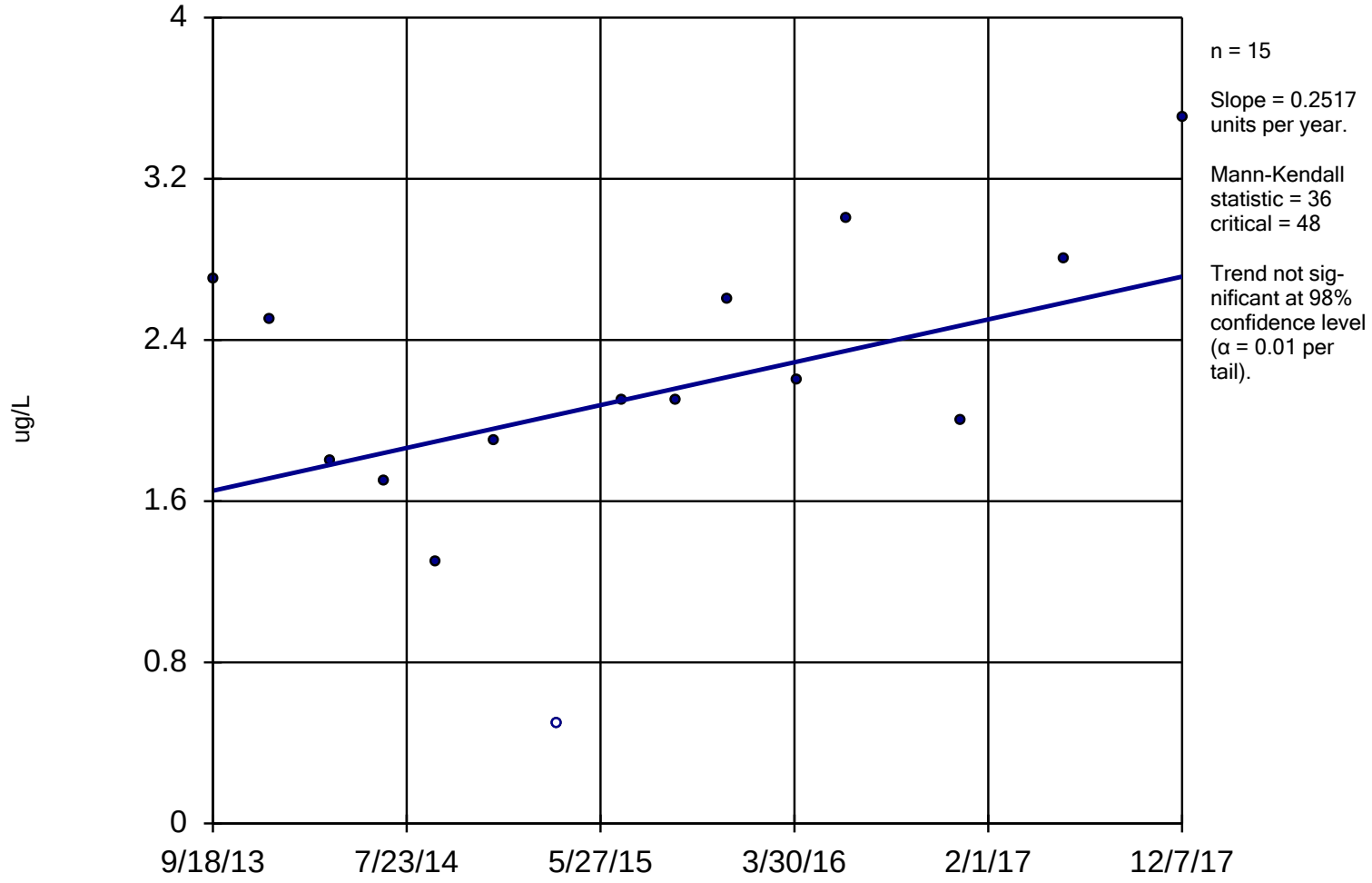
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-1I



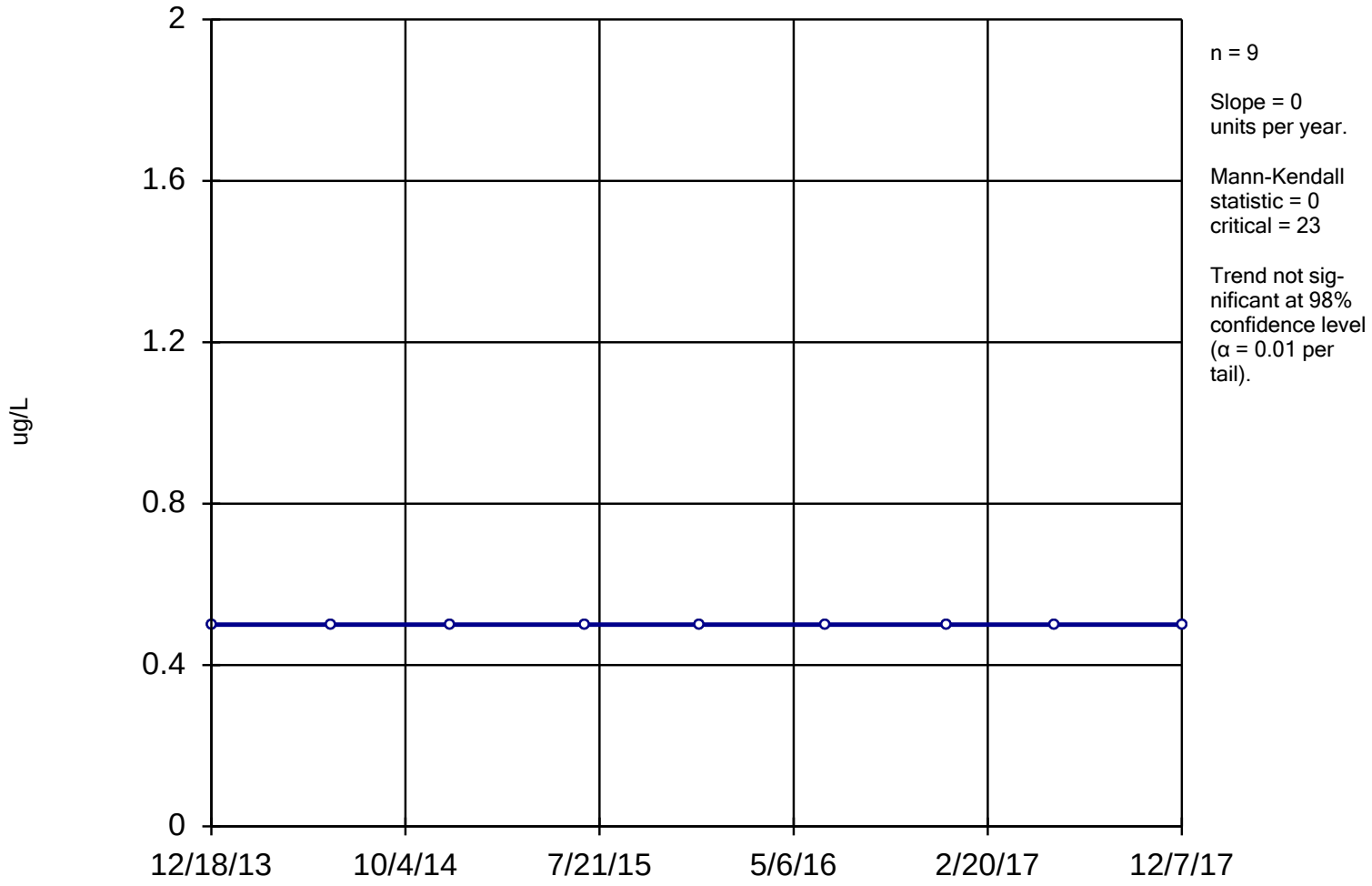
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-1S

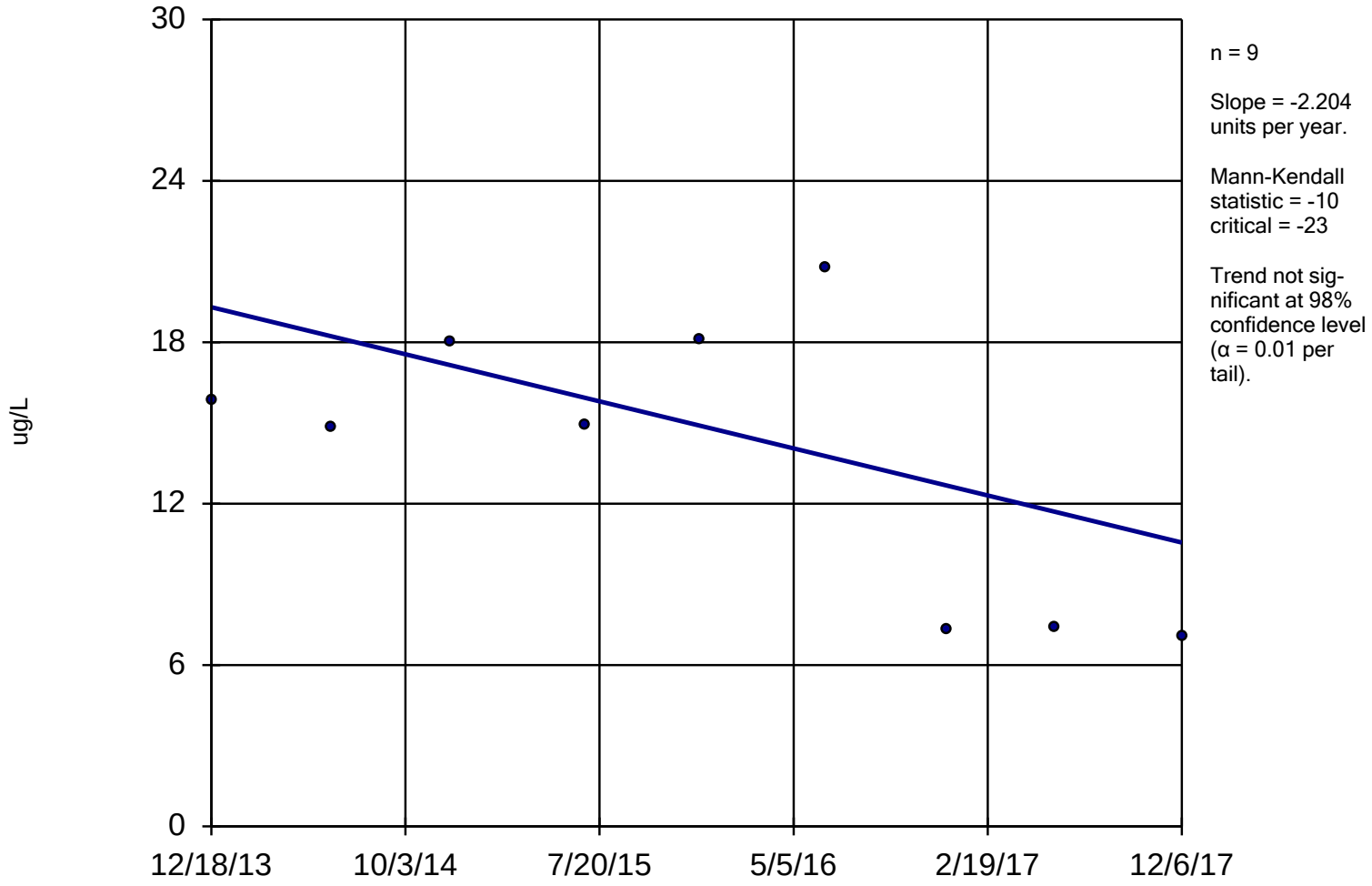


Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

C-2D



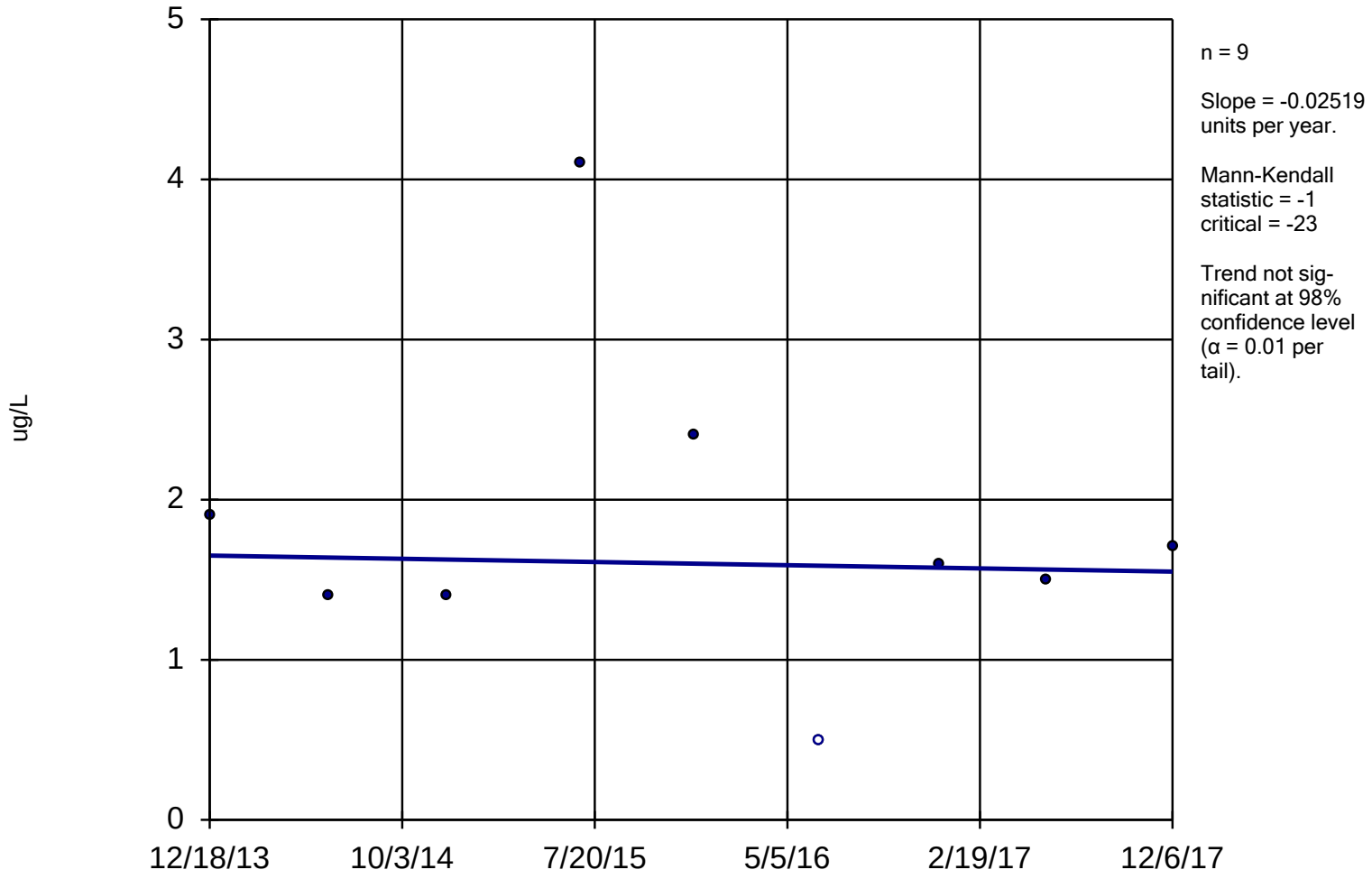
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-2I



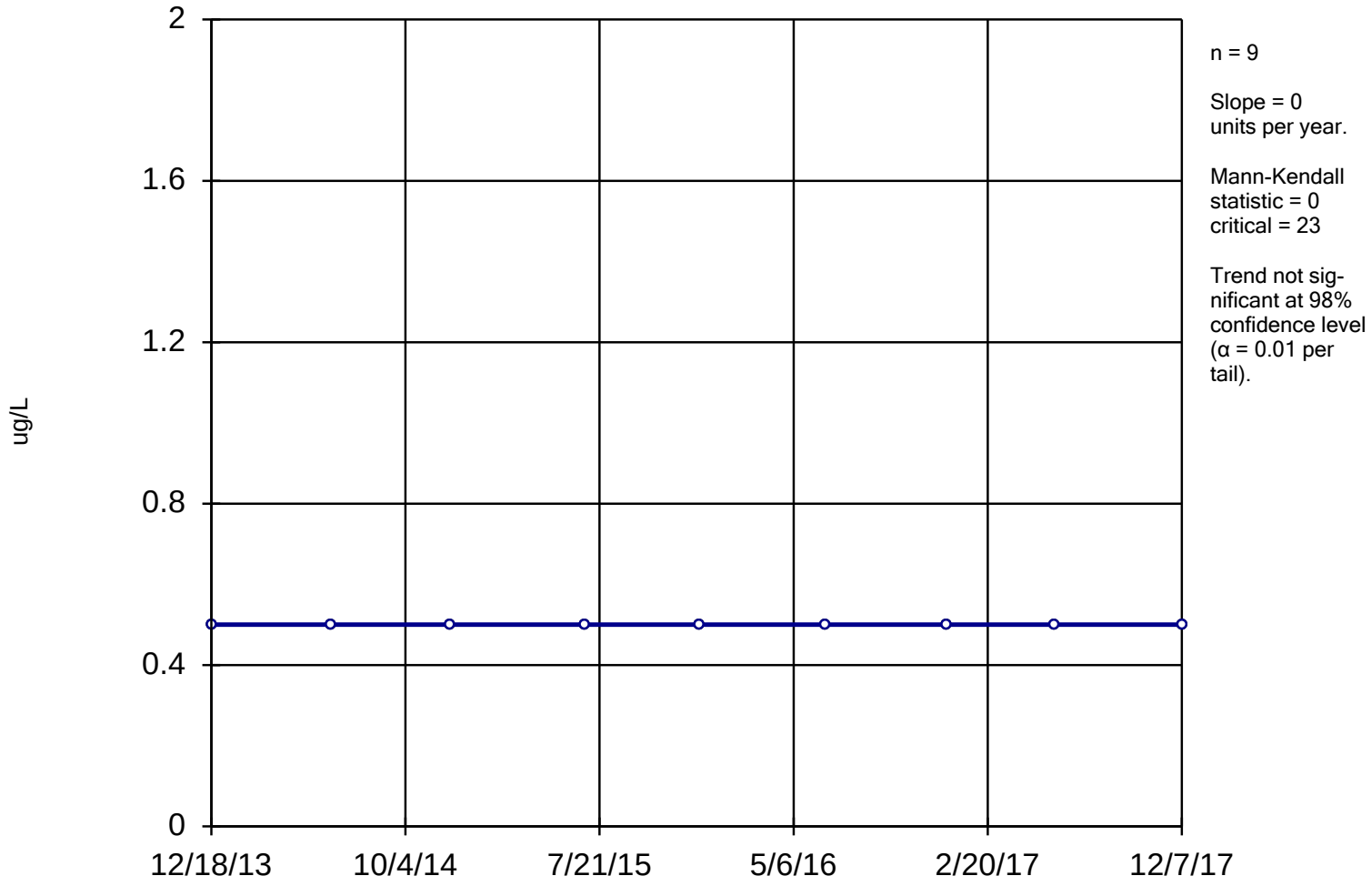
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-2S



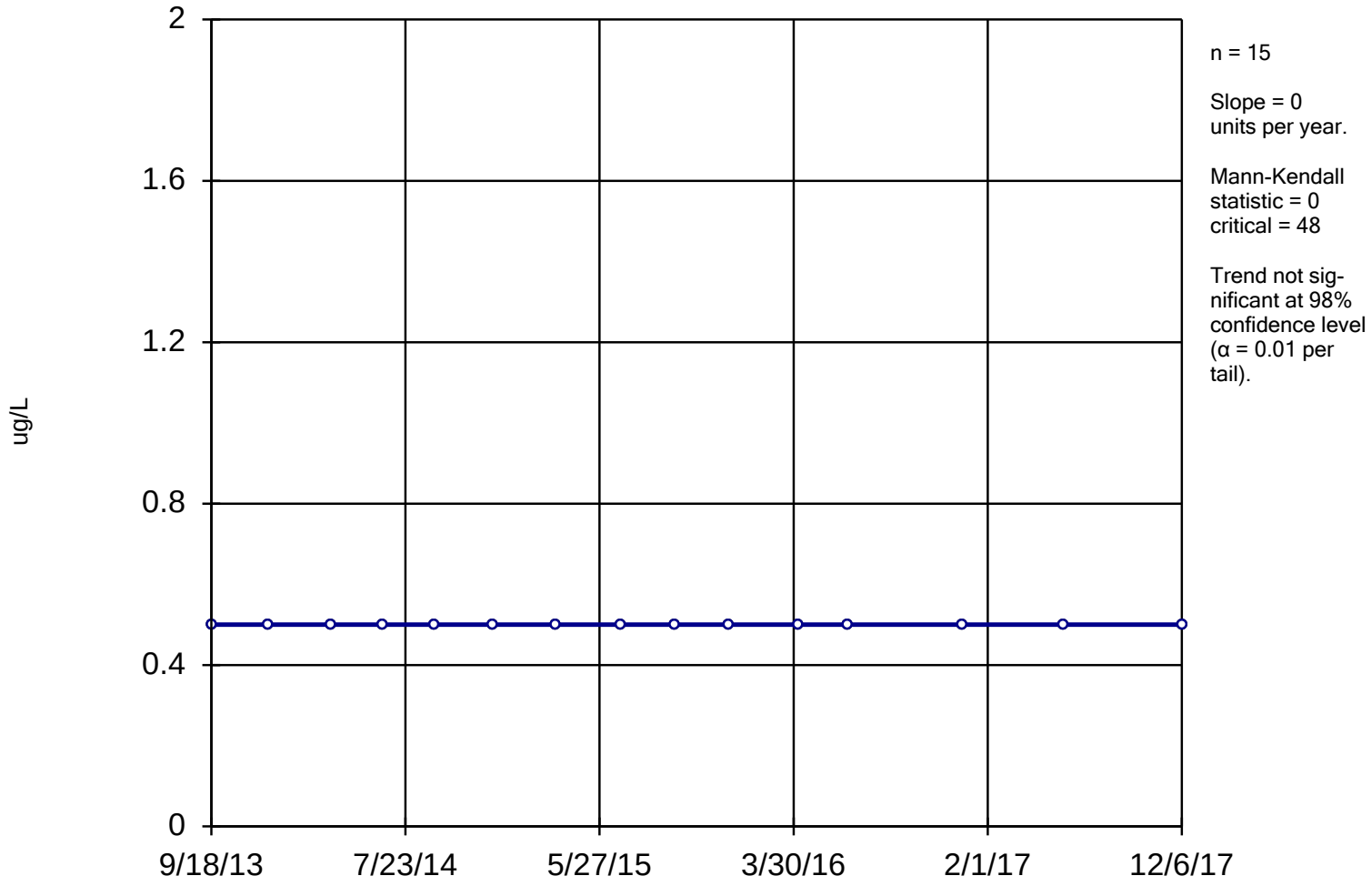
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-3D



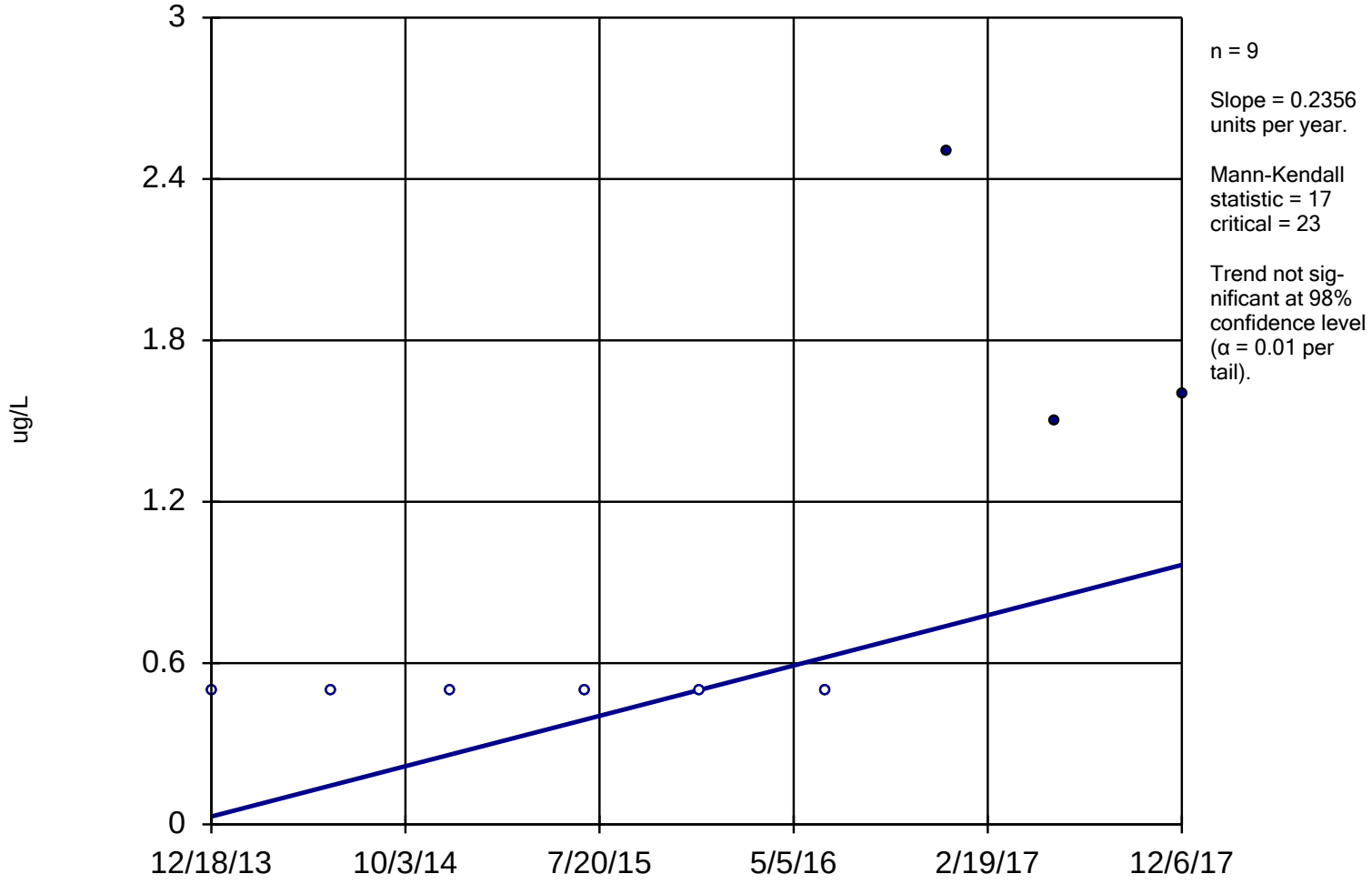
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-3I



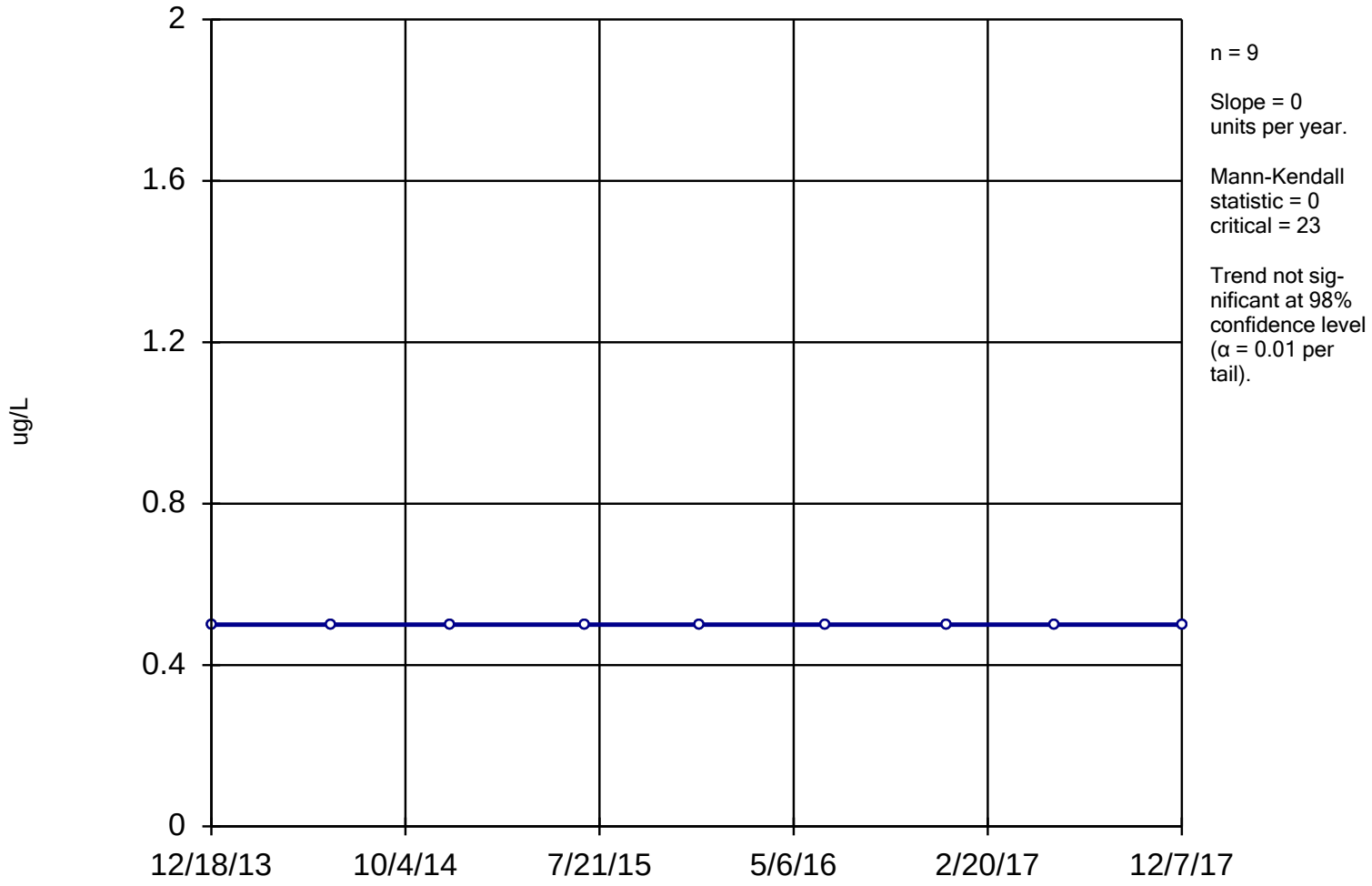
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-3S



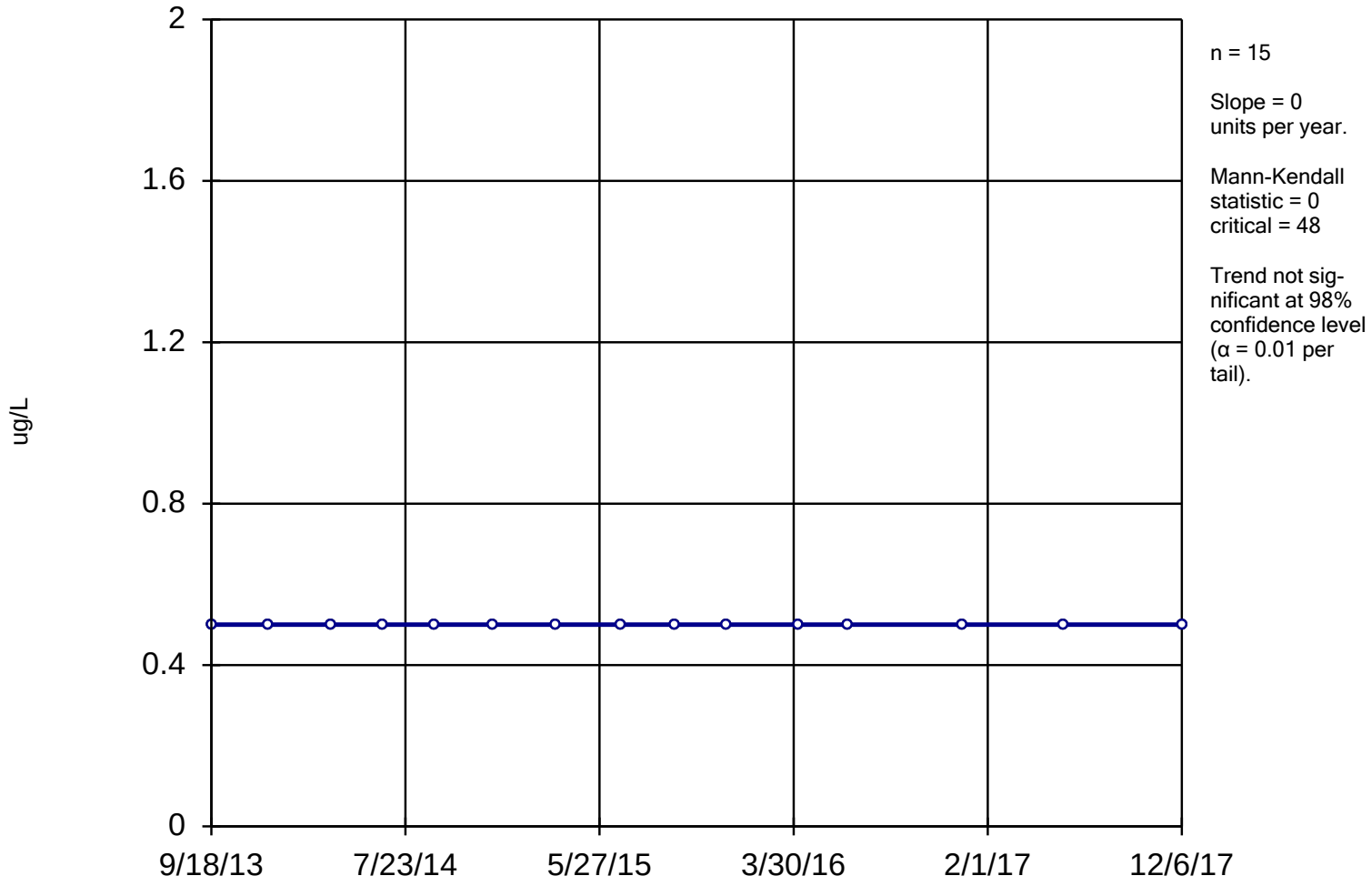
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Hollow symbols indicate censored values.

Sen's Slope Estimator

C-6



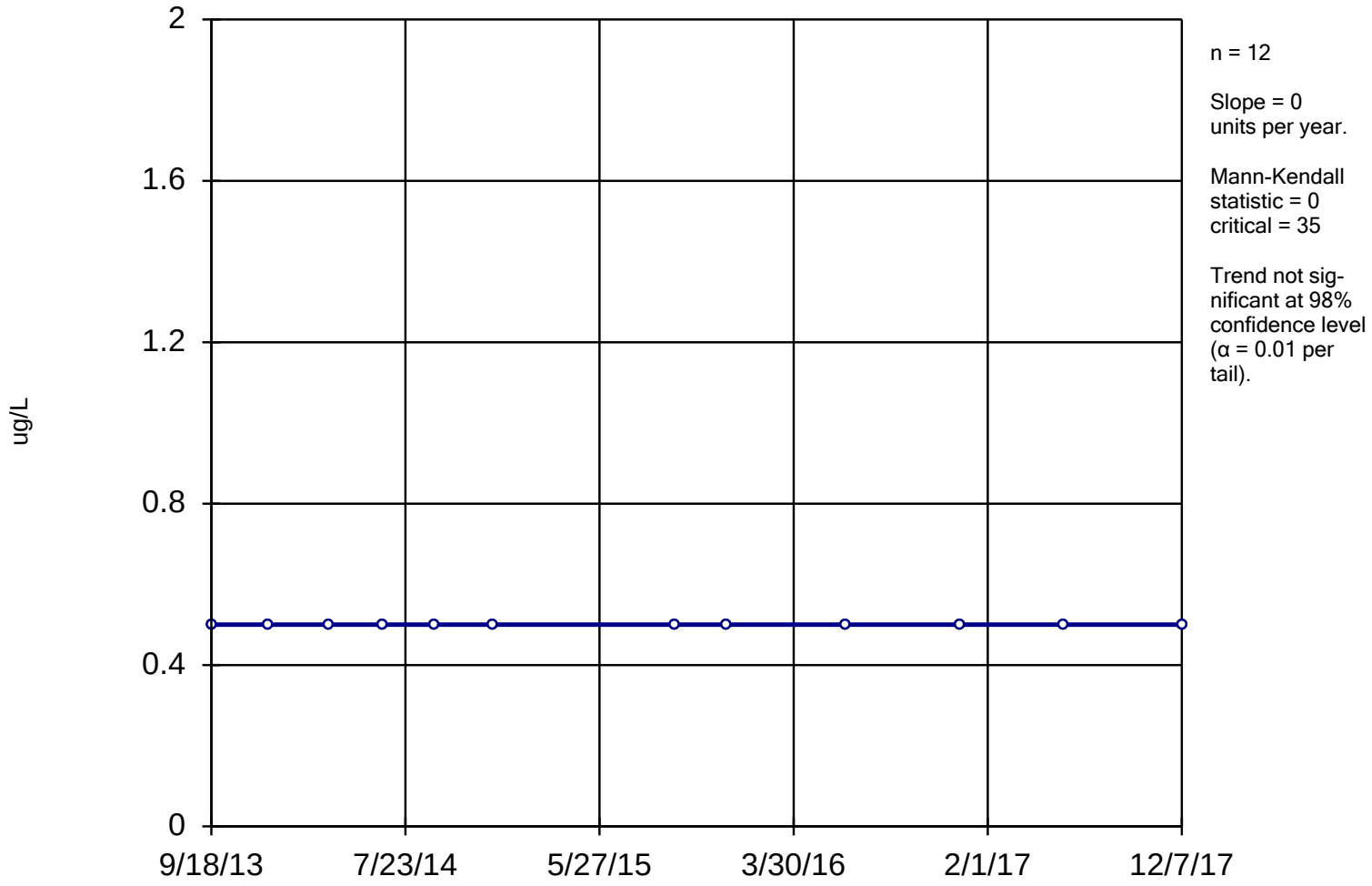
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Hollow symbols indicate censored values.

Sen's Slope Estimator

C-8



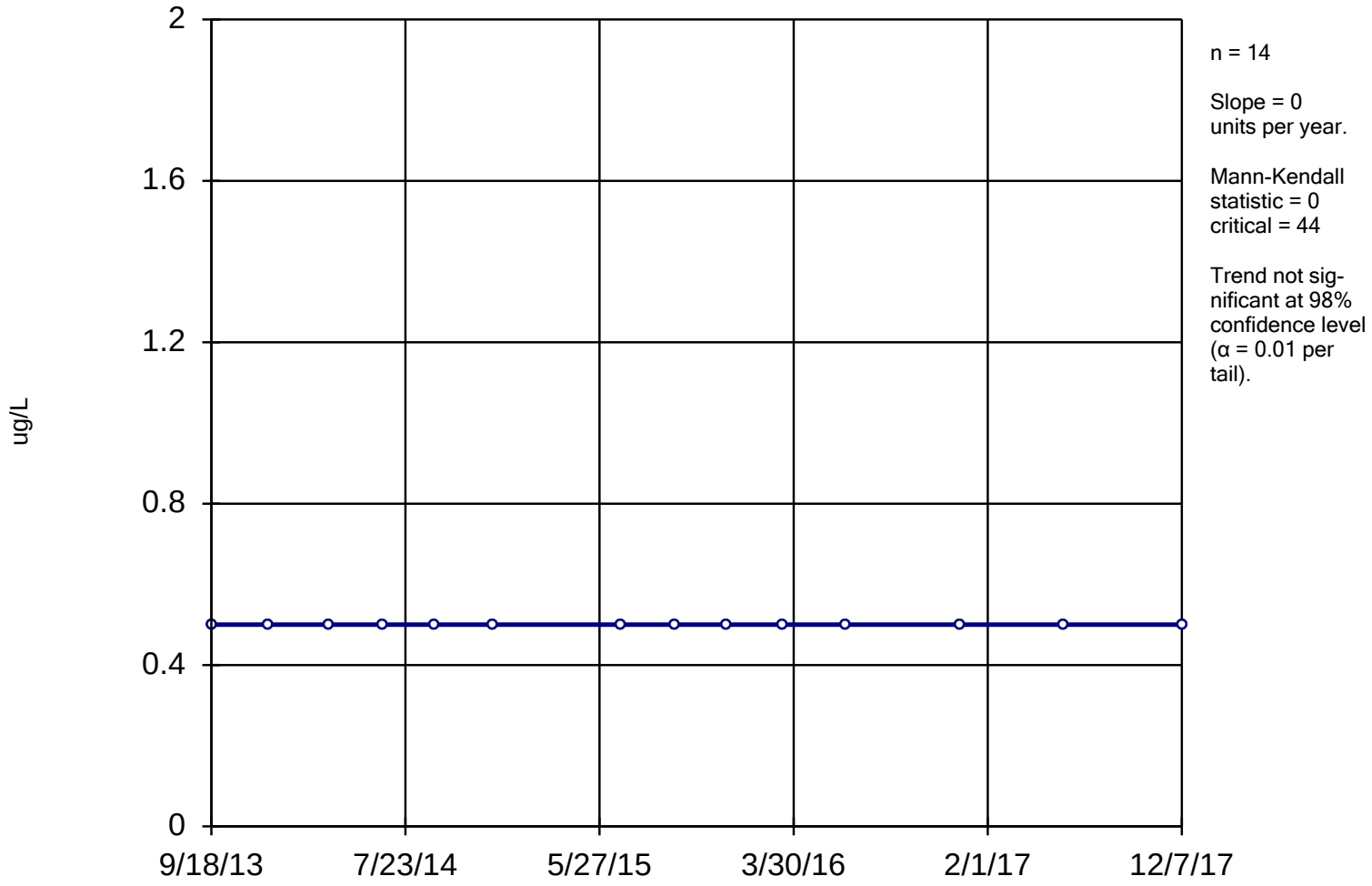
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-9



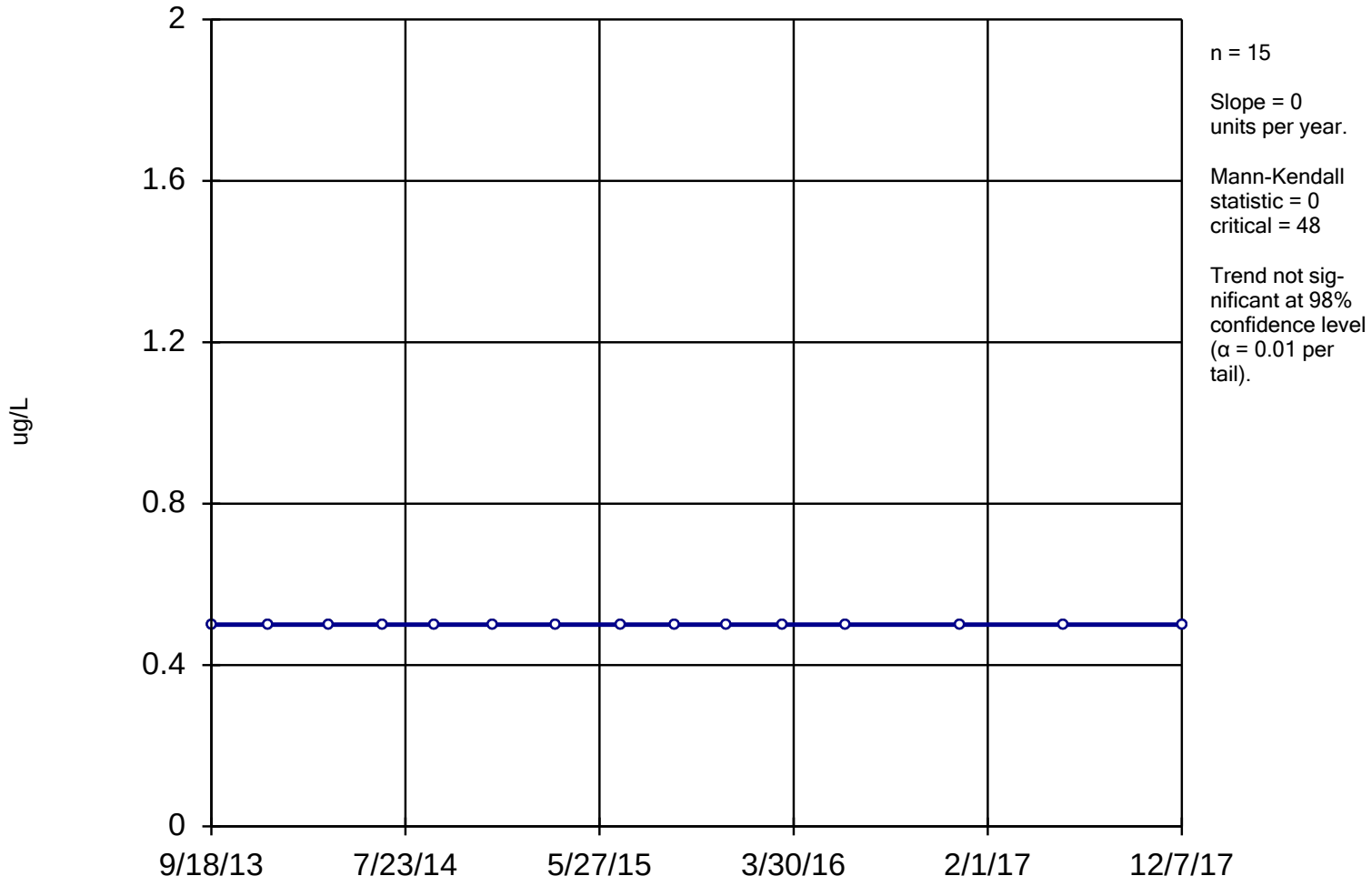
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Hollow symbols indicate censored values.

Sen's Slope Estimator

C-10D



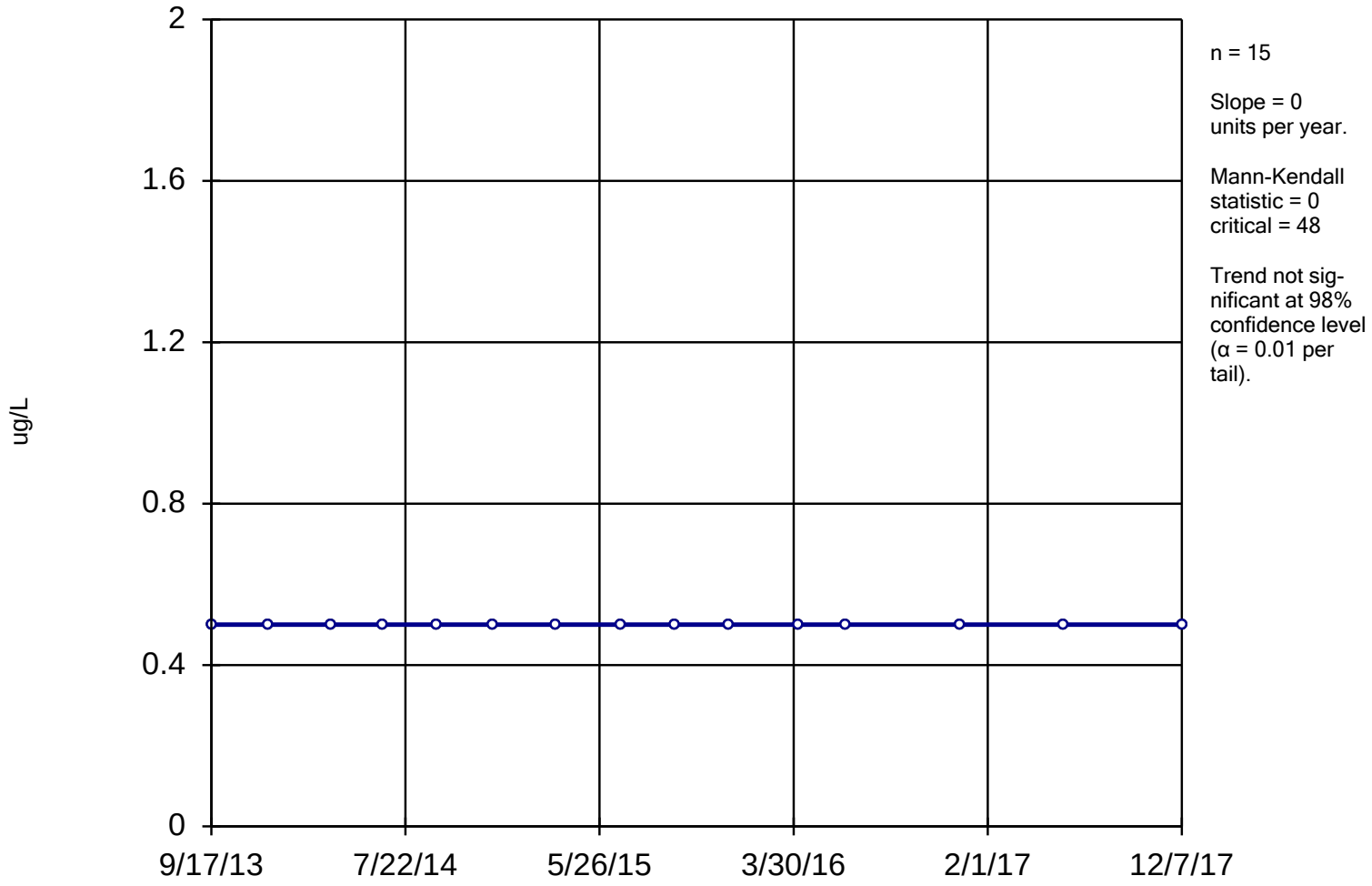
Constituent: 1,2-DCE Analysis Run 12/28/2018 11:33 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-11I



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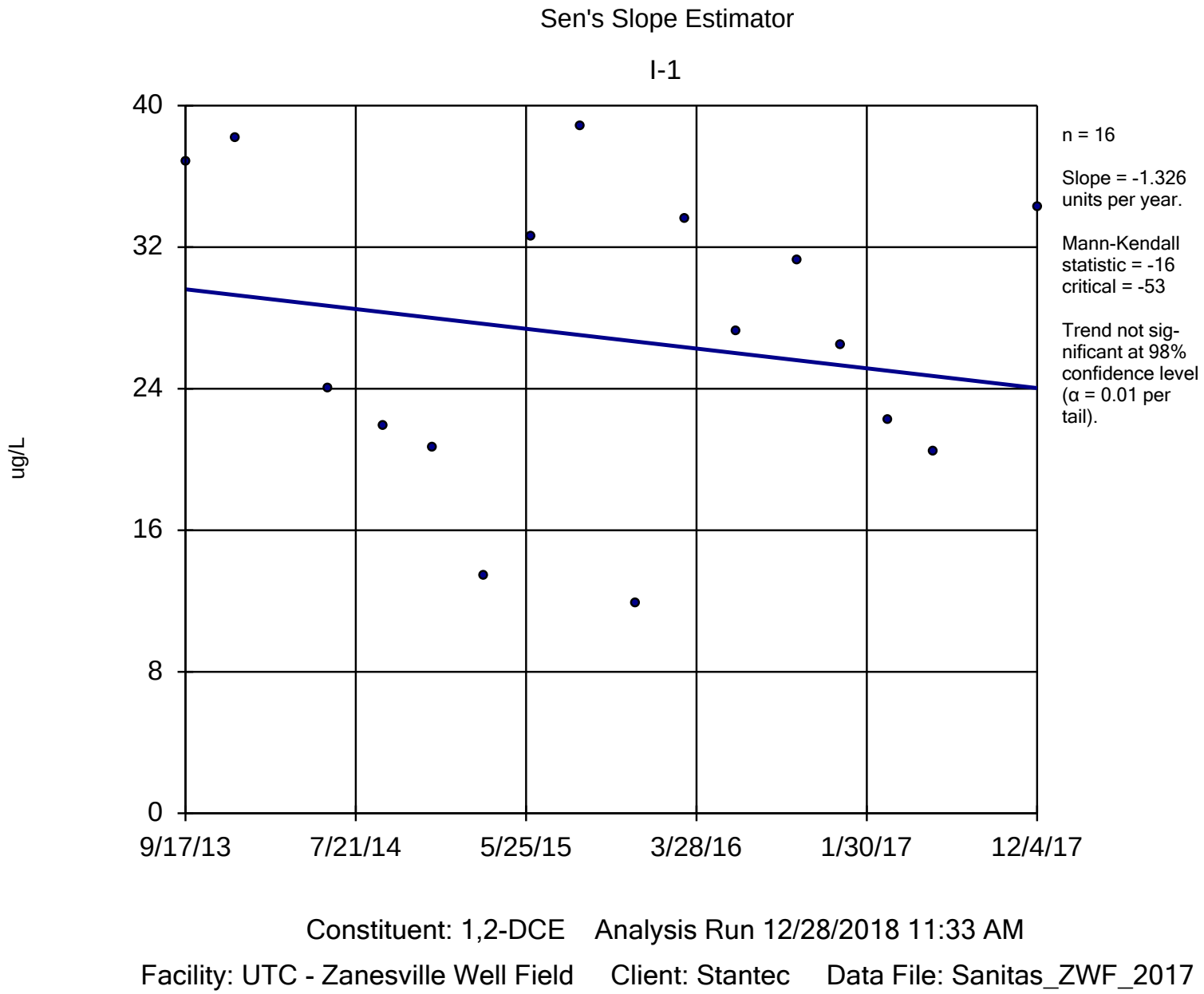
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017



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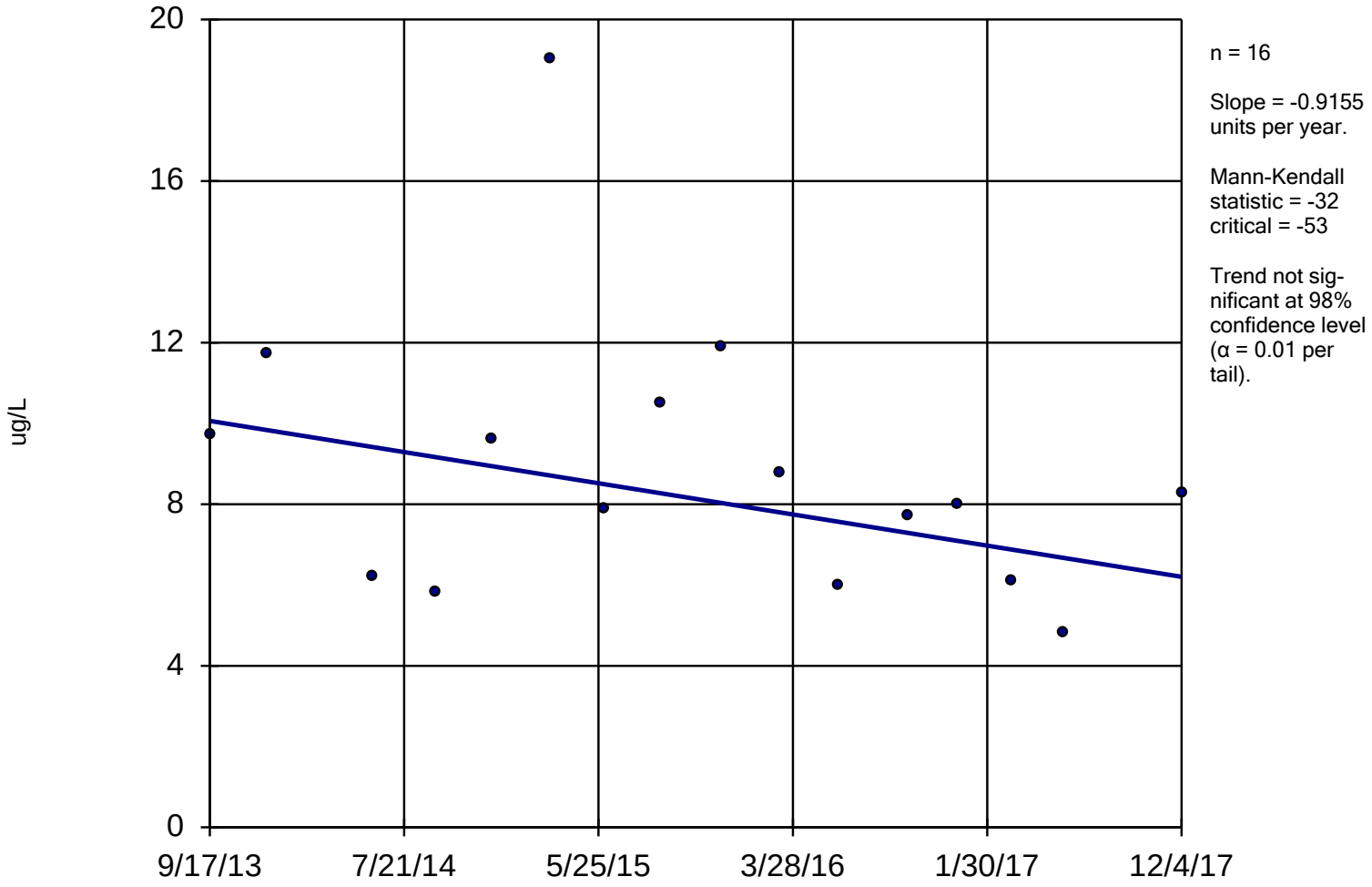
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

I-2



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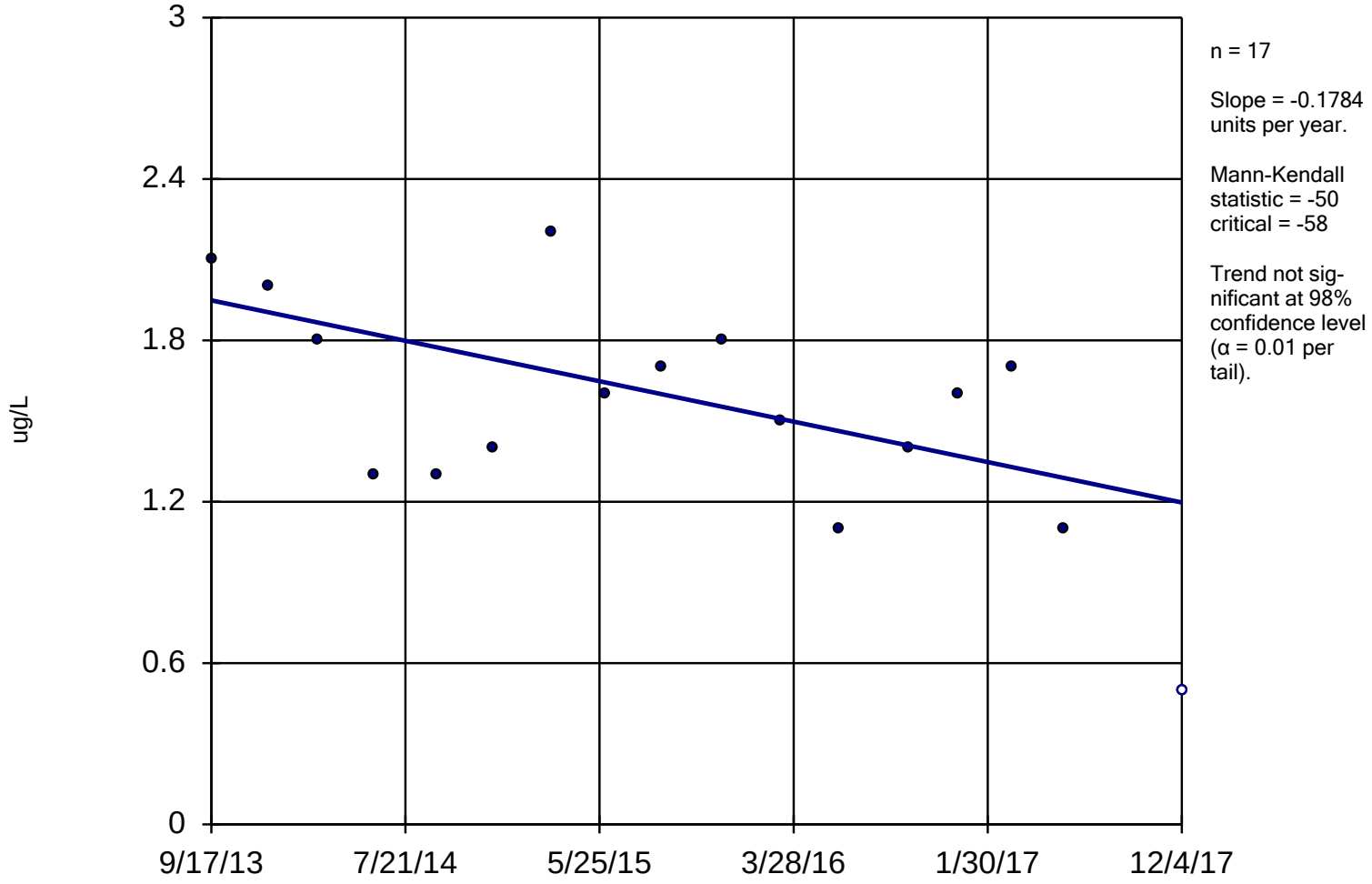
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

I-3



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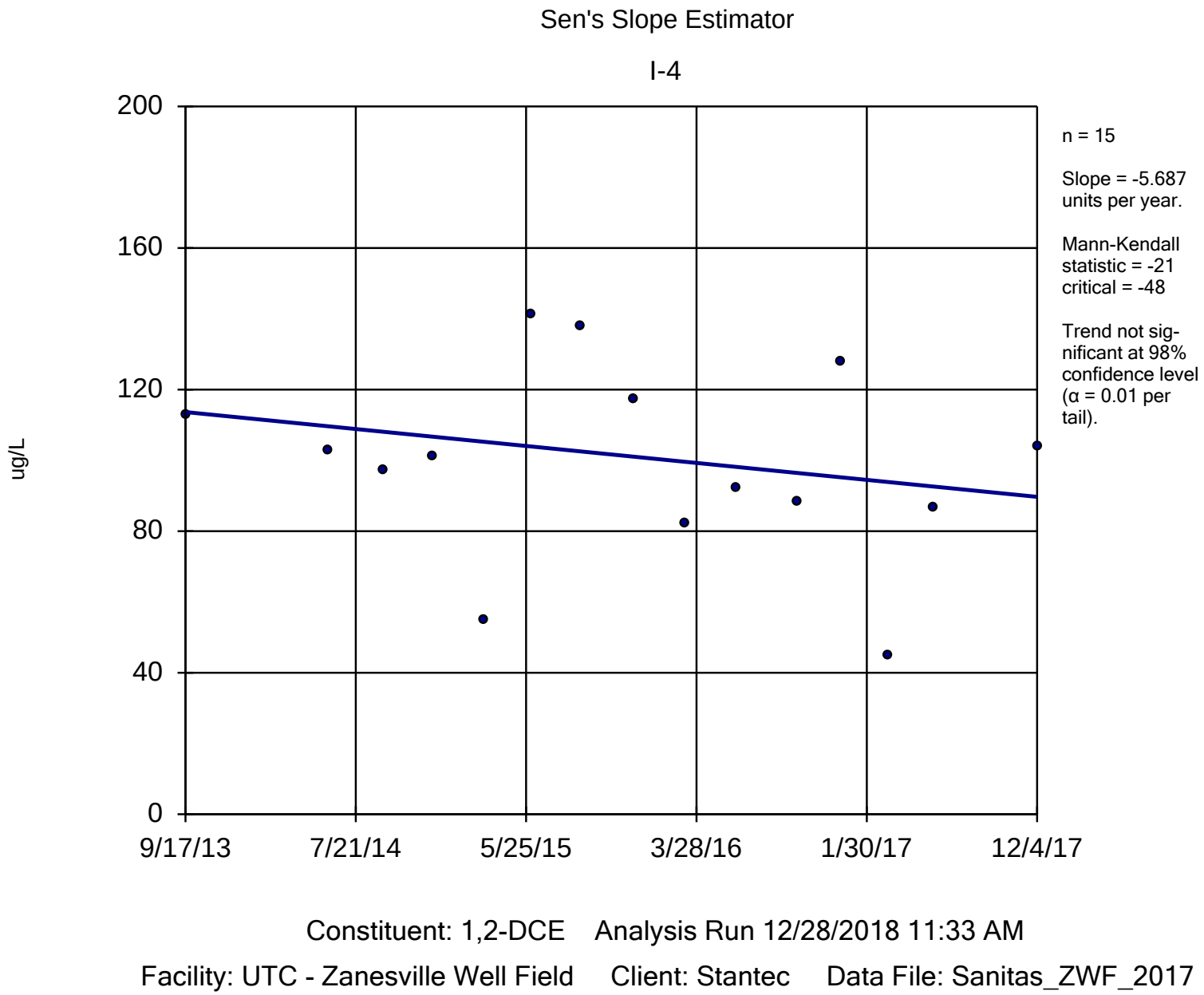

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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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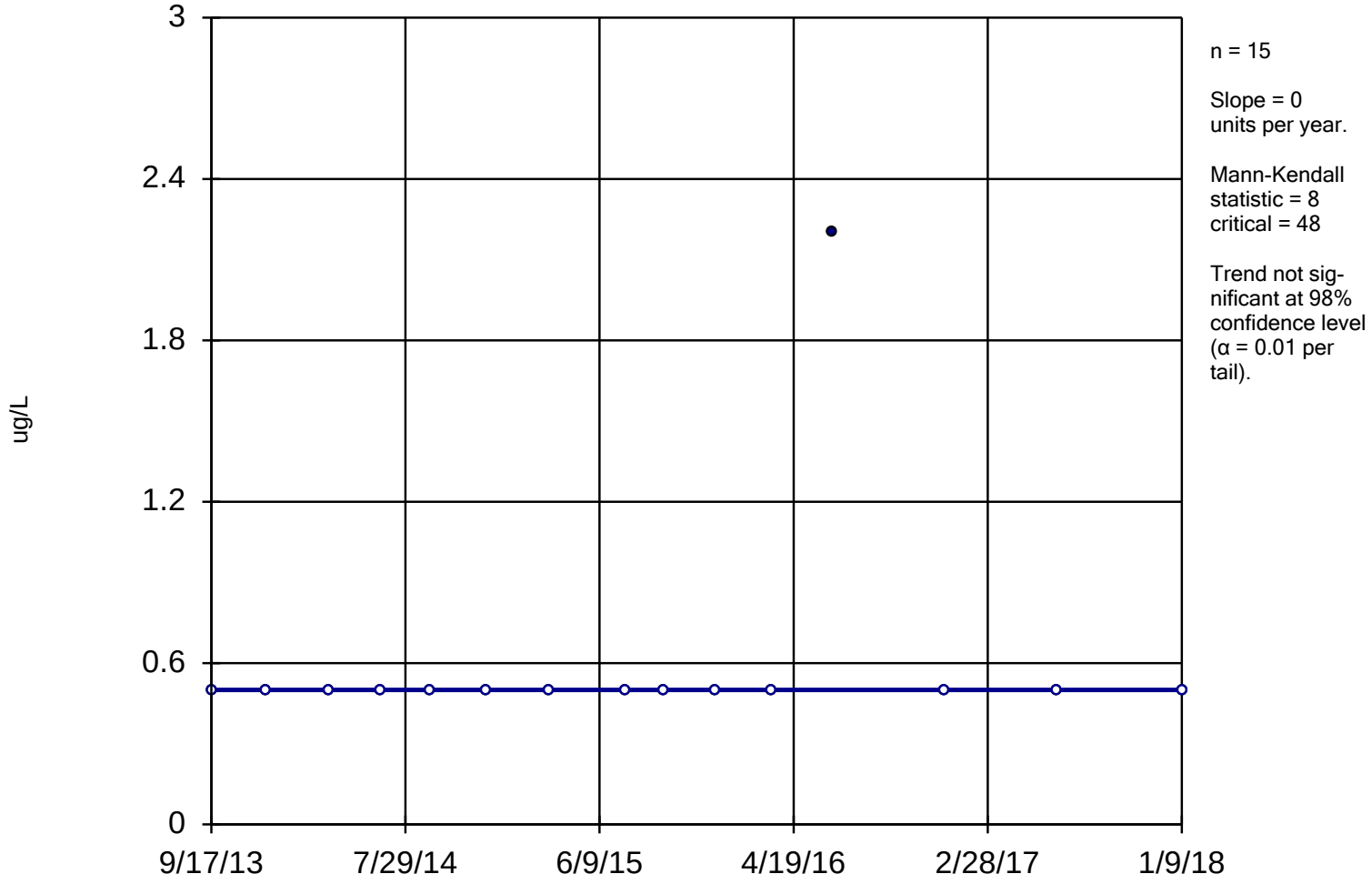
Sen's Slope Estimator

S-2DB



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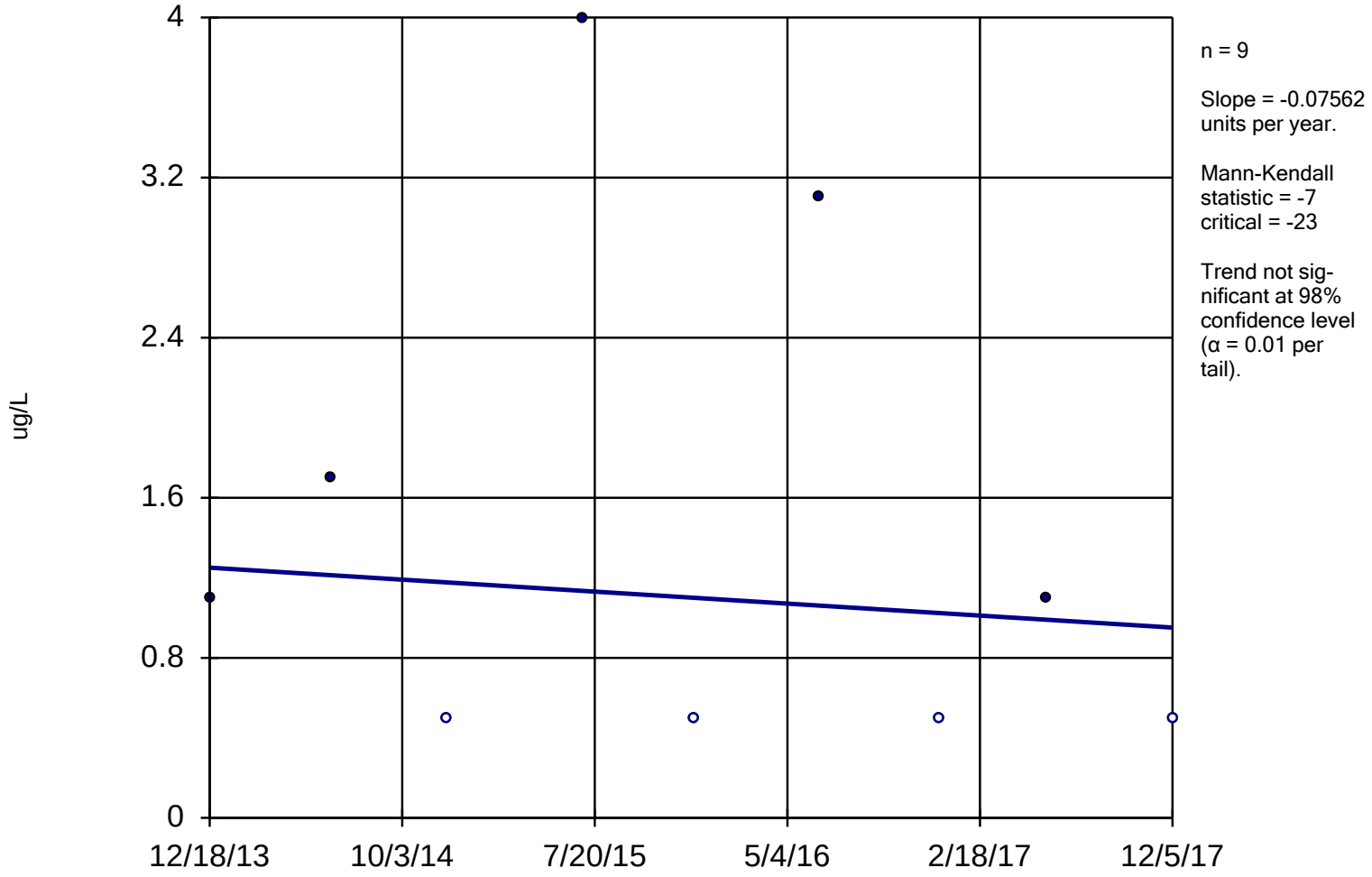
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

SM-1



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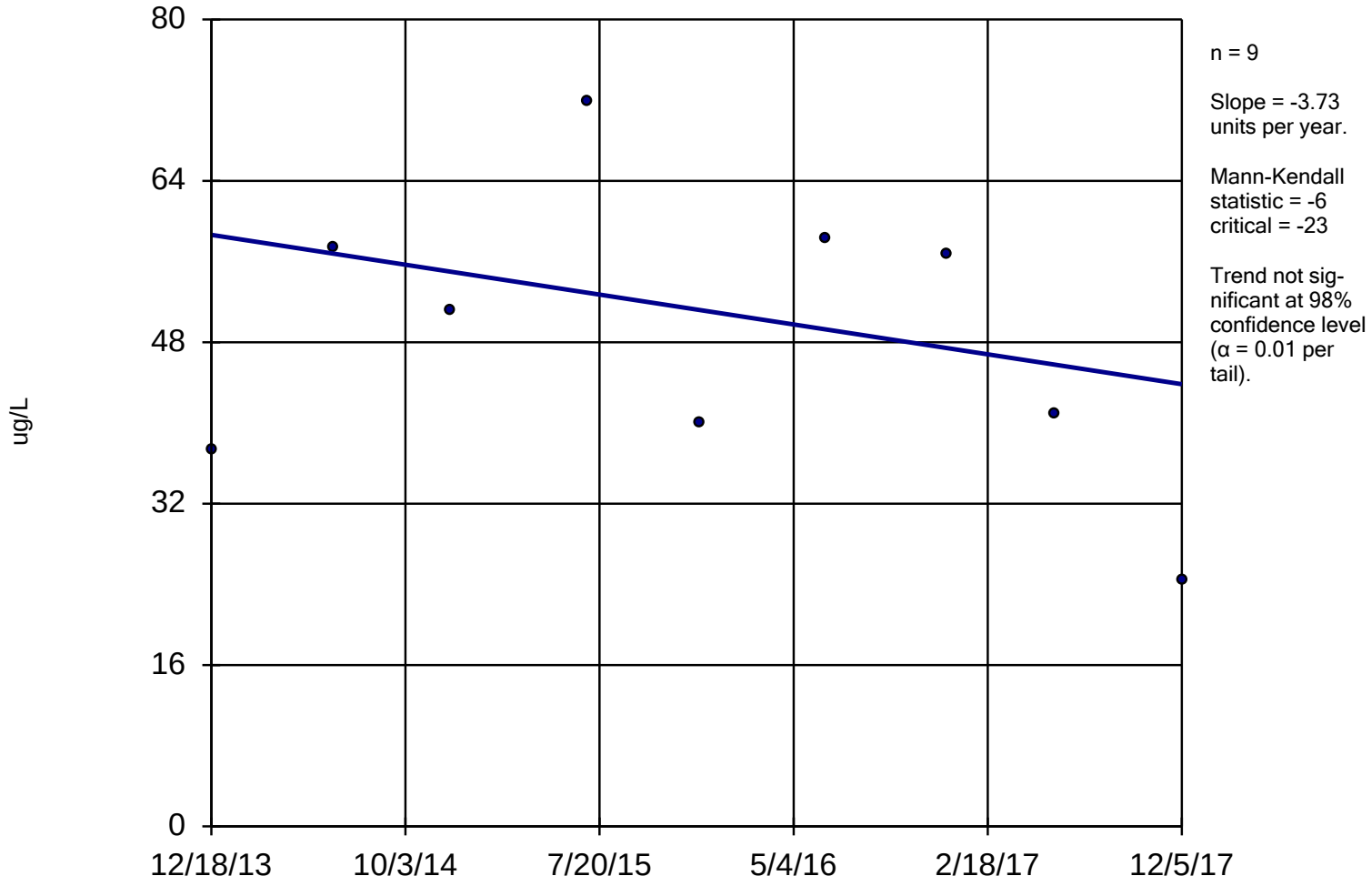
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

SM-2



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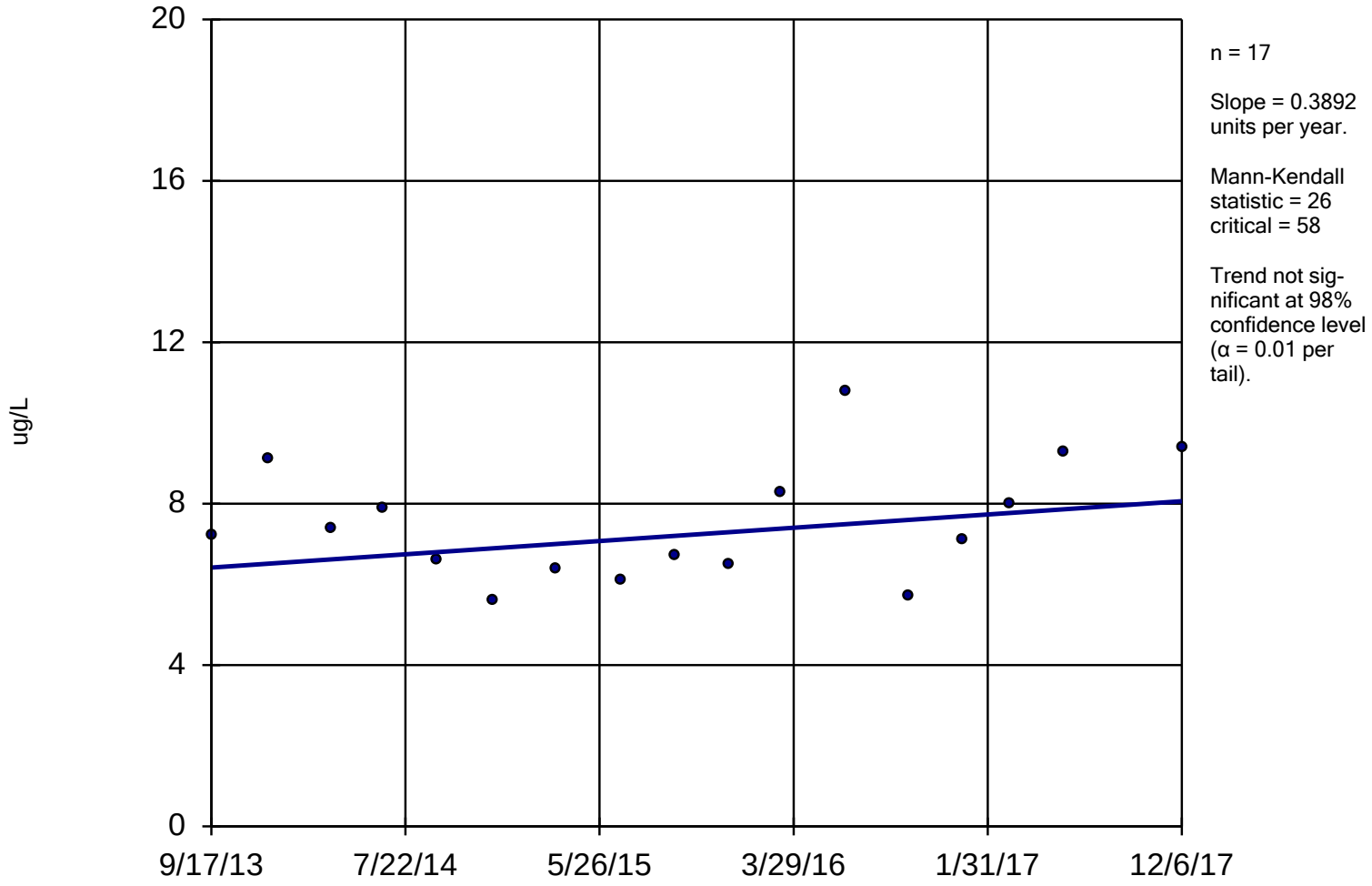
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

W-6



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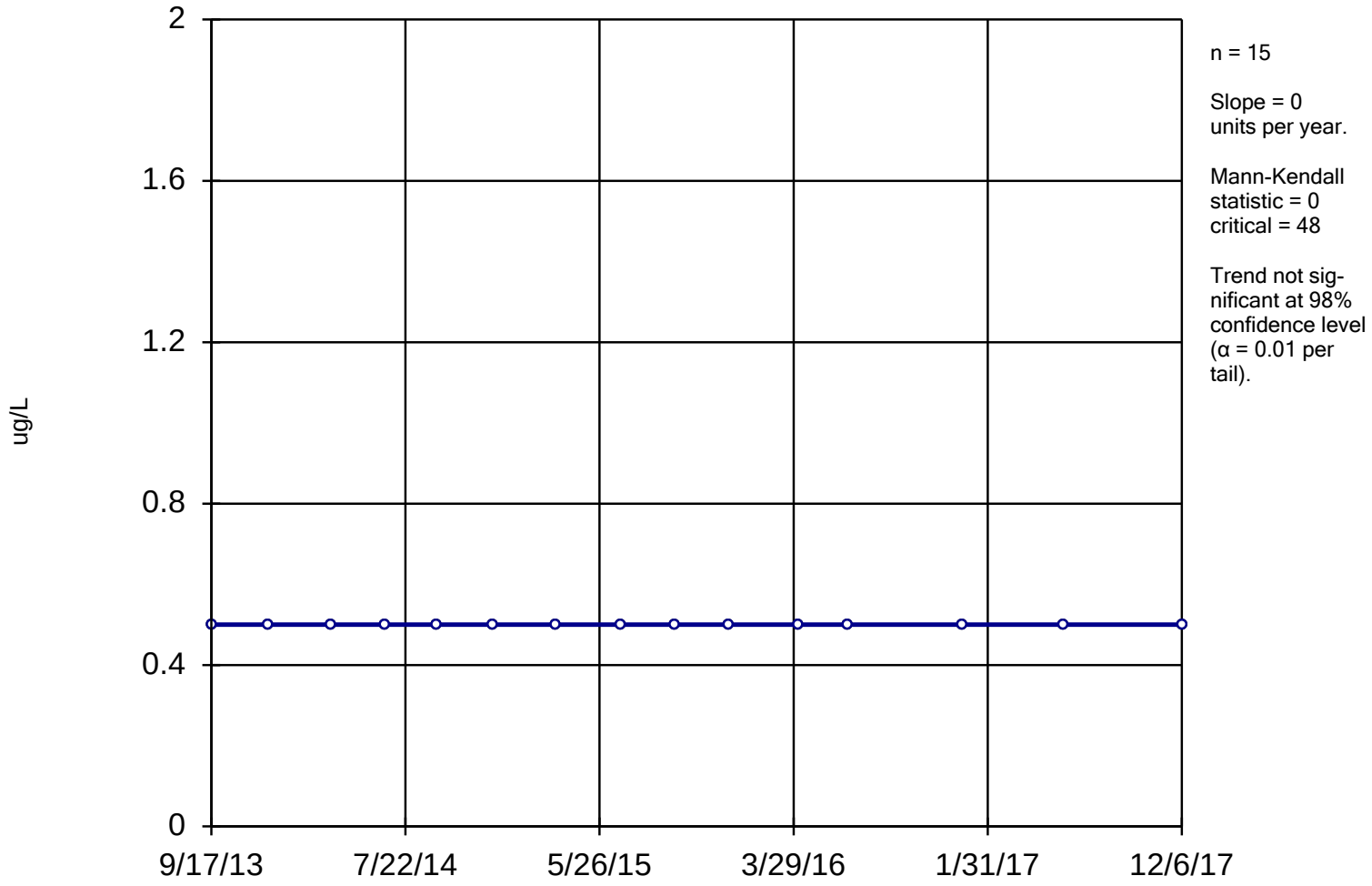
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

W-7



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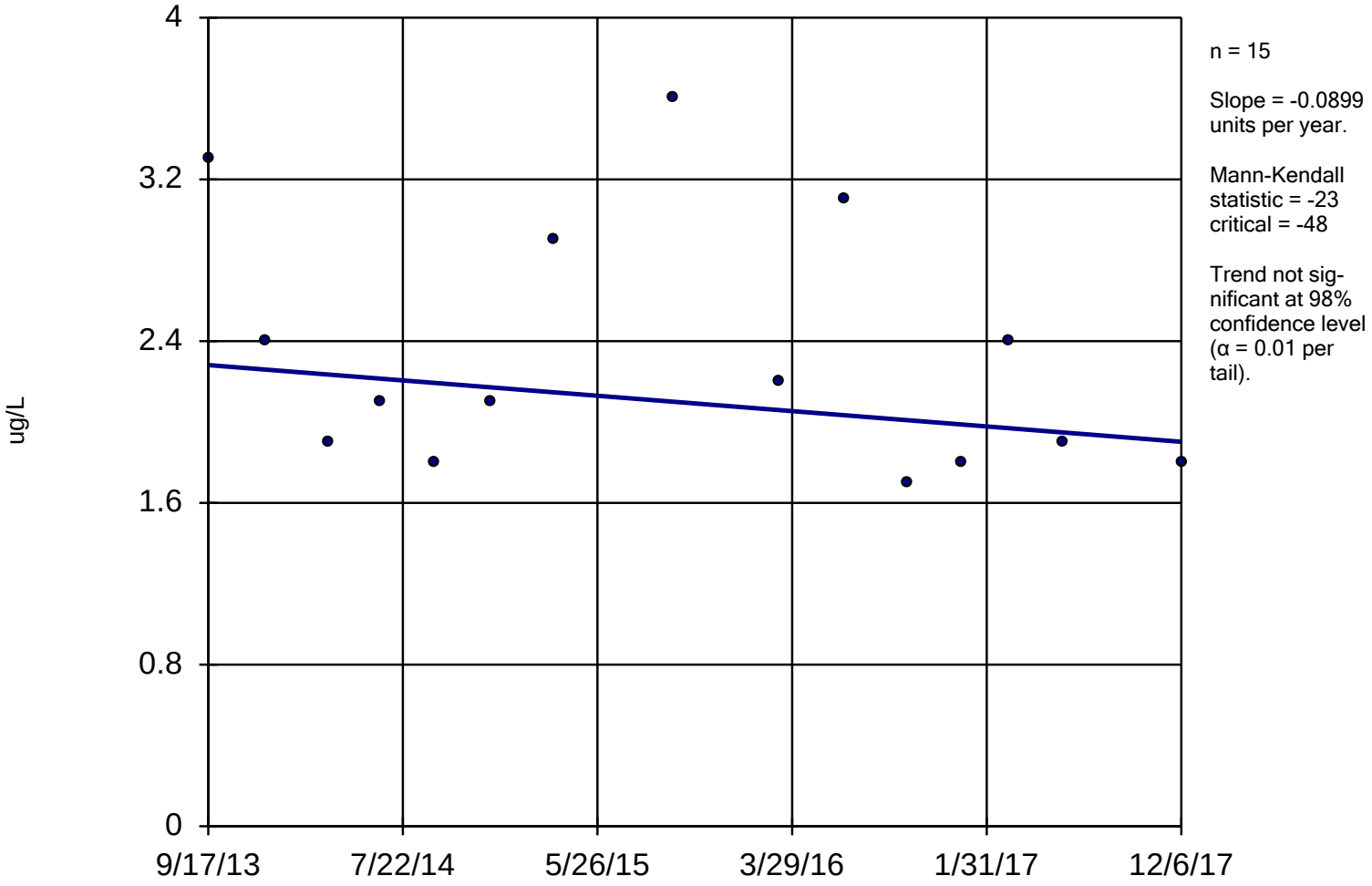
Sen's Slope Estimator

W-12



Constituent: 1,2-DCE Analysis Run 12/28/2018 11:34 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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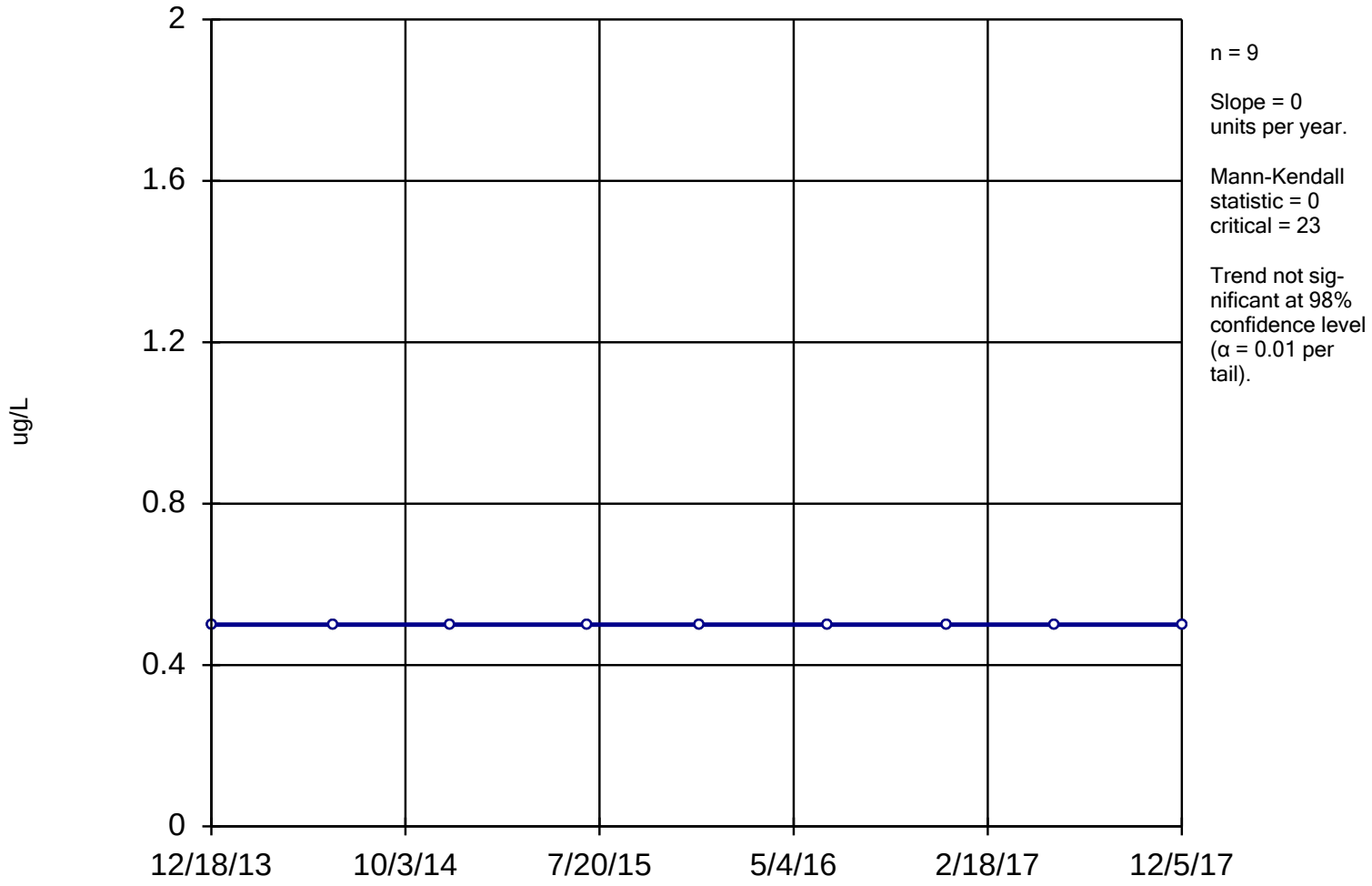
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-2I



Constituent: TCE Analysis Run 12/28/2018 11:35 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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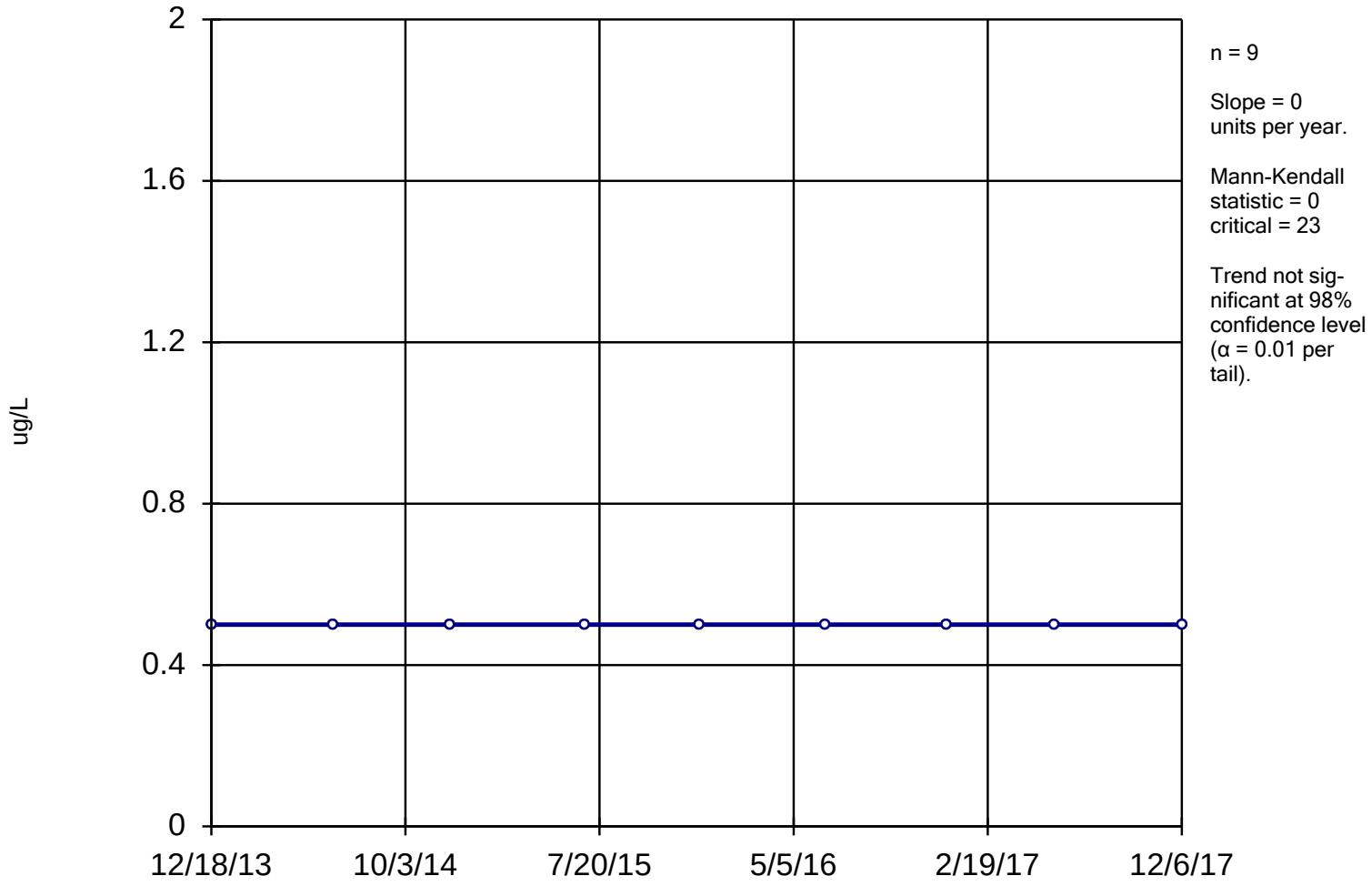
Sen's Slope Estimator

B-4D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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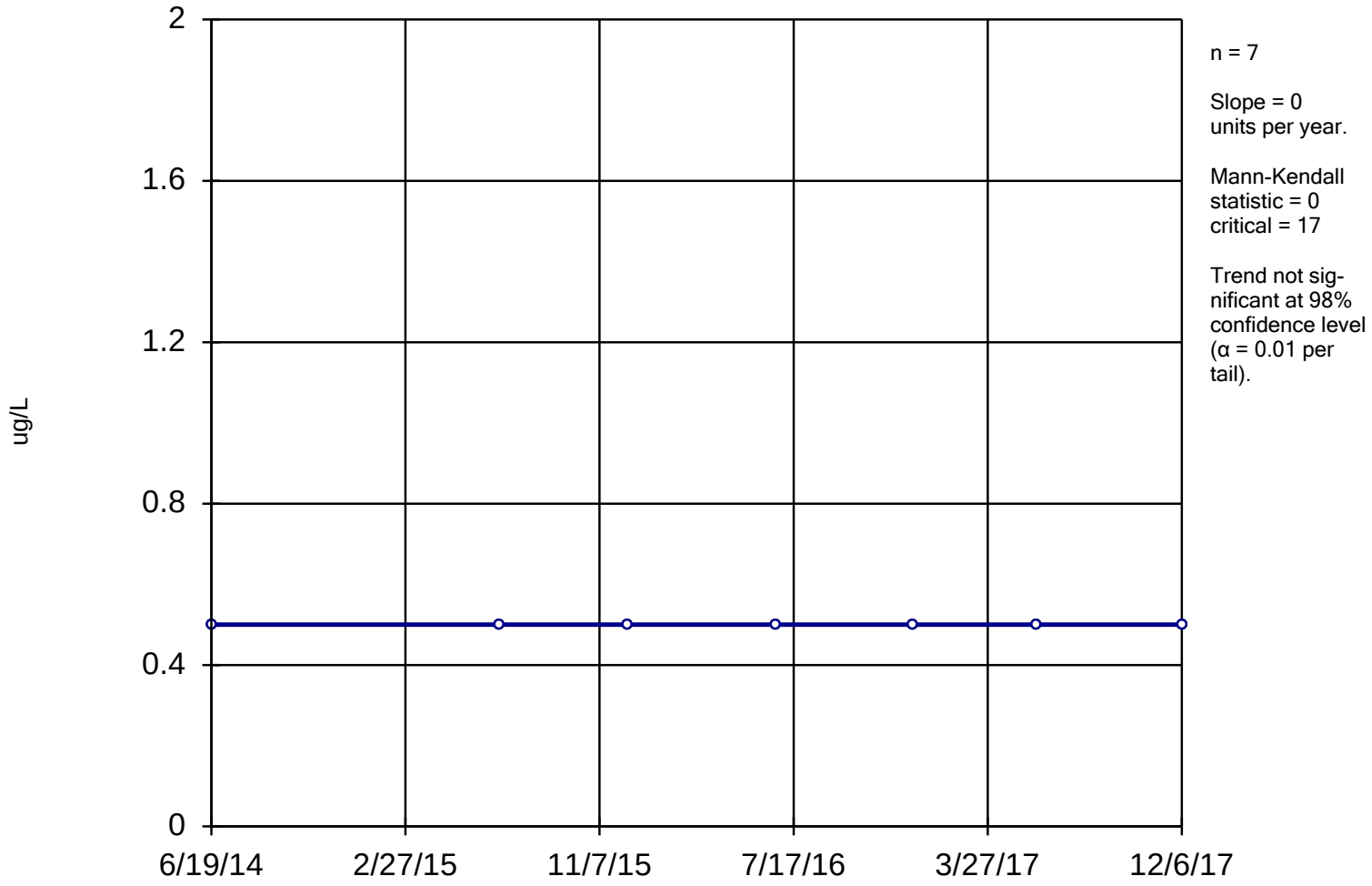
Sen's Slope Estimator

B-4I



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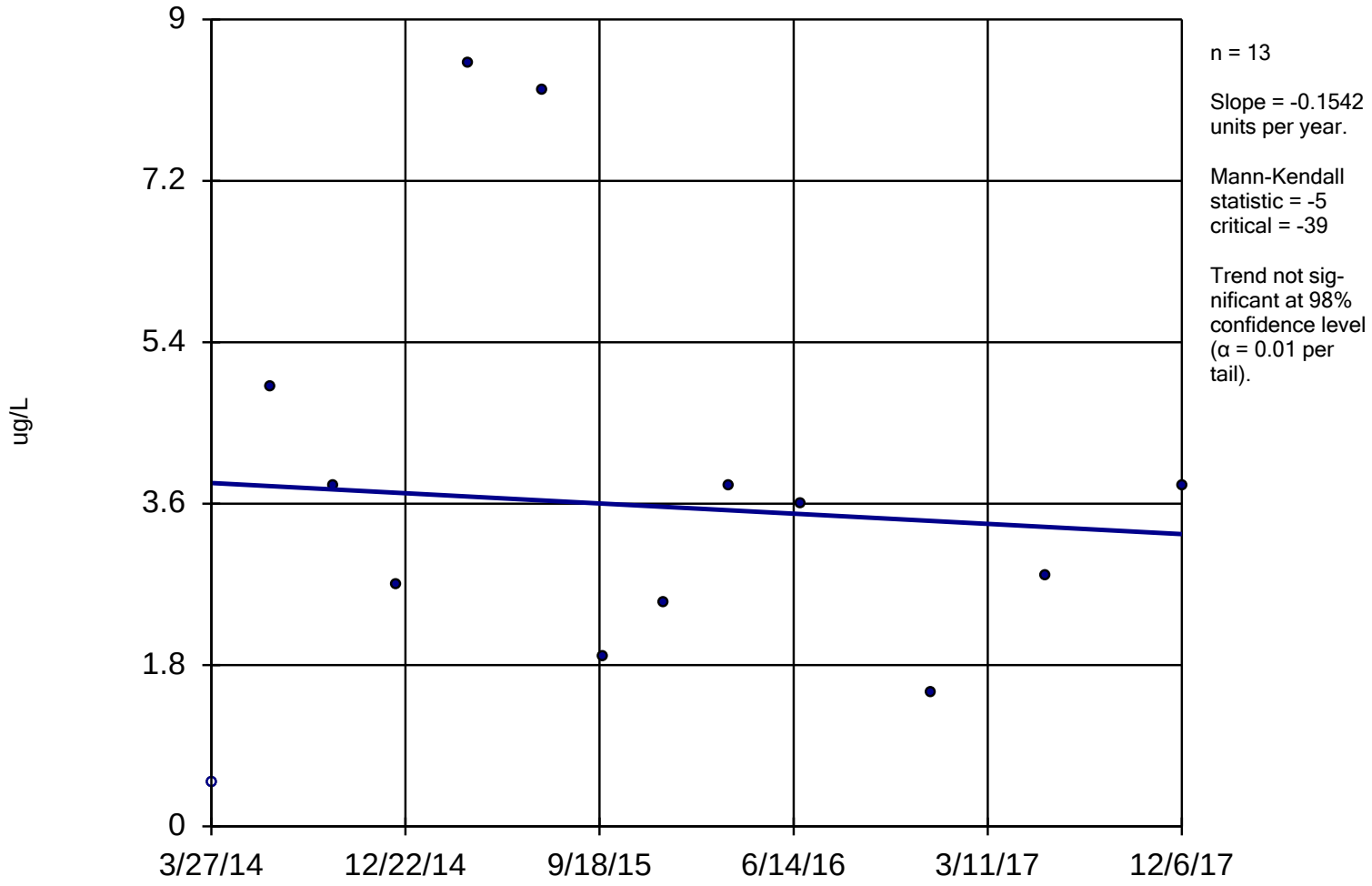
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-4S



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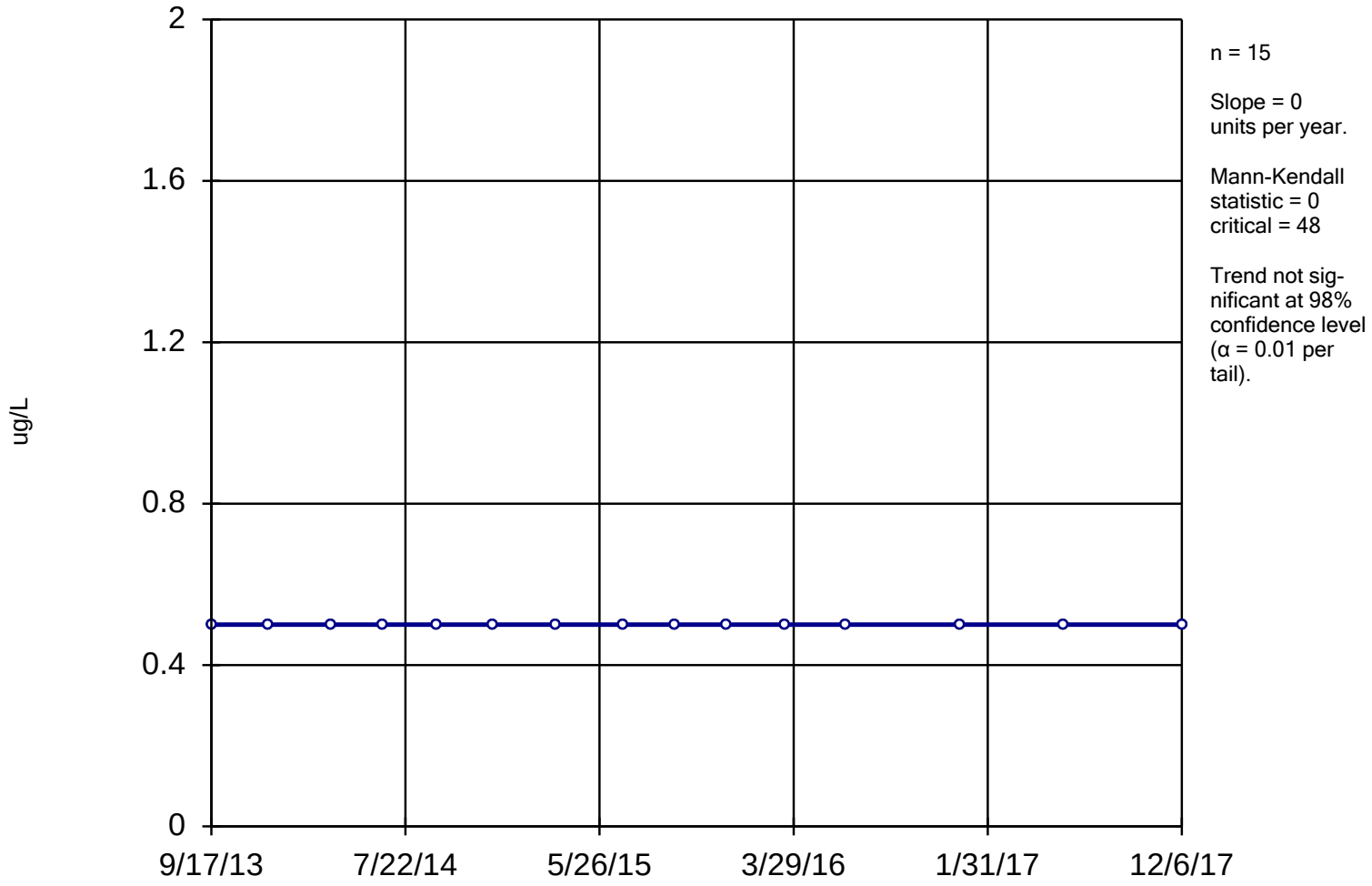
Sen's Slope Estimator

B-5D



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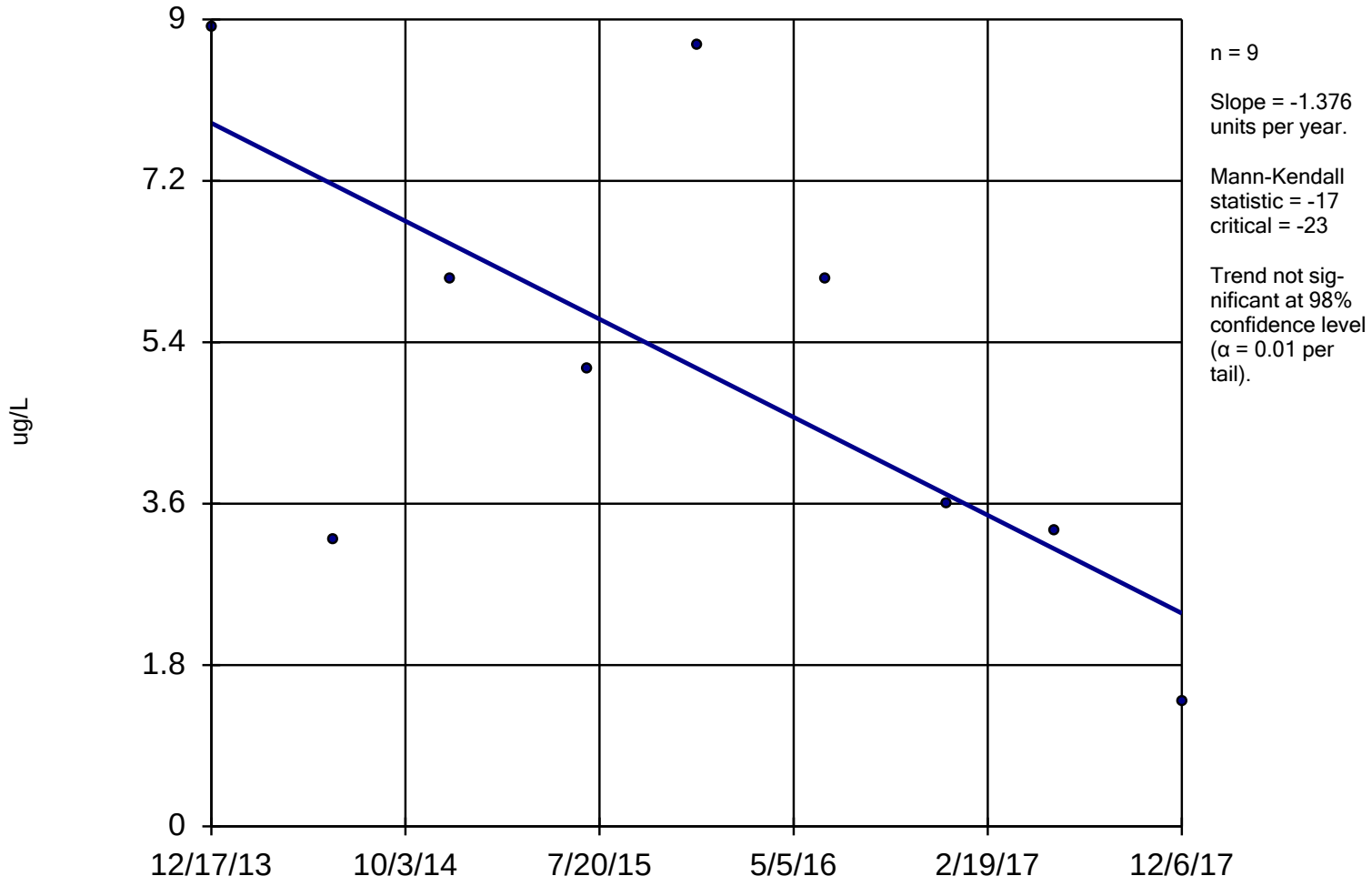
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

B-5I



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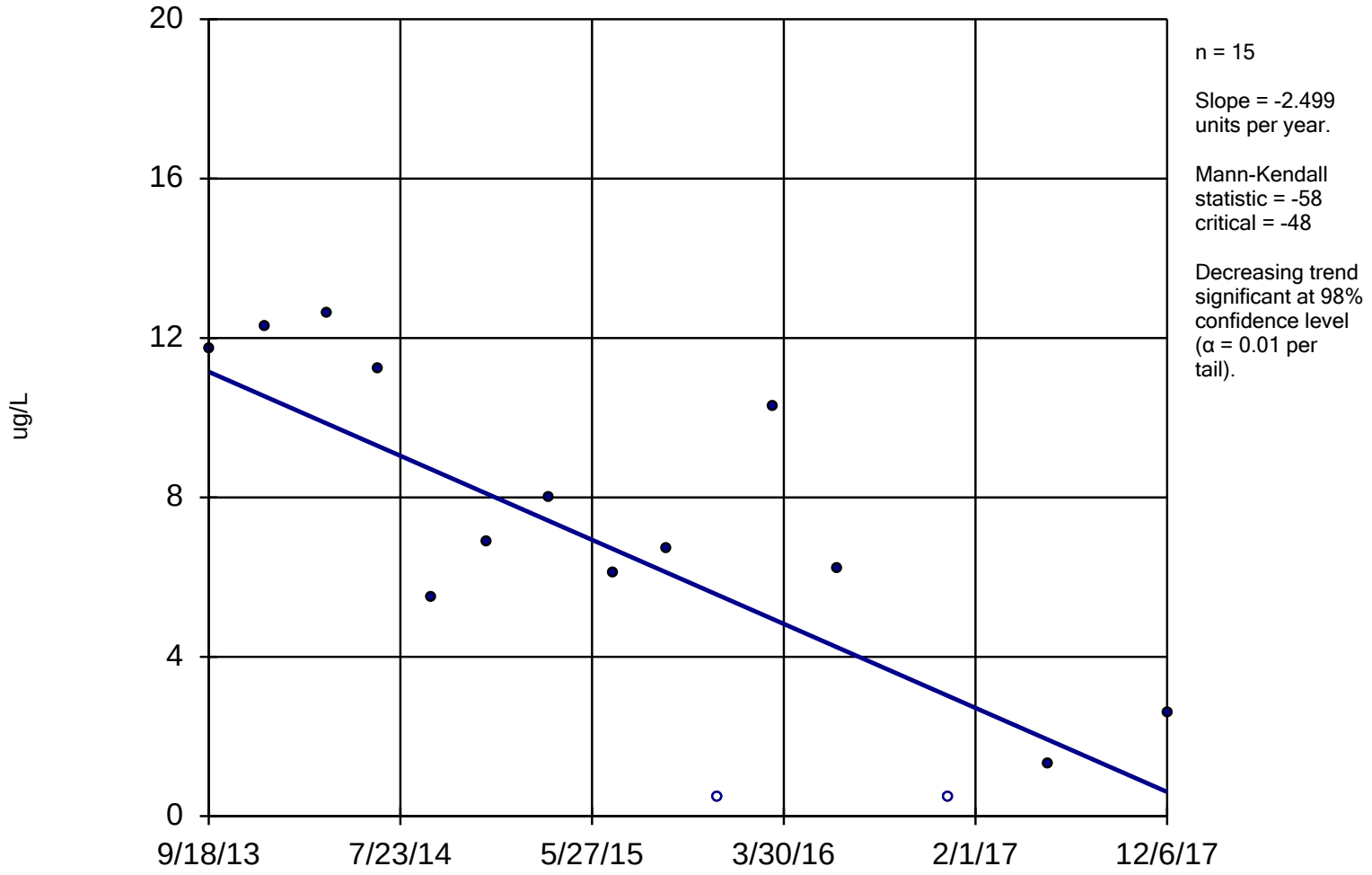
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-6I



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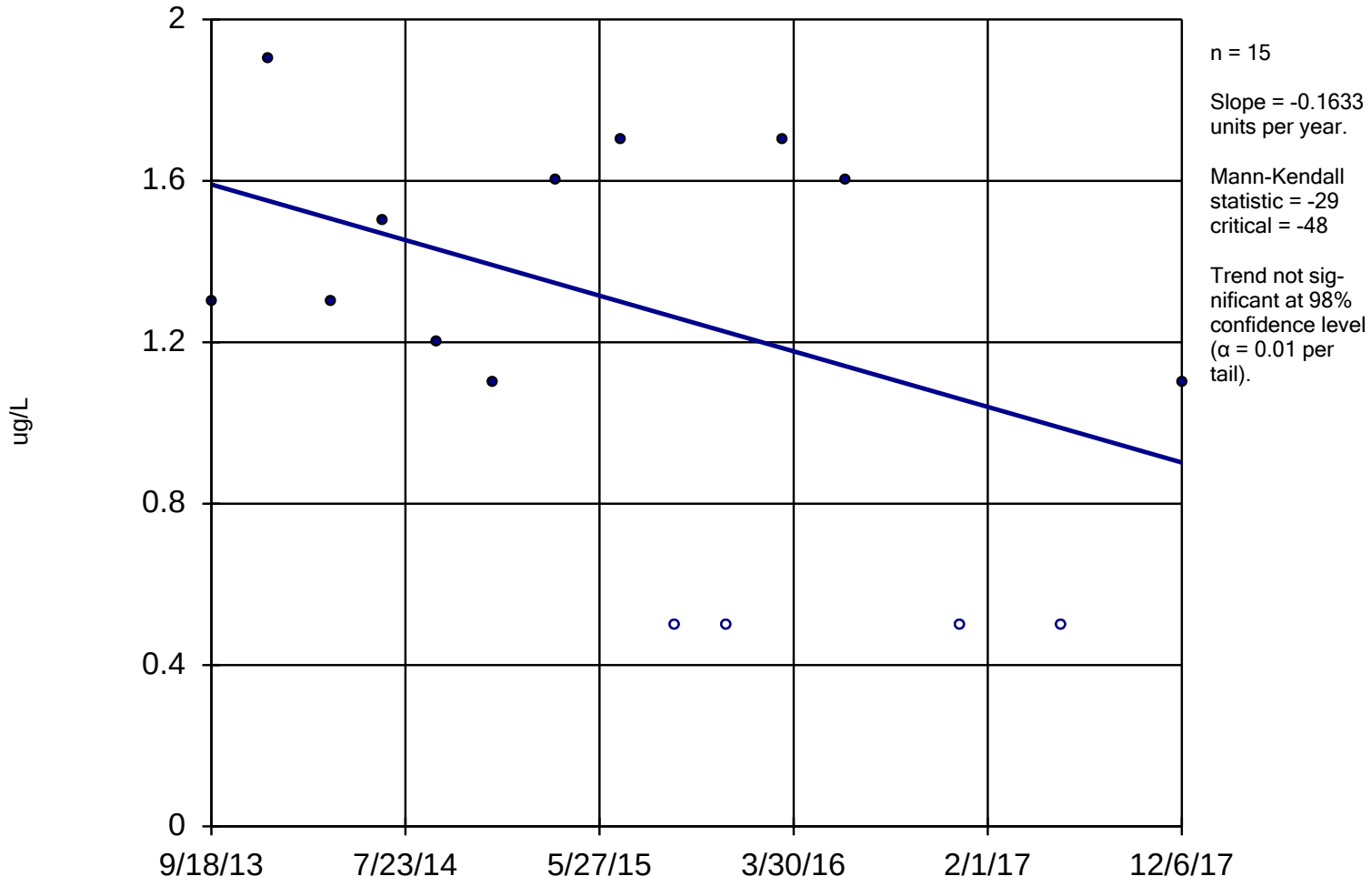
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-6S



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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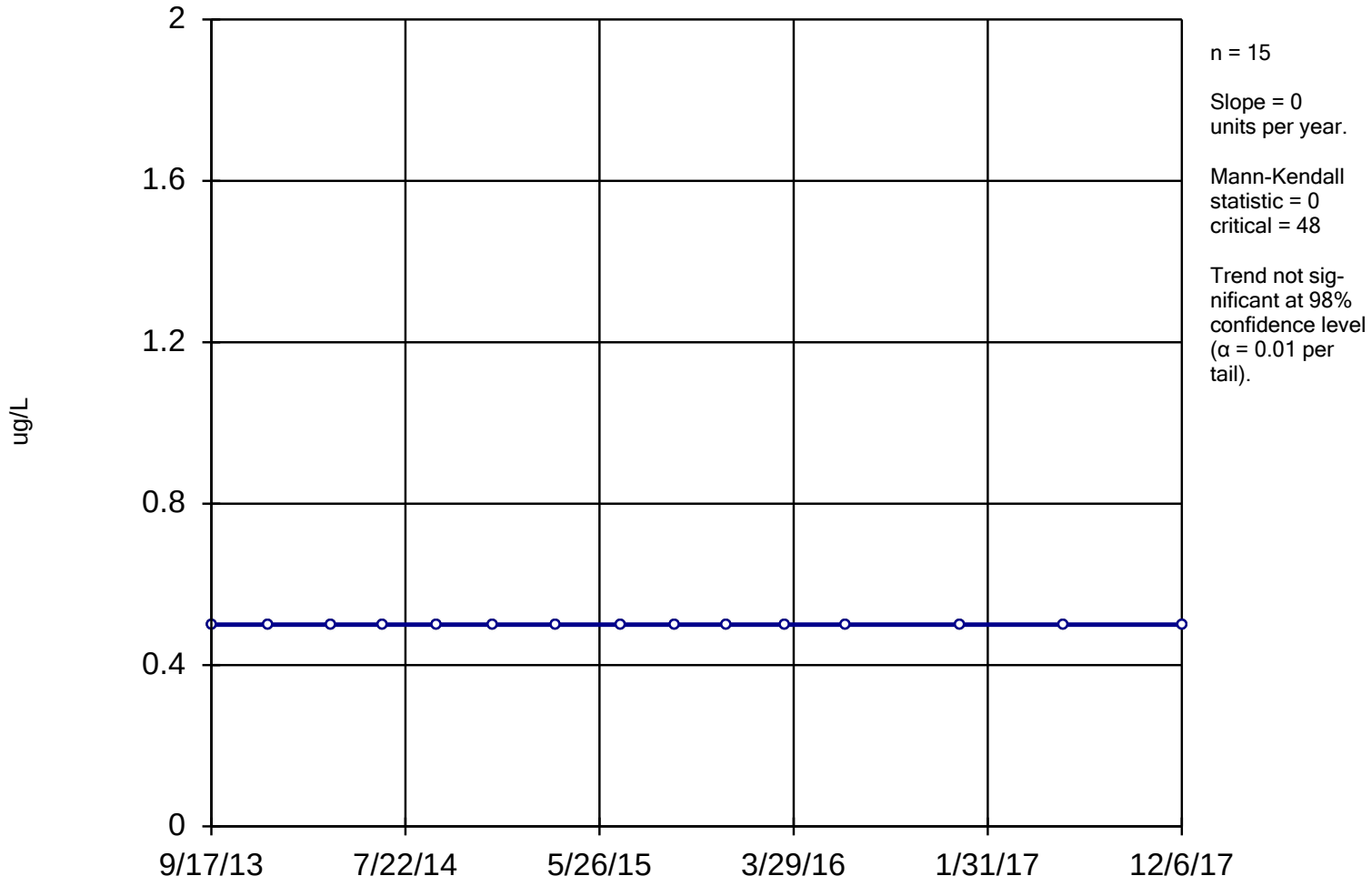
Sen's Slope Estimator

B-8D



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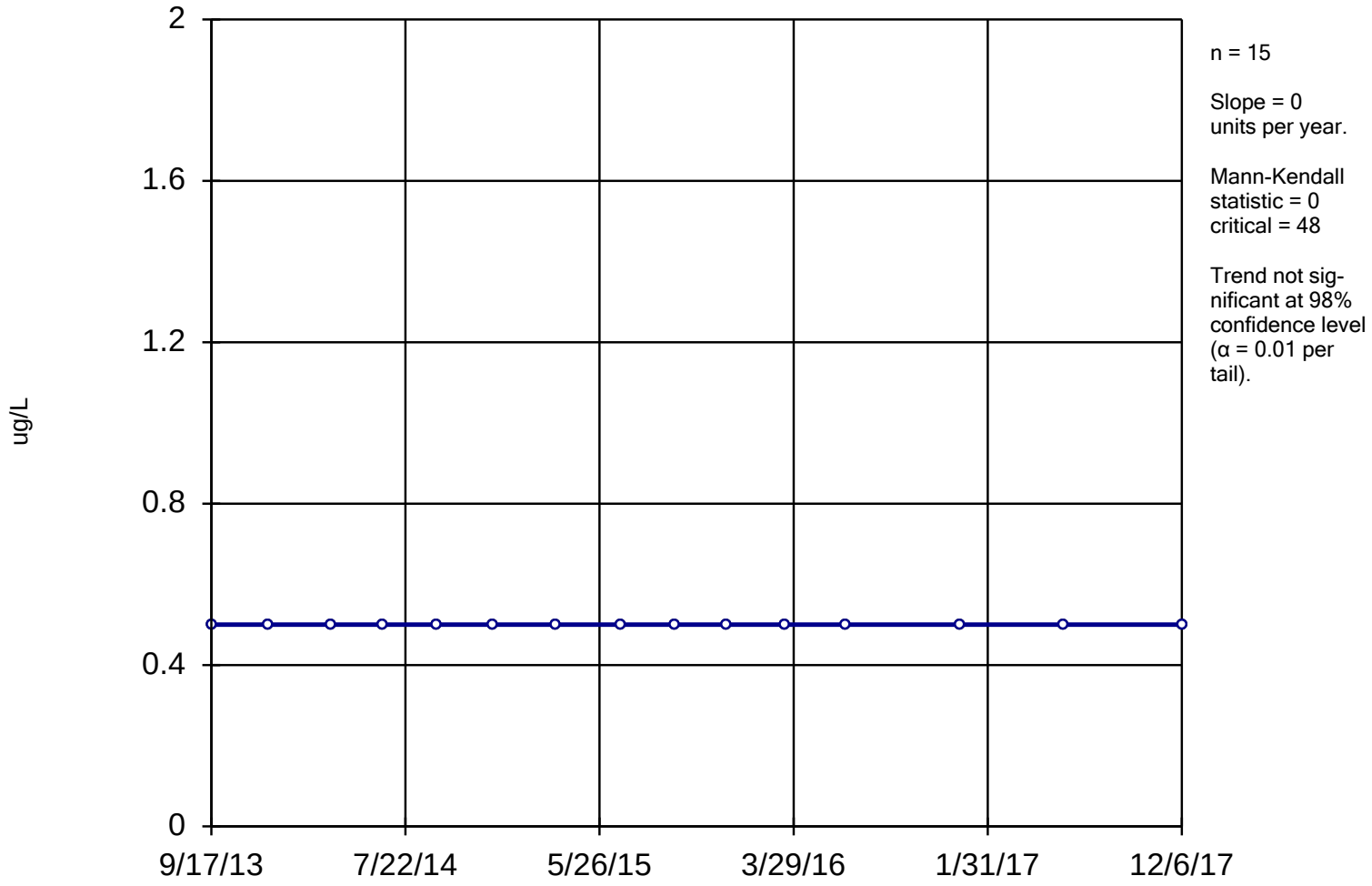
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-8I



Constituent: TCE Analysis Run 12/28/2018 11:35 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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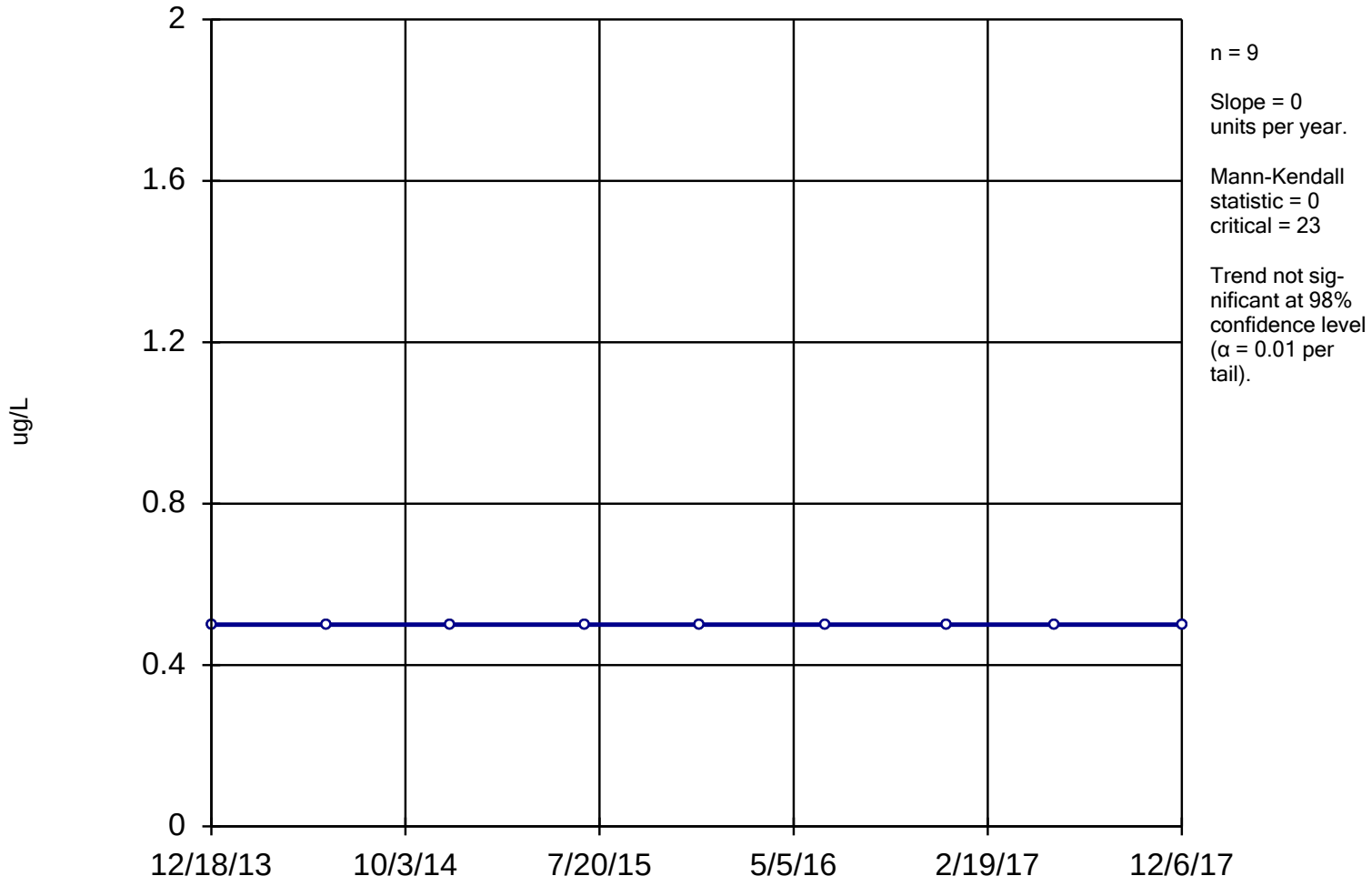
Sen's Slope Estimator

B-8S



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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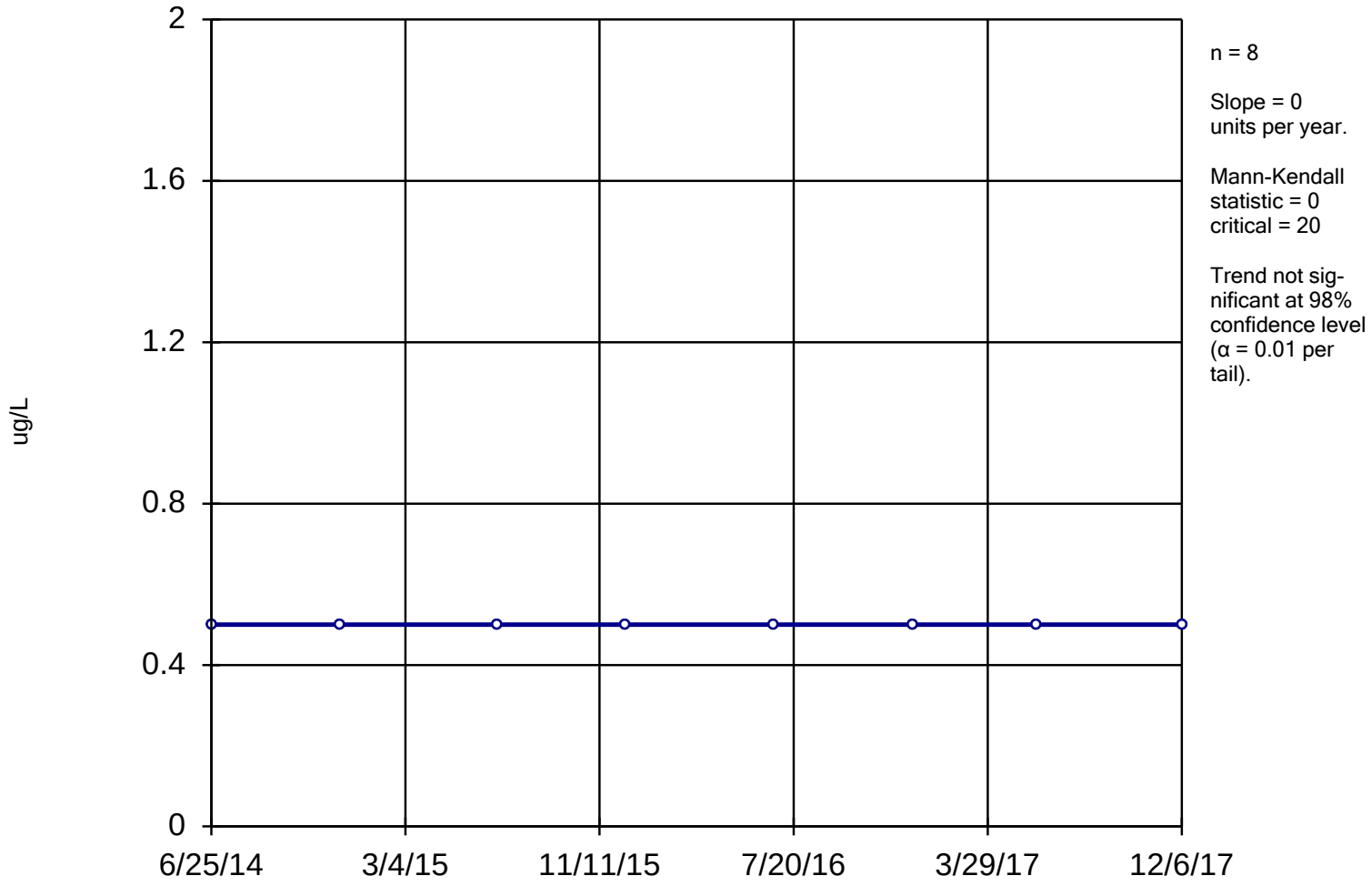
Sen's Slope Estimator

B-9S



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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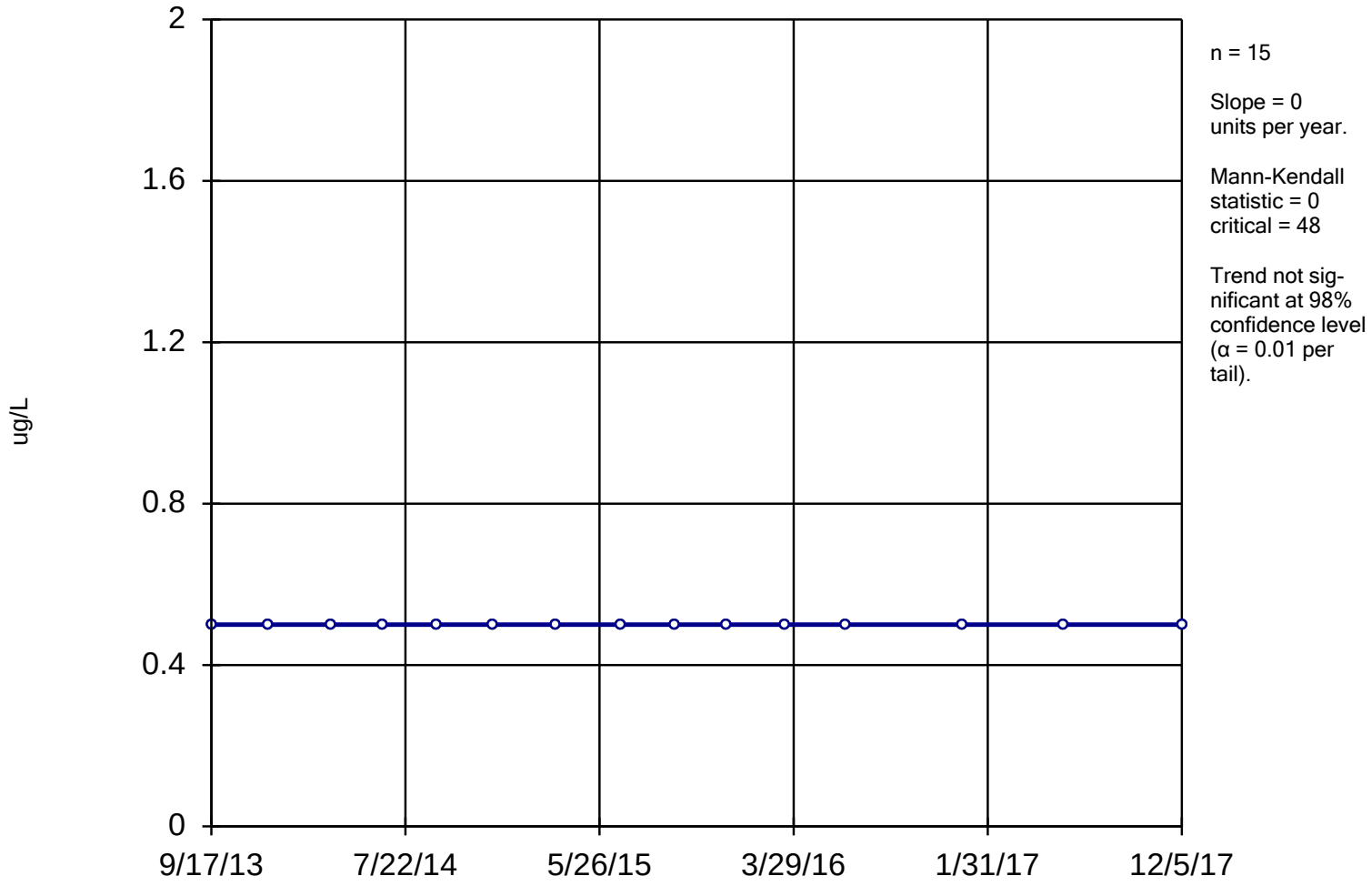
Sen's Slope Estimator

B-13D



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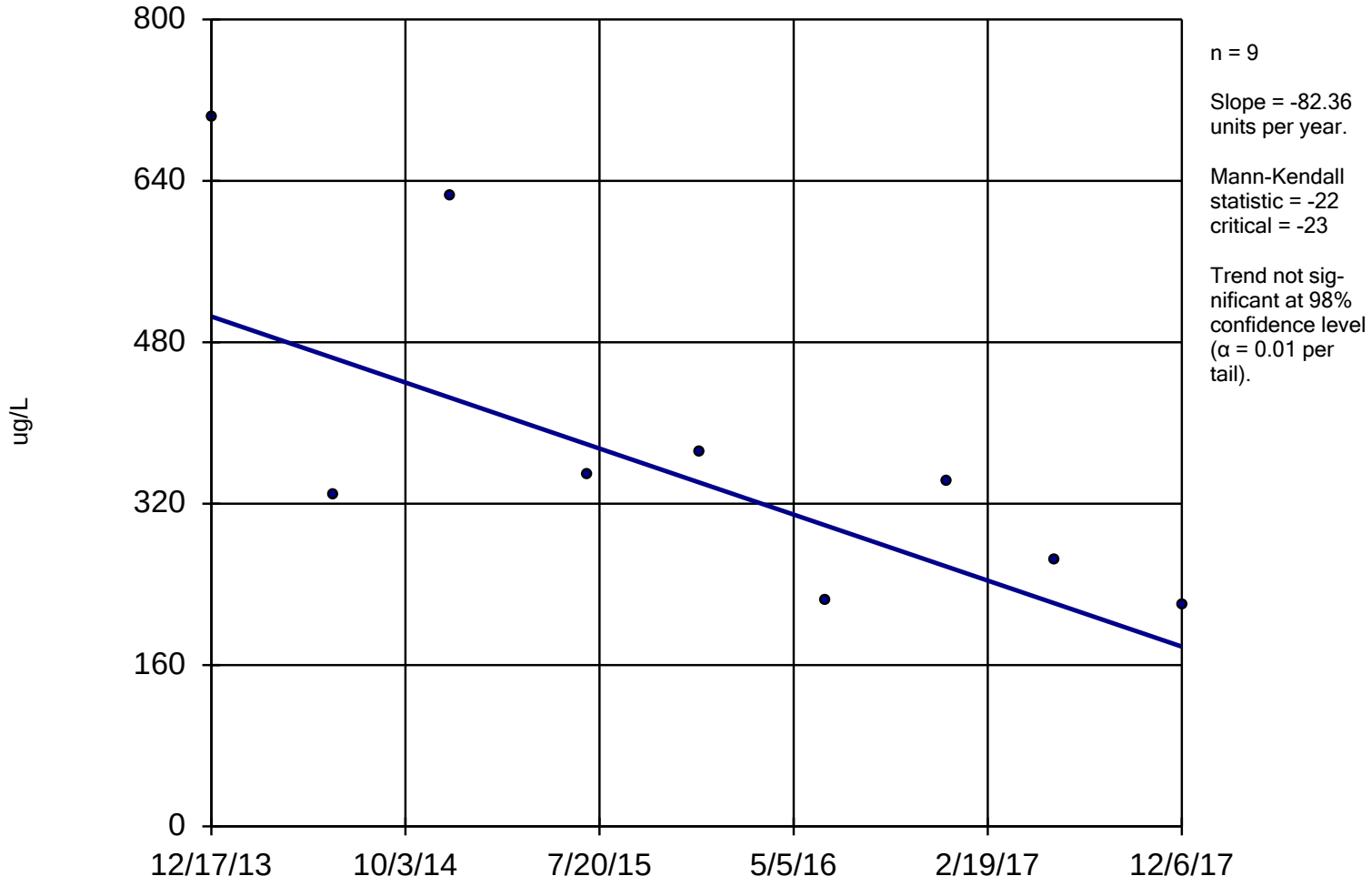
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

B-16



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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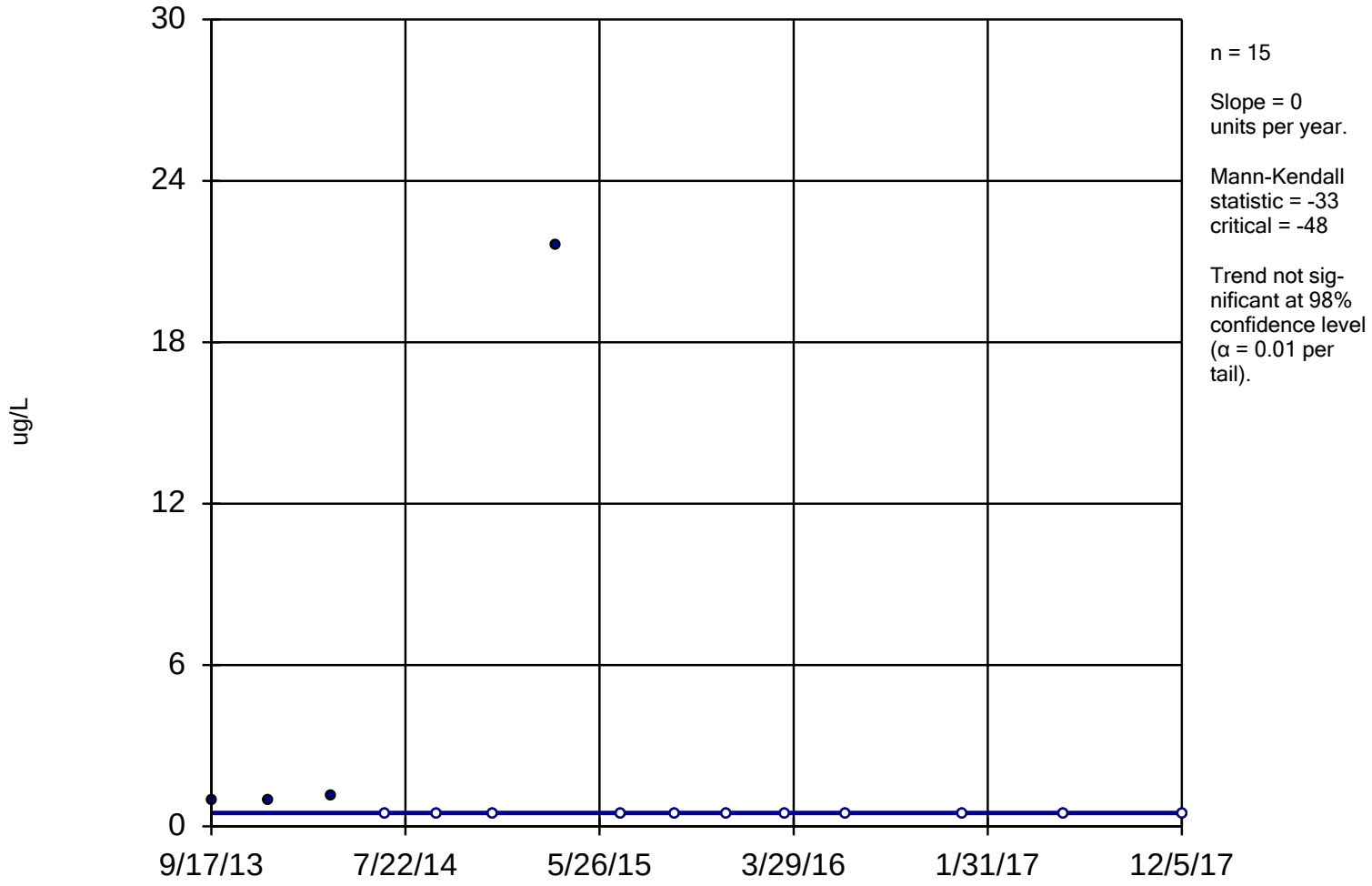
Sen's Slope Estimator

B-18



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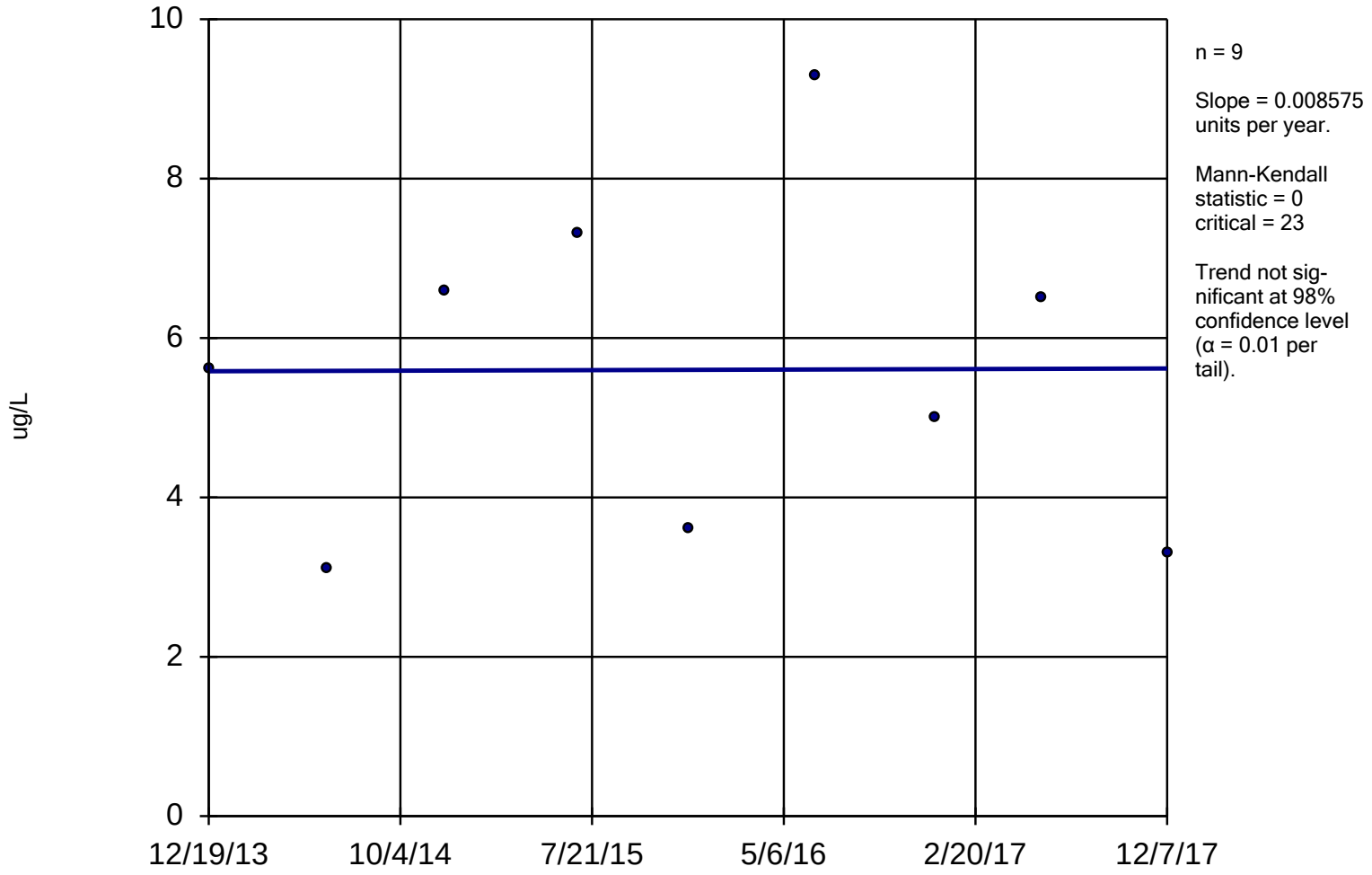
Sen's Slope Estimator

B-23I/D



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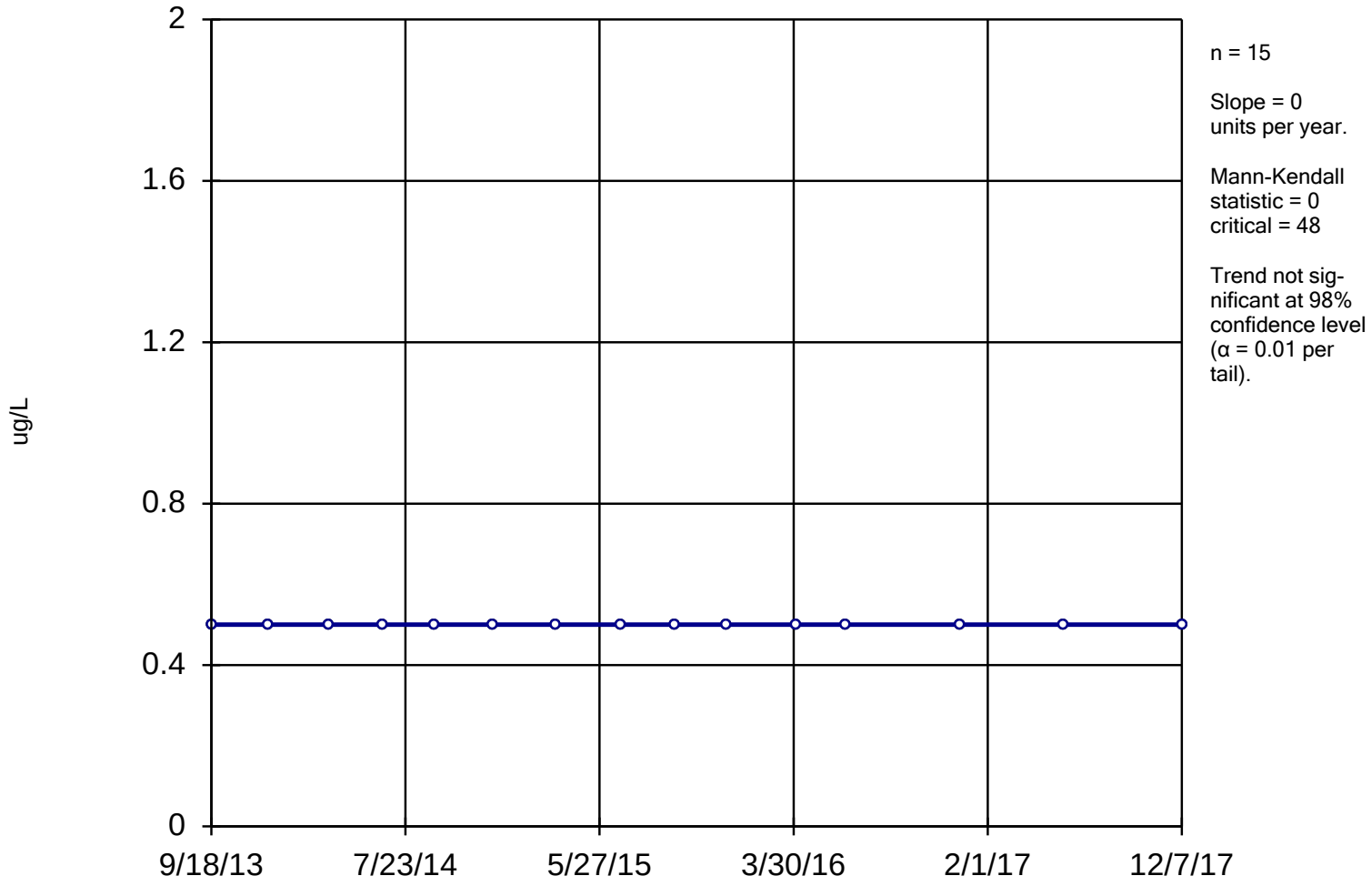
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-1D



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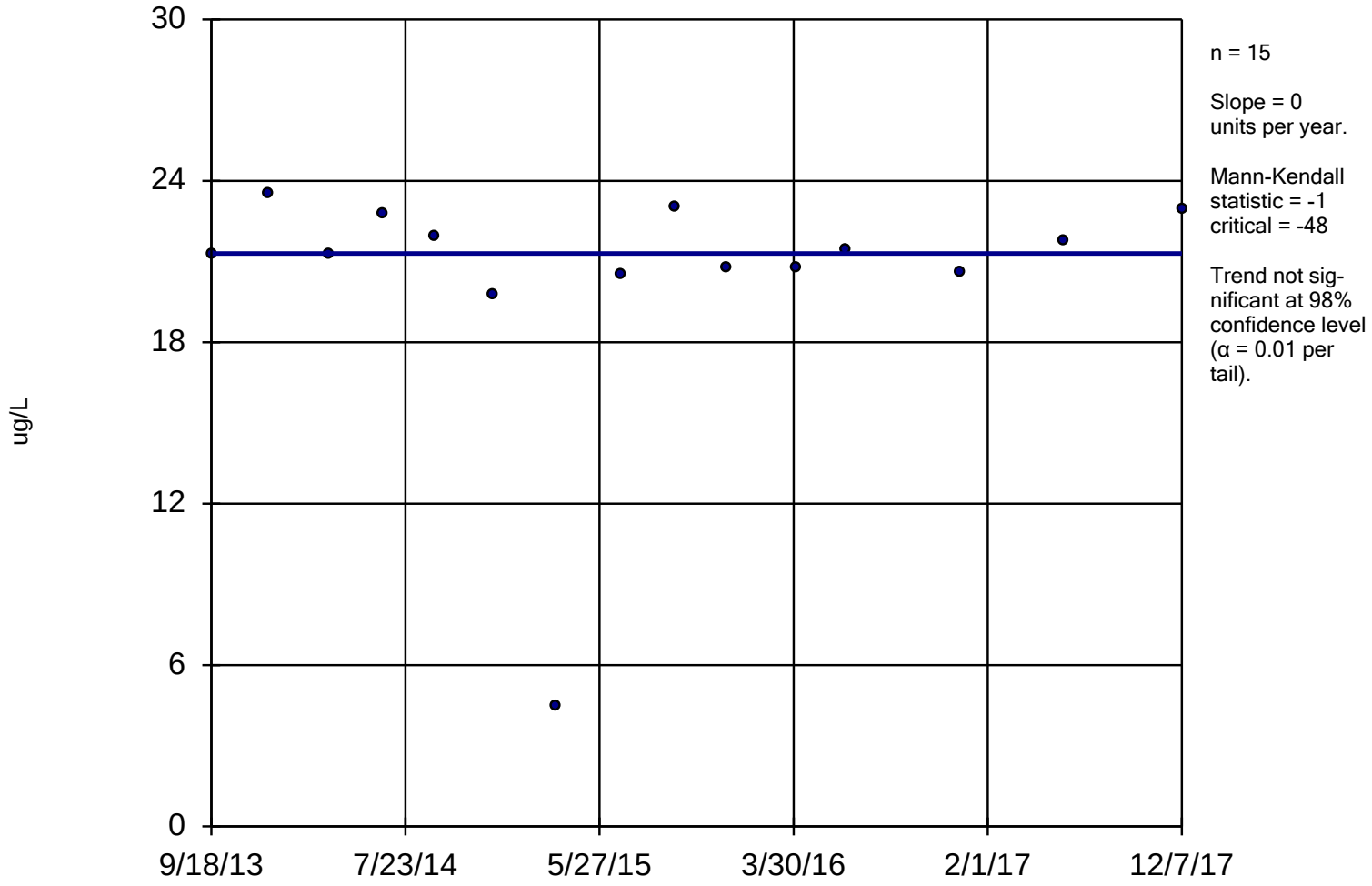
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

C-1I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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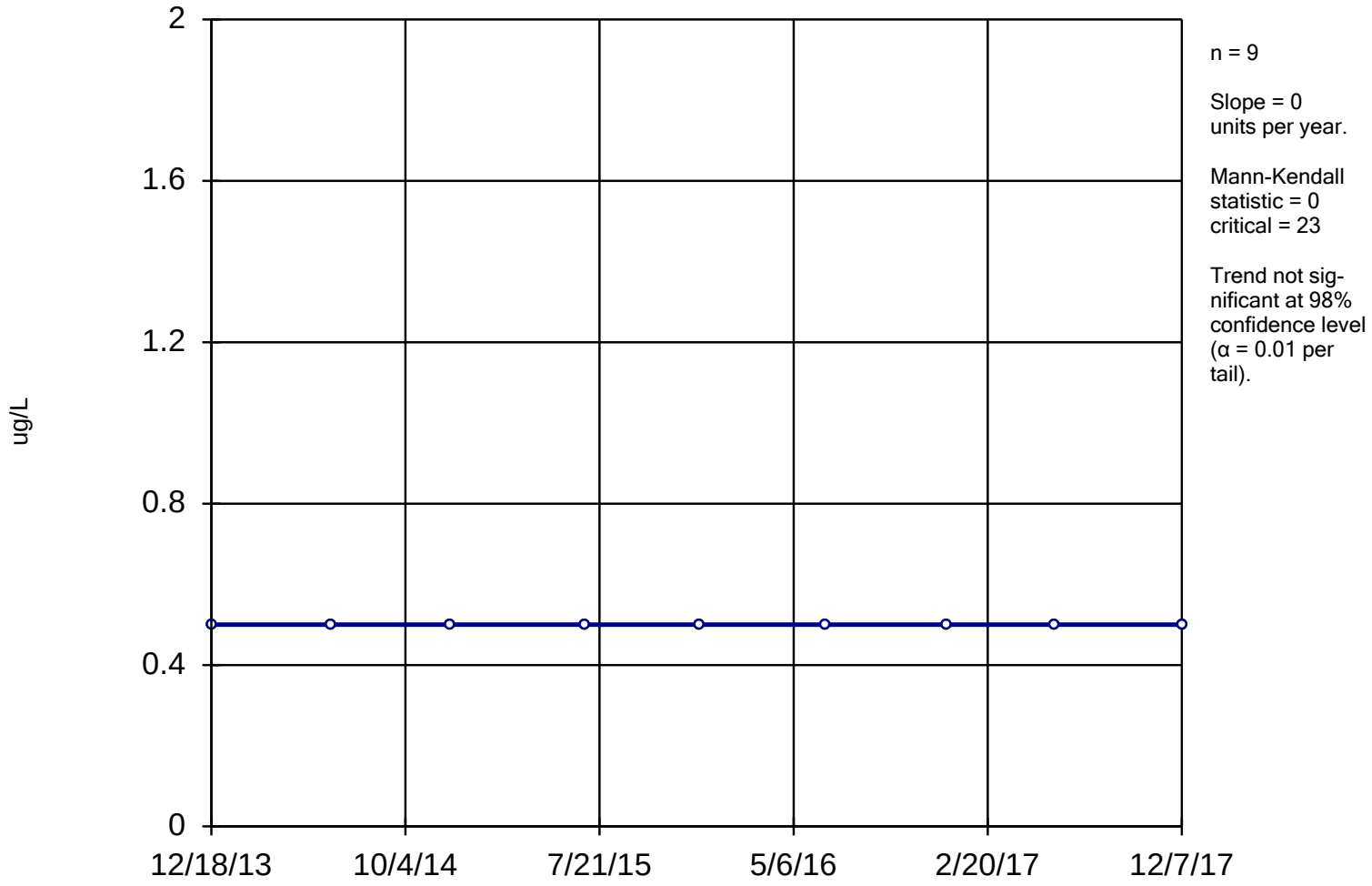
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-1S



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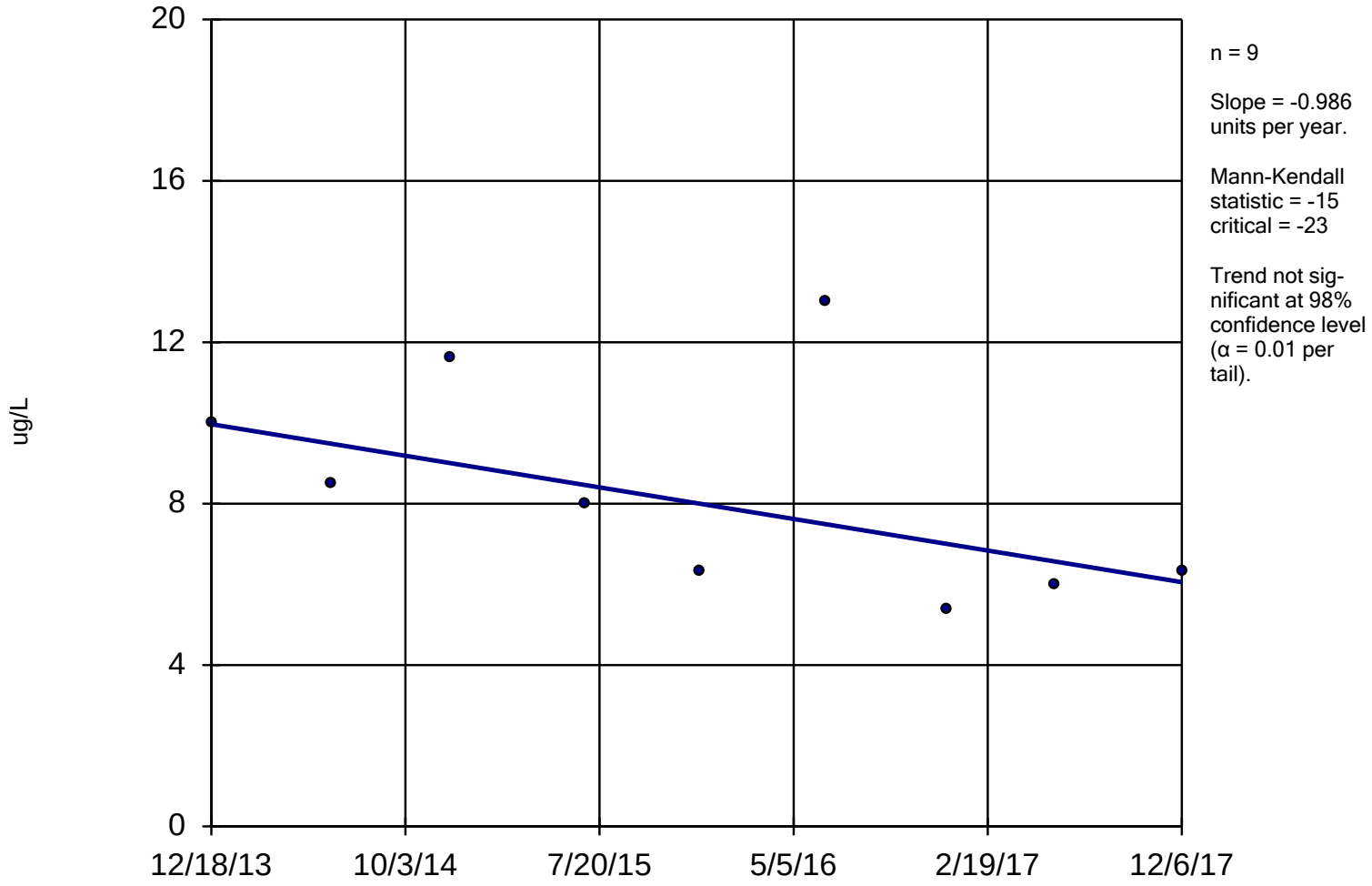
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

C-2D

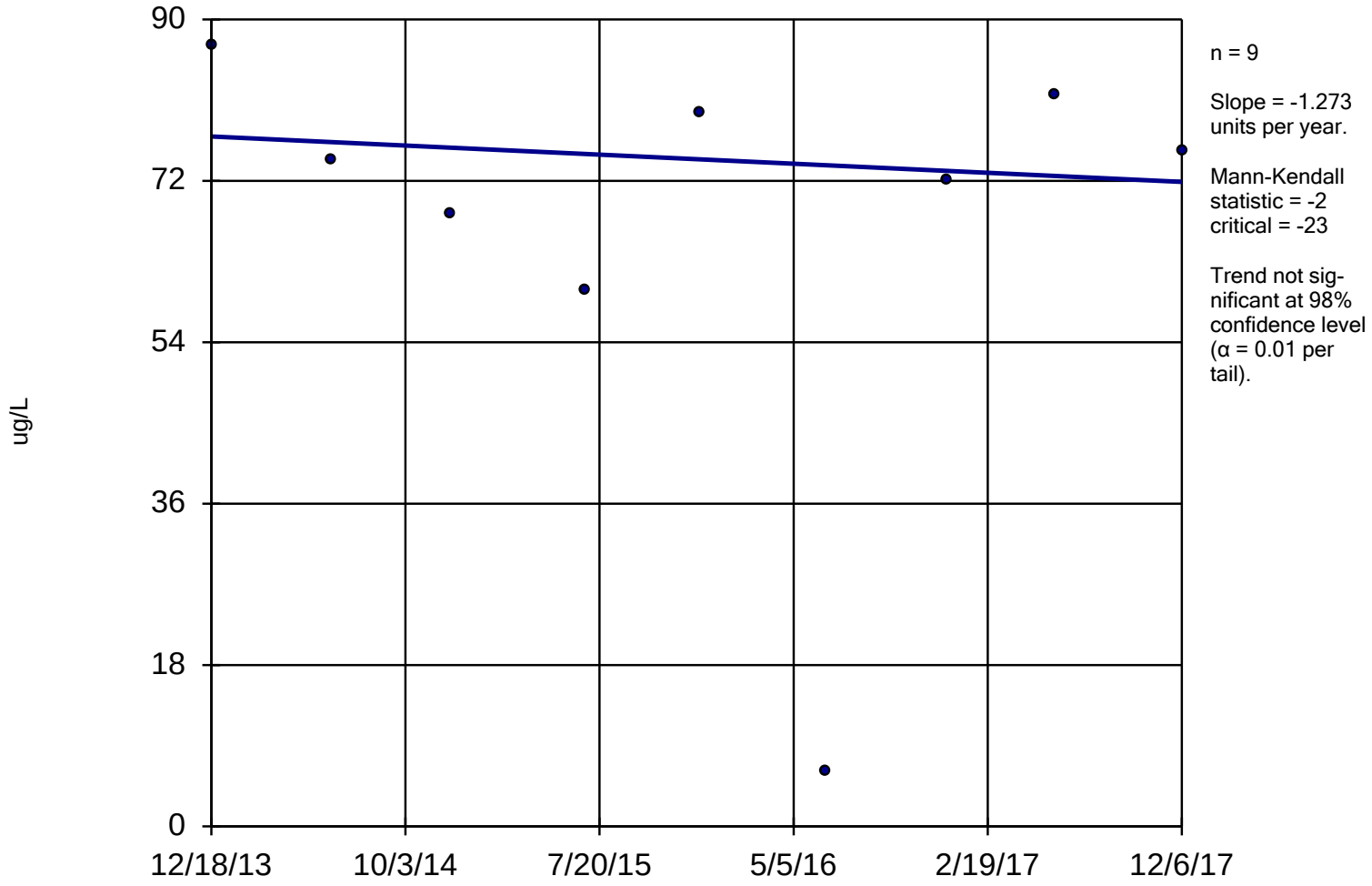


Constituent: TCE Analysis Run 12/28/2018 11:36 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

C-2I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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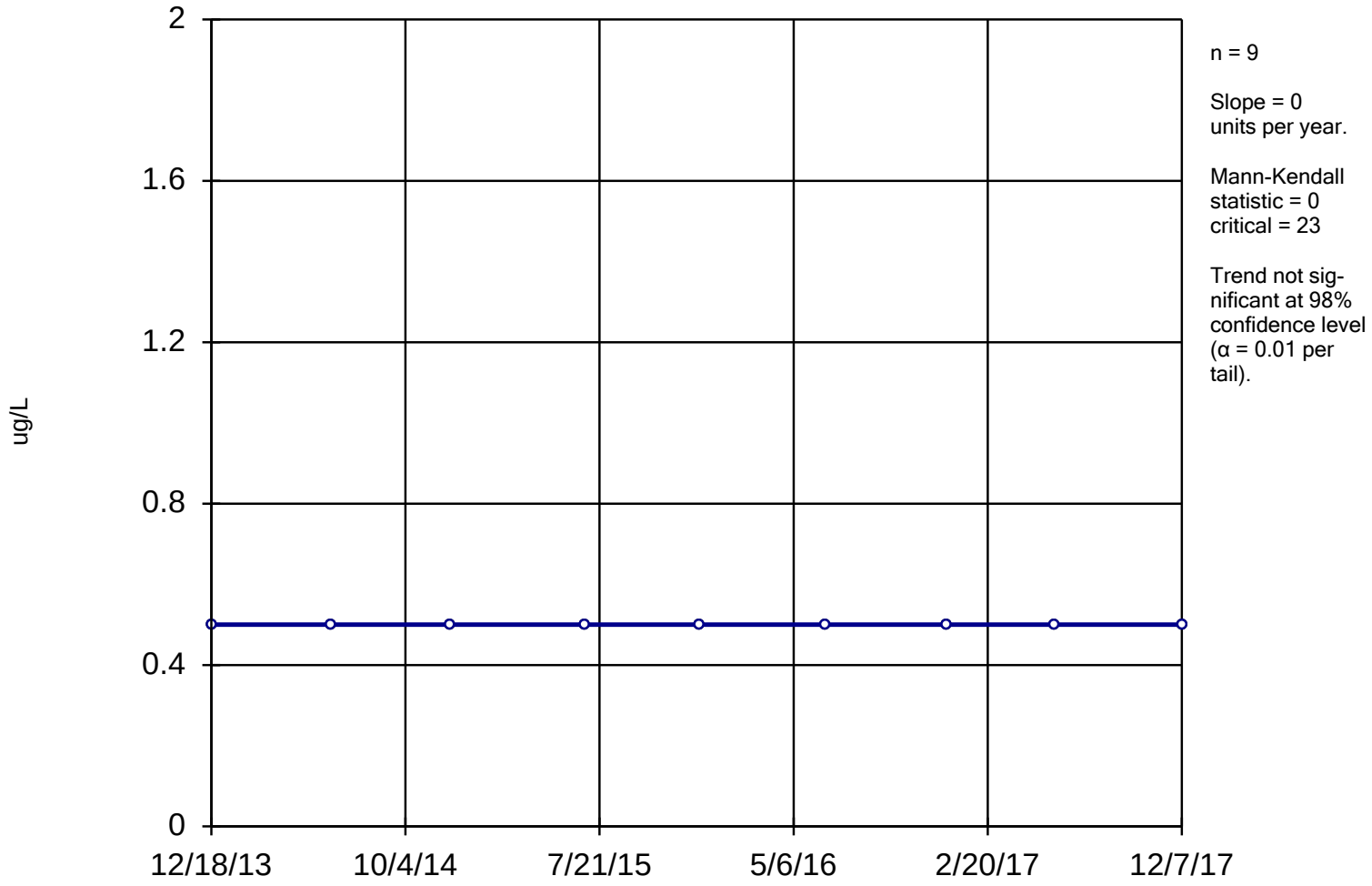
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-2S



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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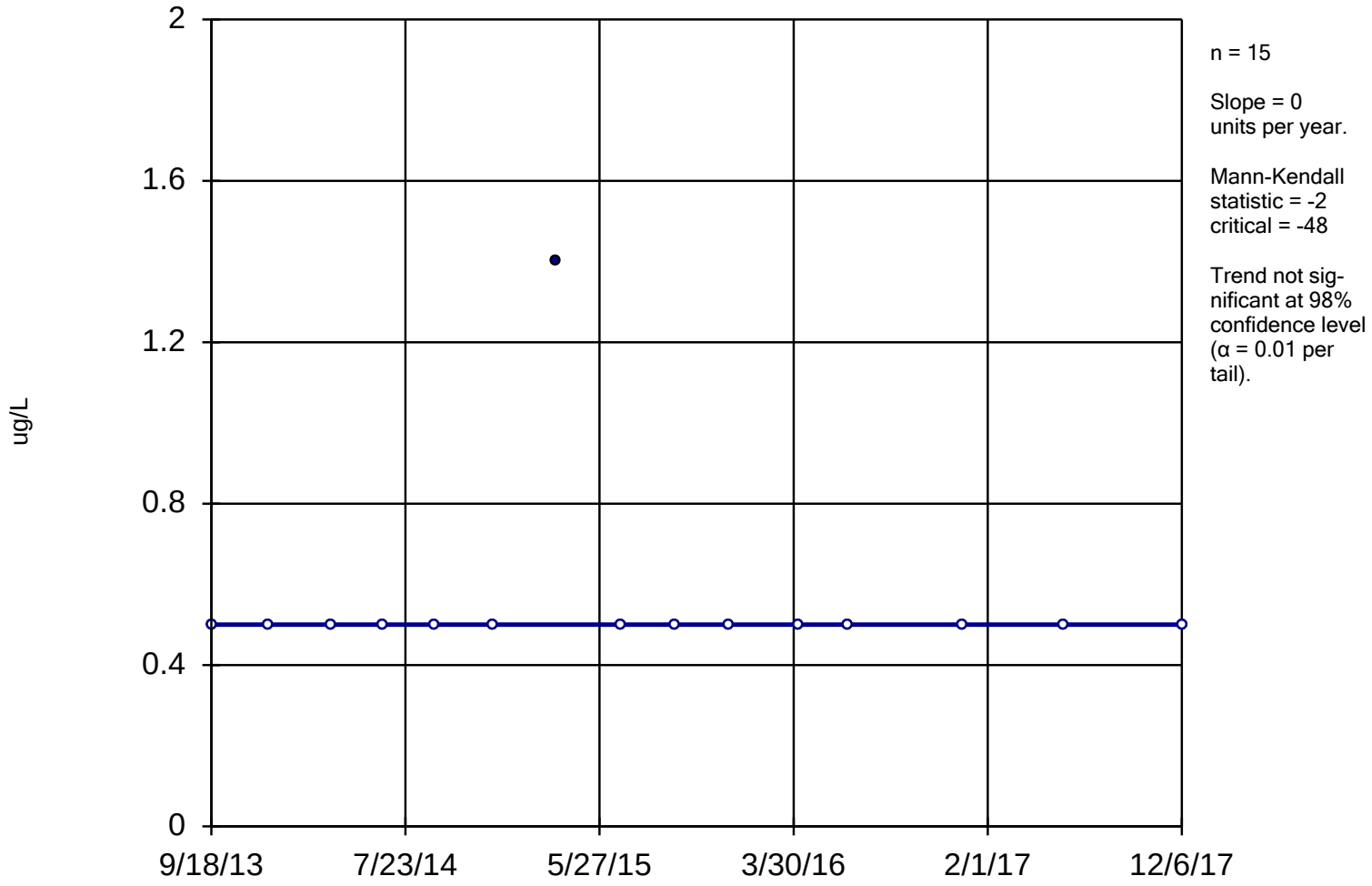
Sen's Slope Estimator

C-3D



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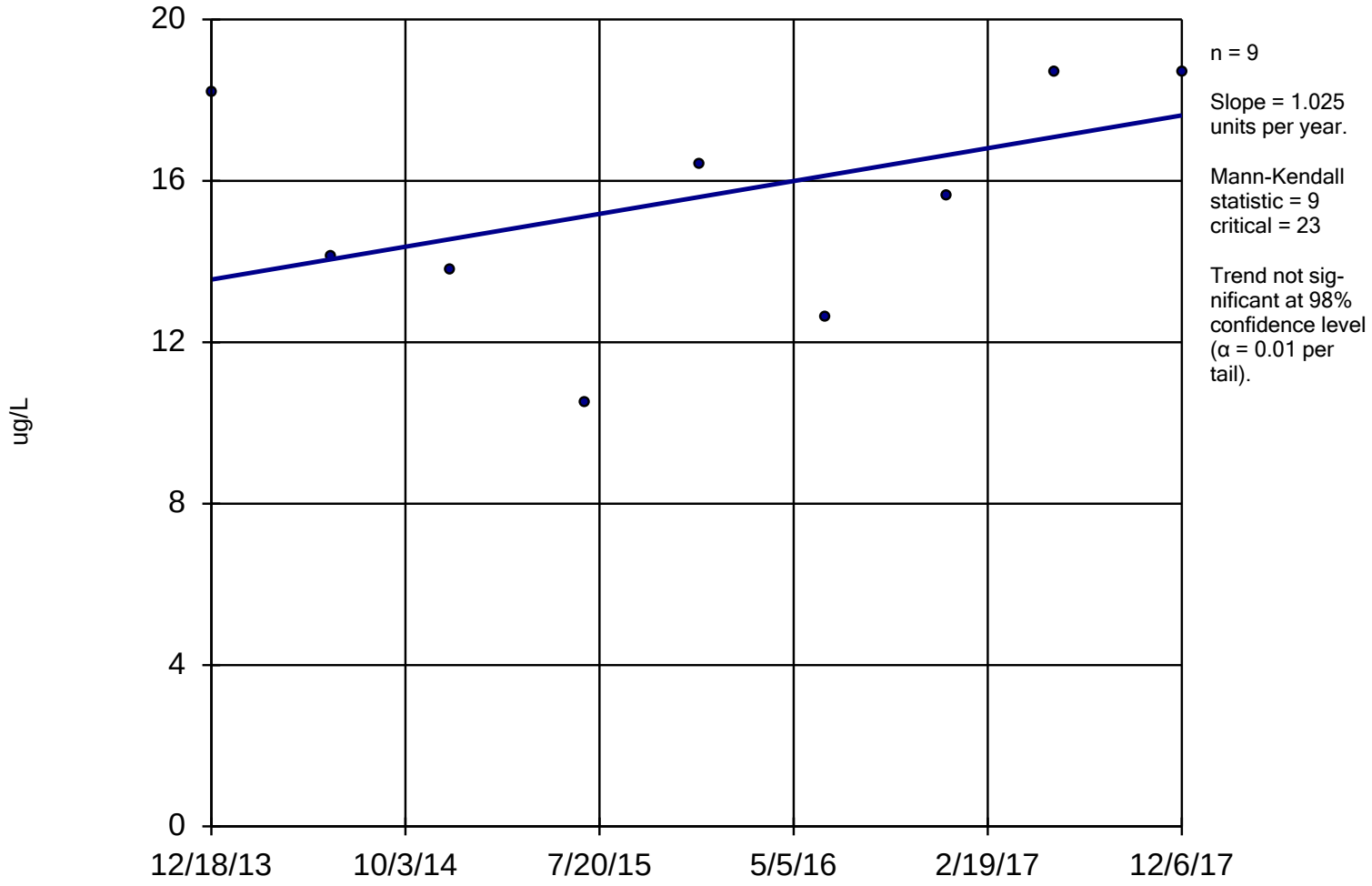
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

C-3I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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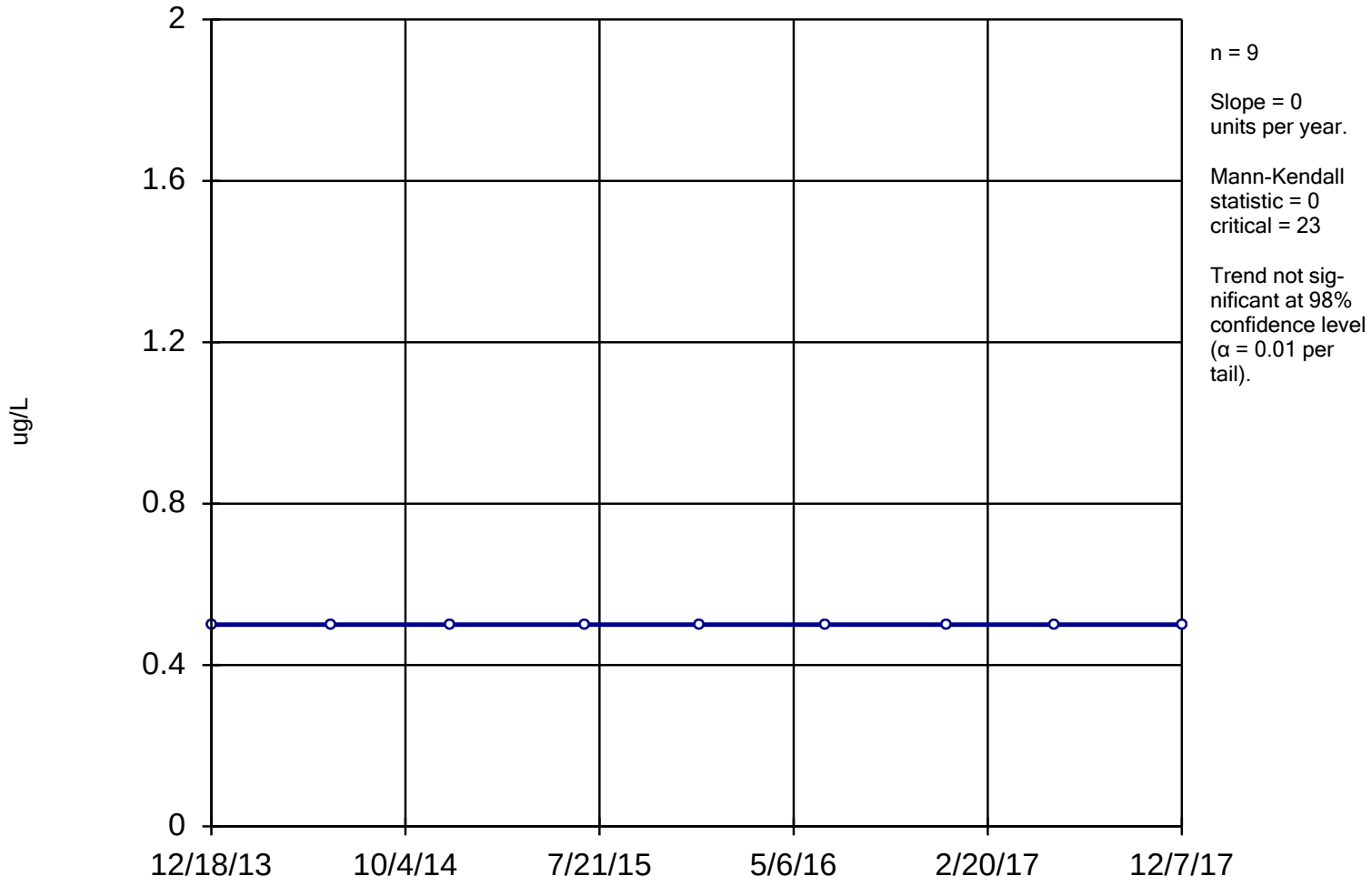
Sen's Slope Estimator

C-3S



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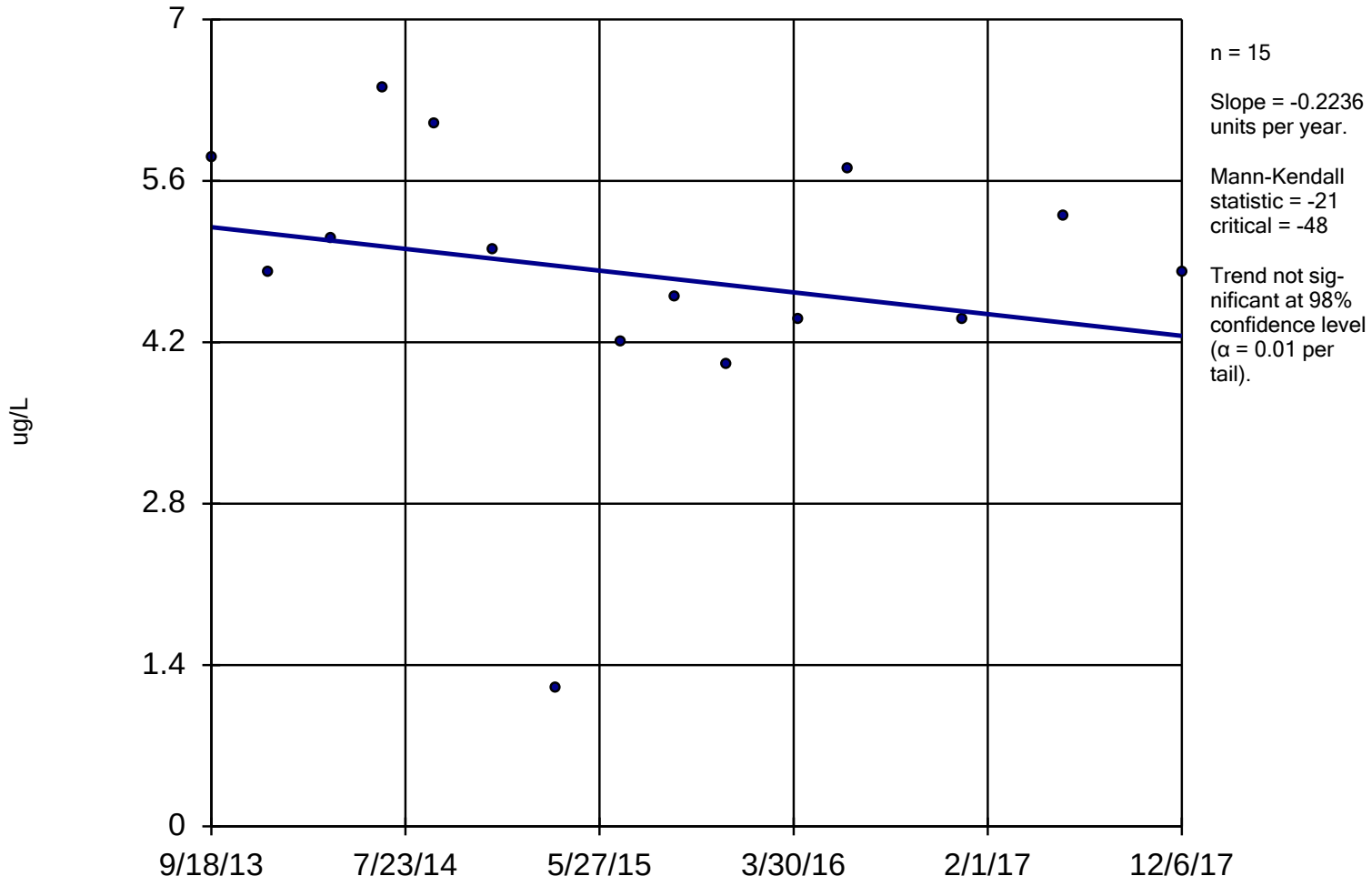
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

C-6



Constituent: TCE Analysis Run 12/28/2018 11:36 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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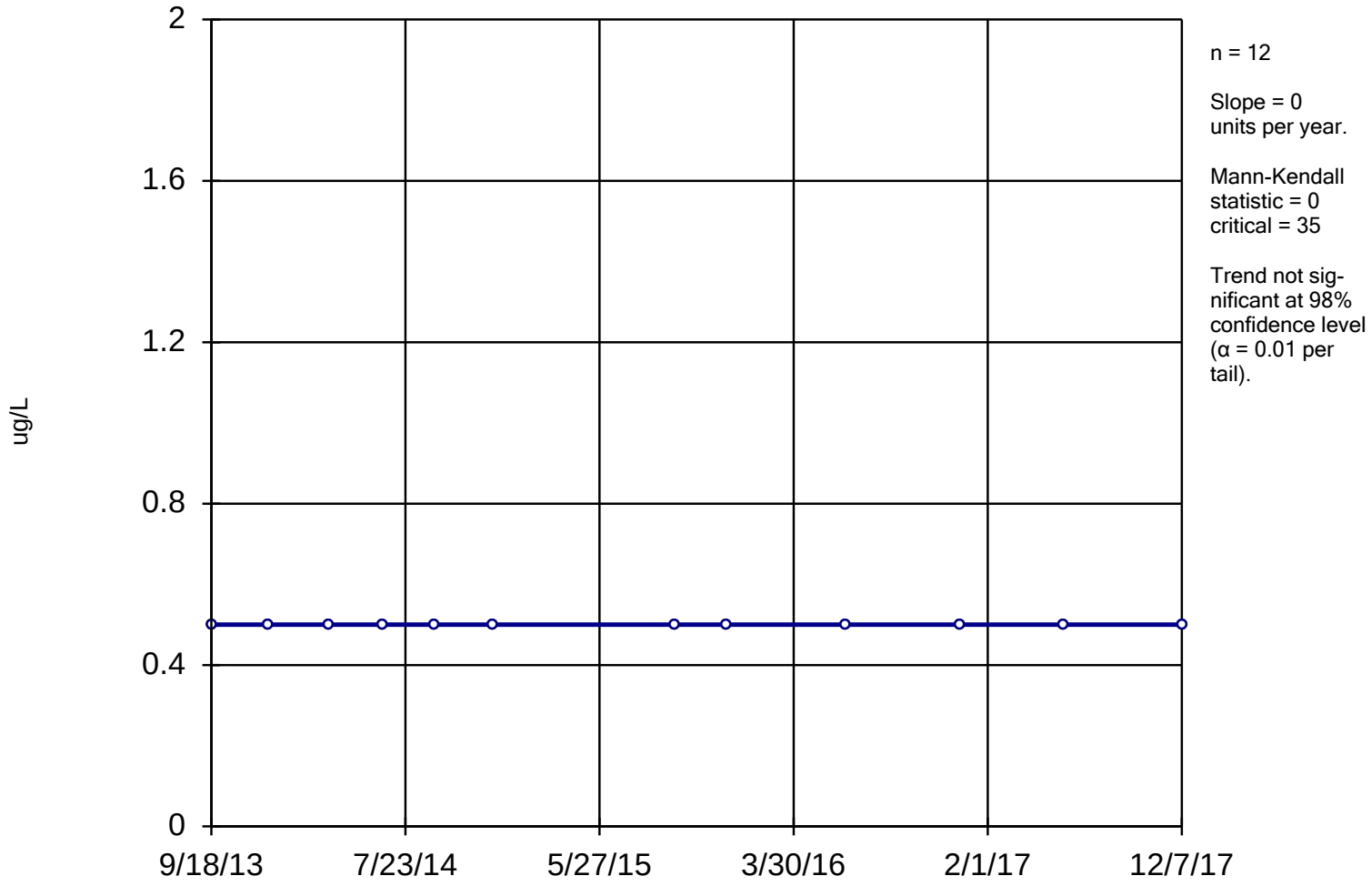
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-8



Constituent: TCE Analysis Run 12/28/2018 11:36 AM

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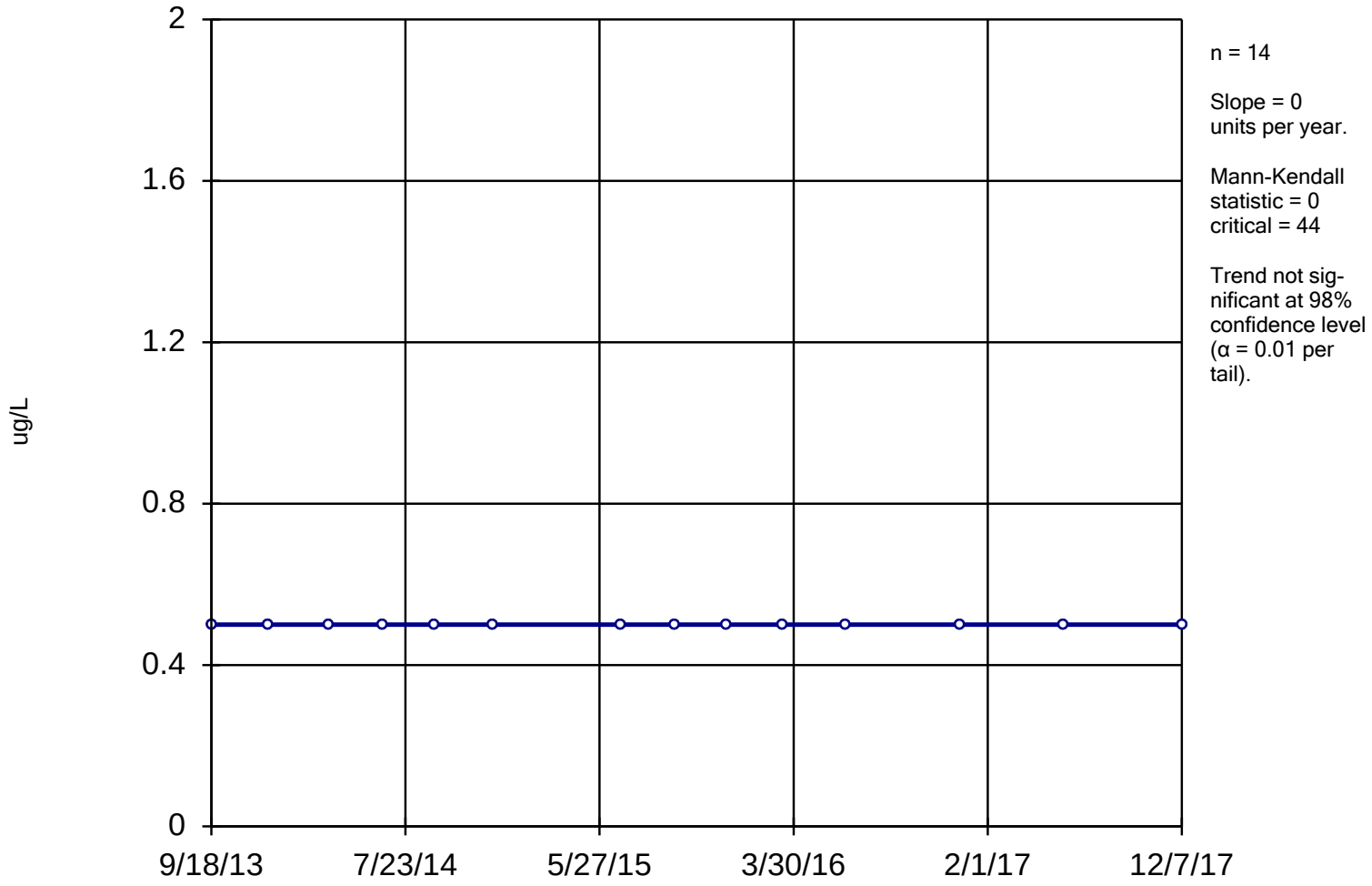
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-9



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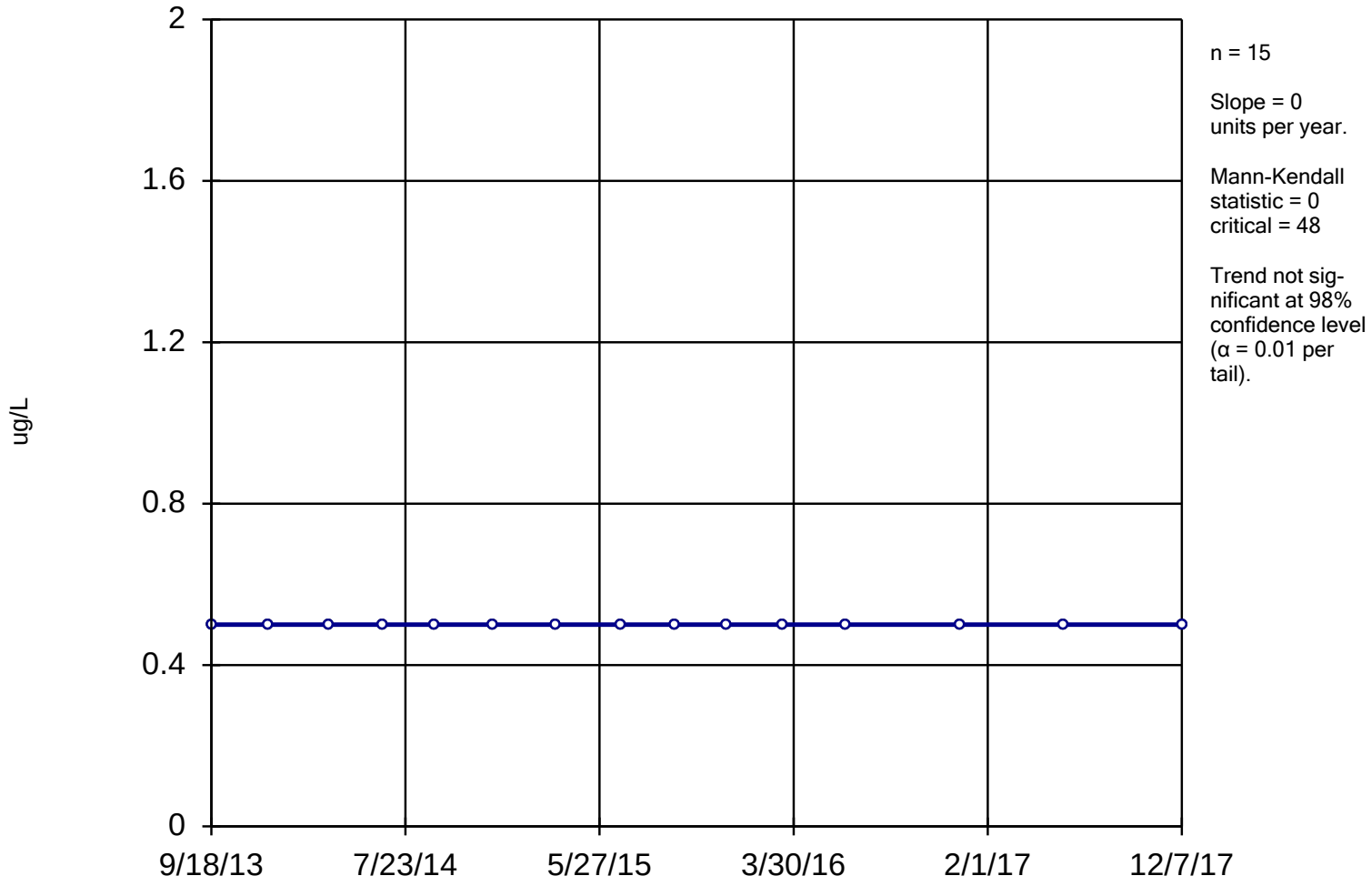
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-10D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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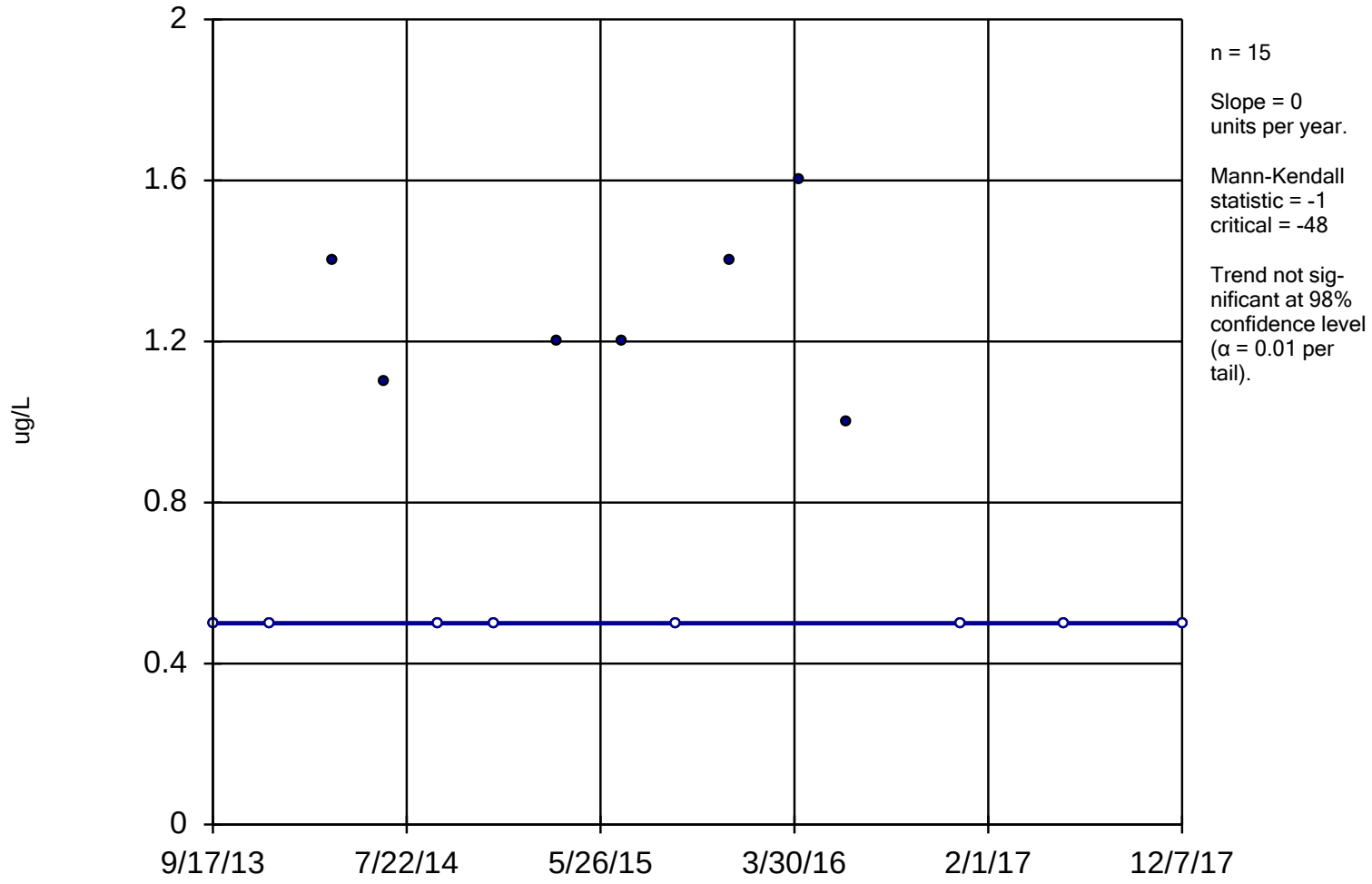
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-11I



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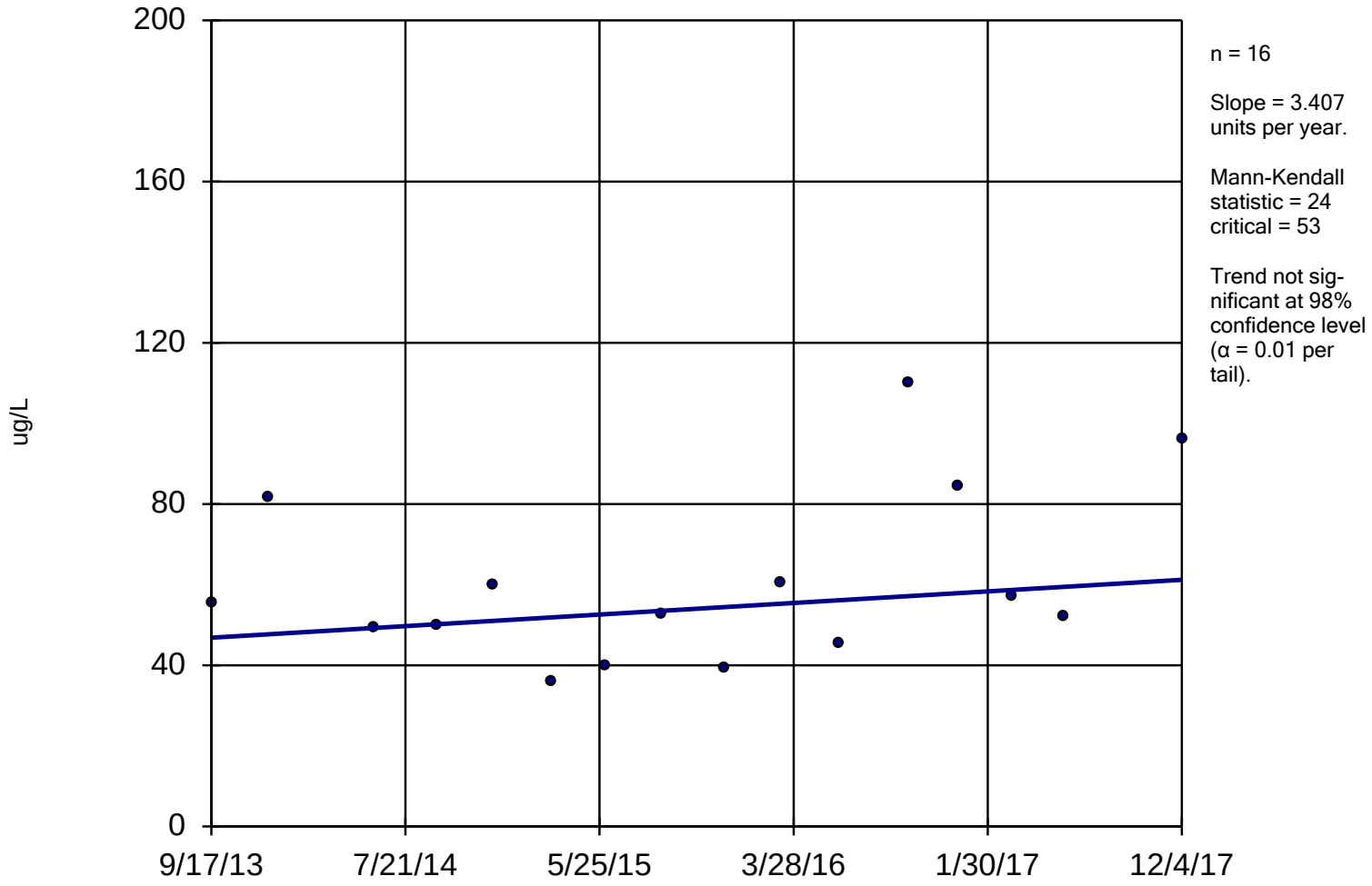
Sen's Slope Estimator

I-1



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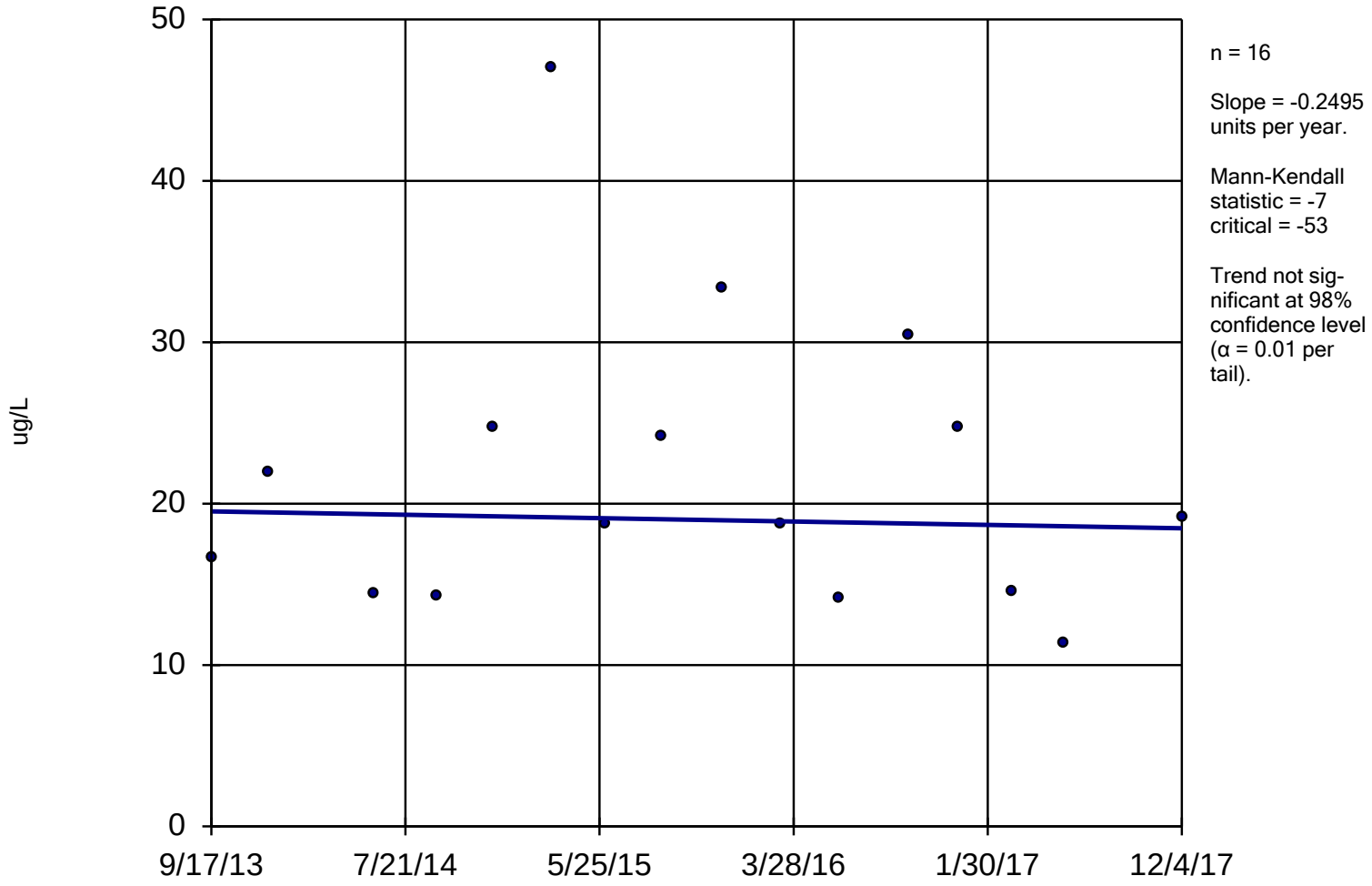
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

I-2



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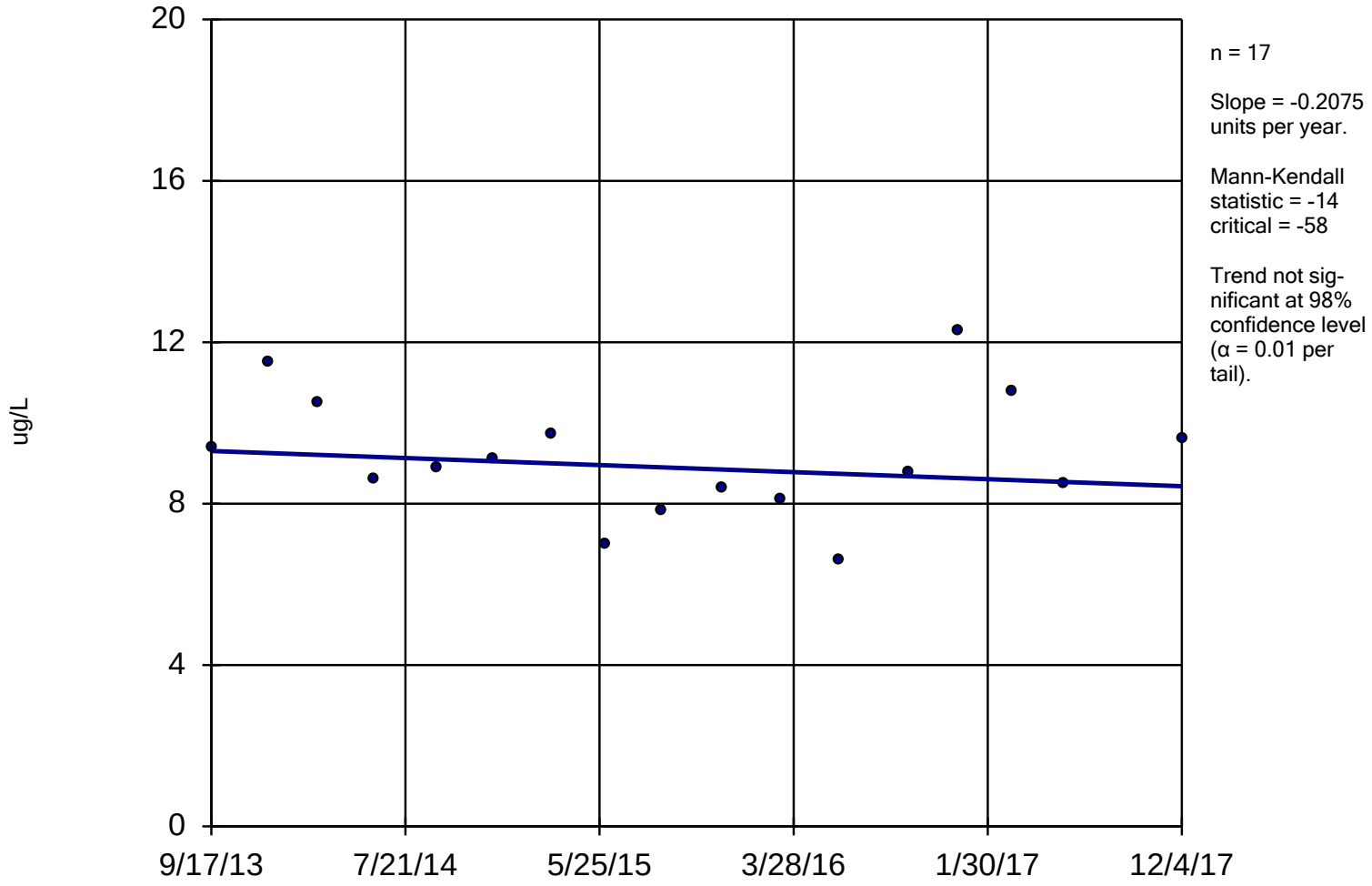
Sen's Slope Estimator

I-3



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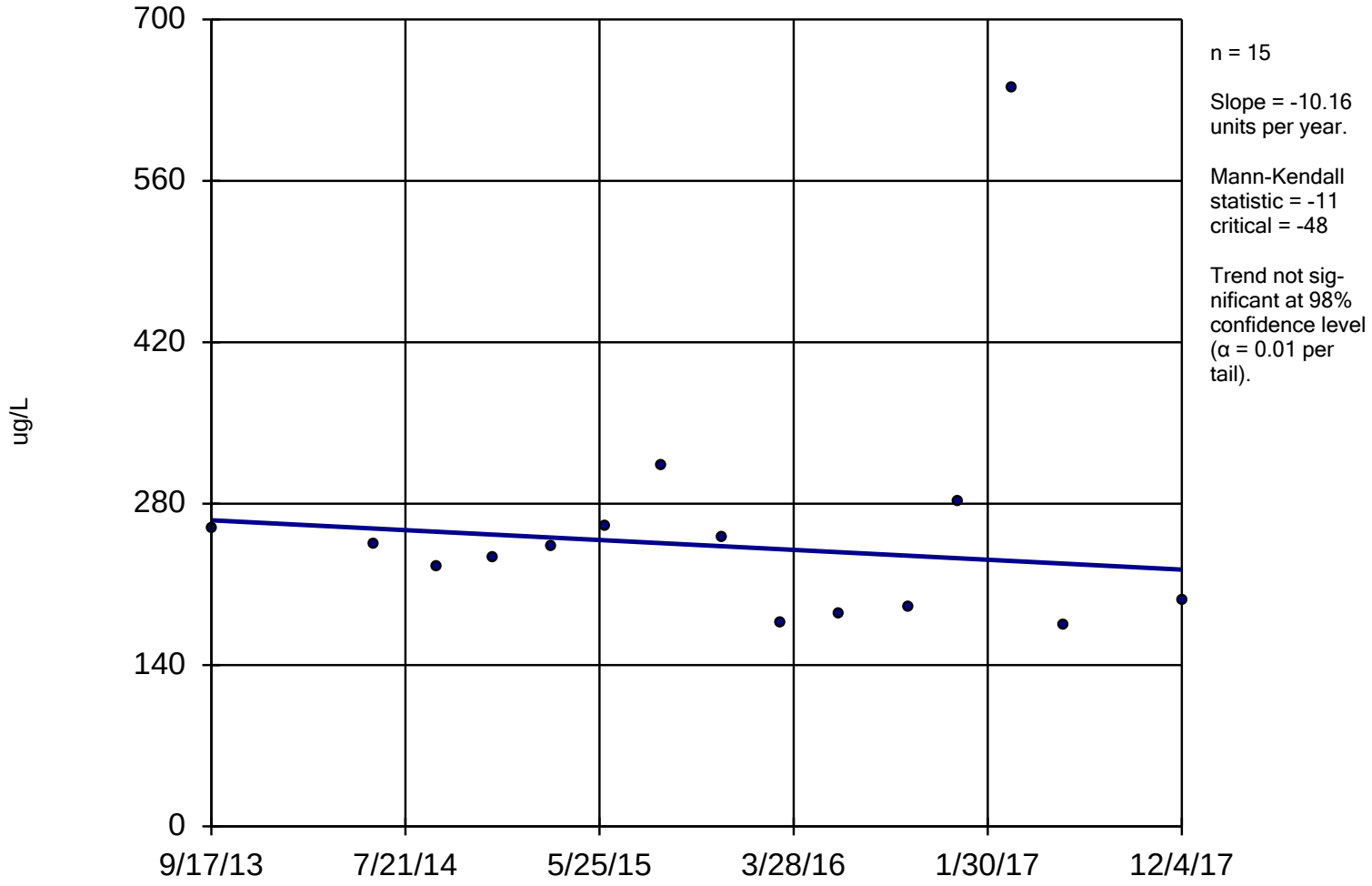
Sen's Slope Estimator

I-4



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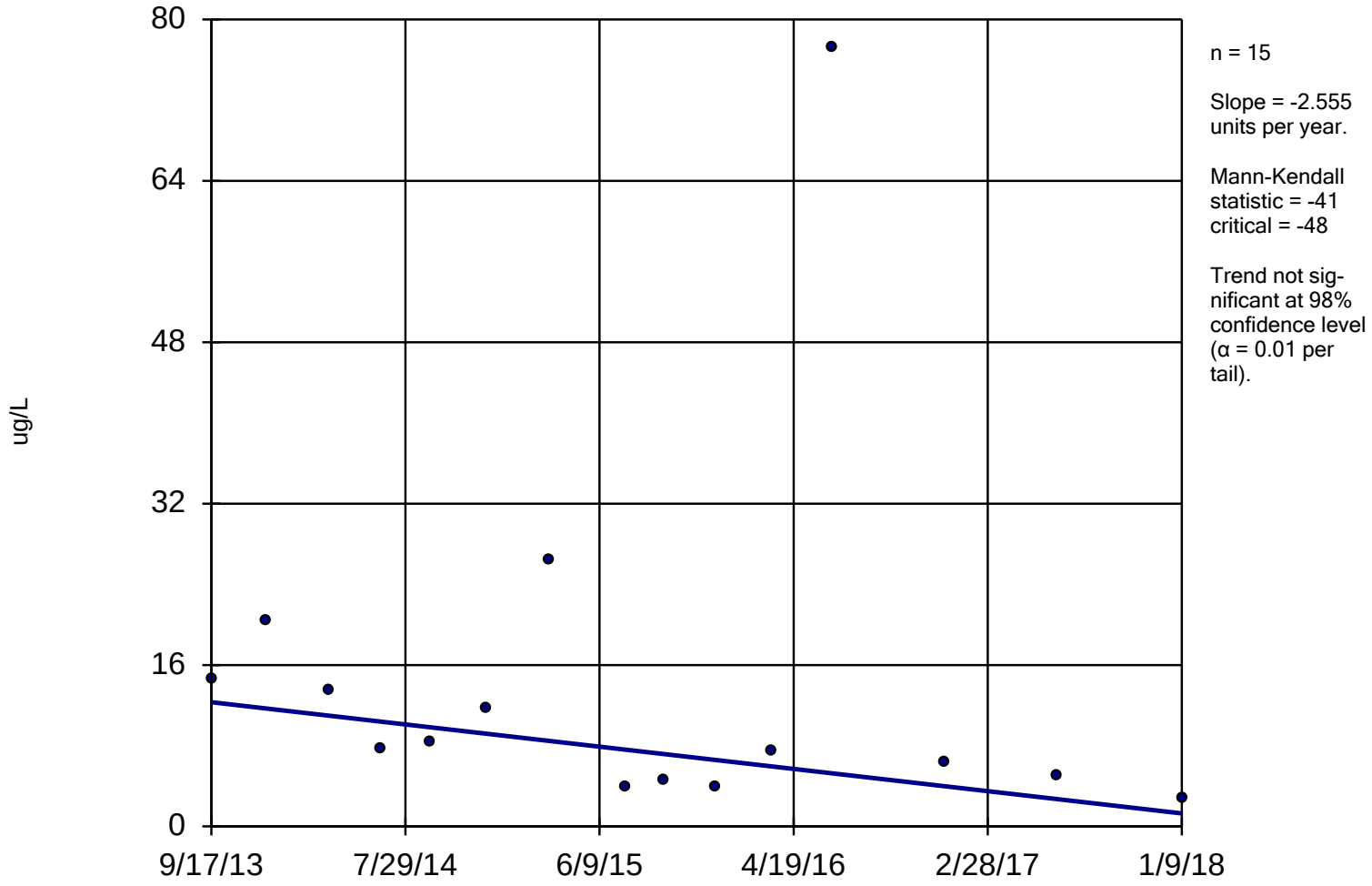
Sen's Slope Estimator

S-2DB



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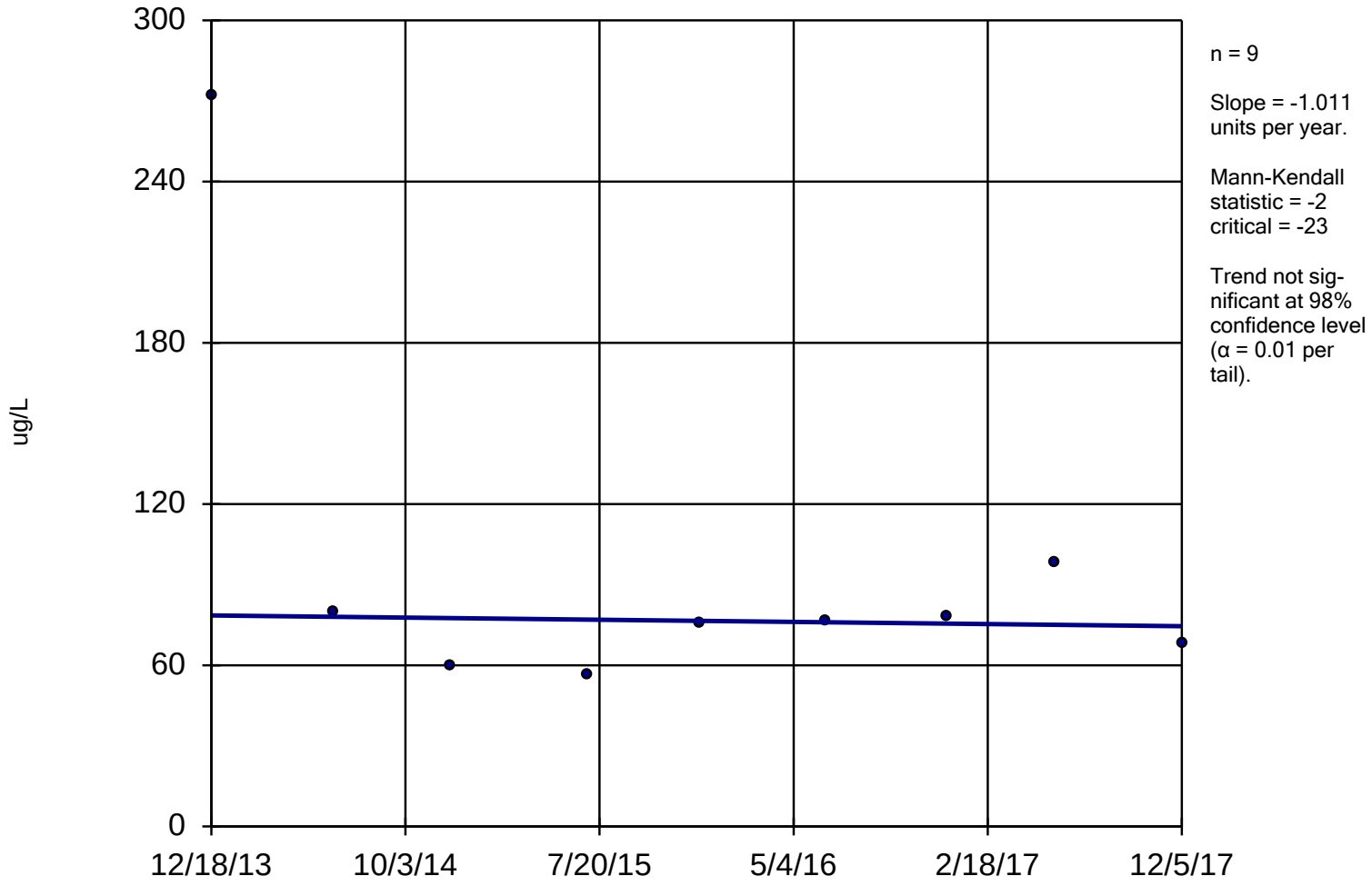
Sen's Slope Estimator

SM-1



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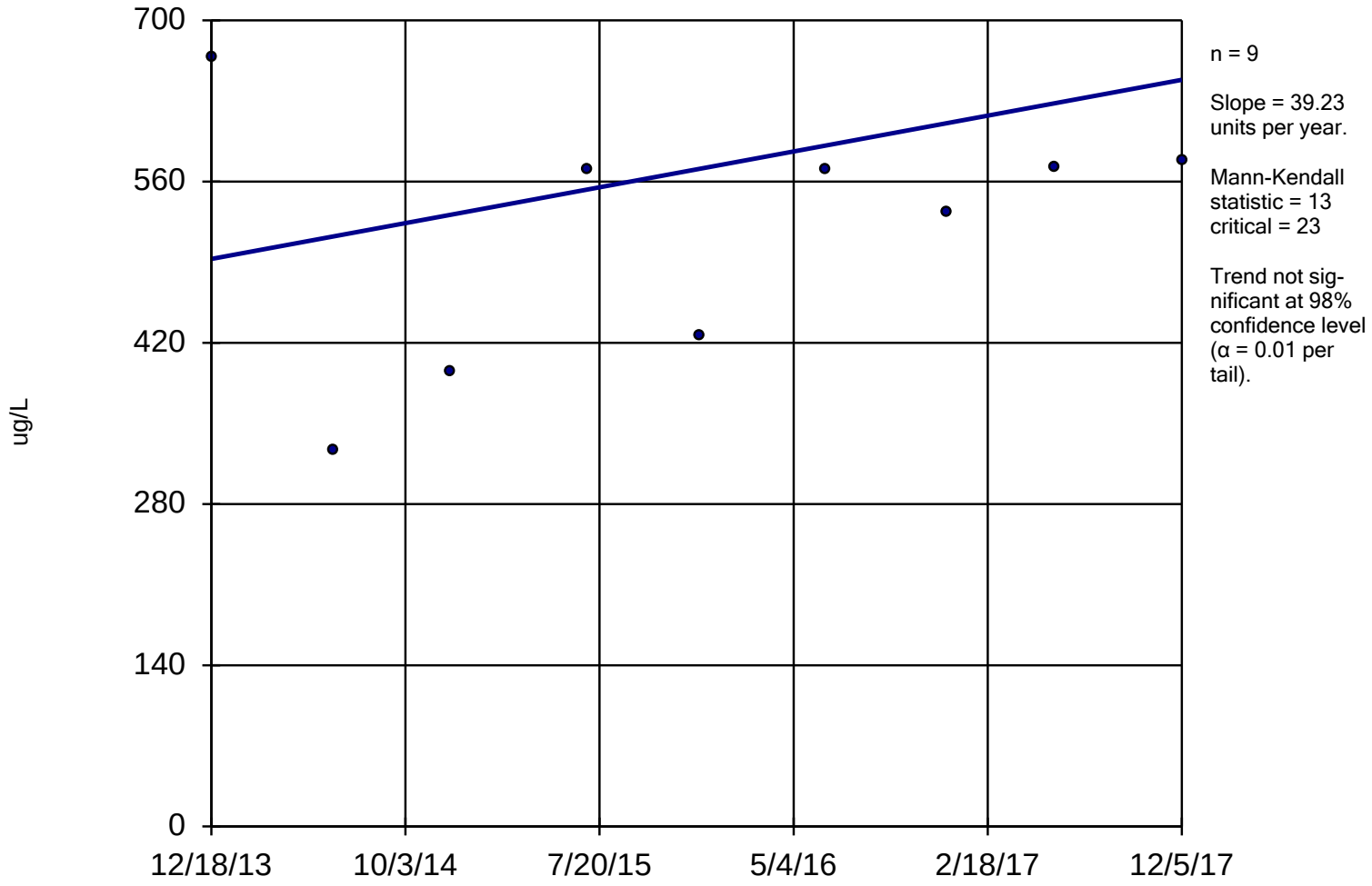
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

SM-2



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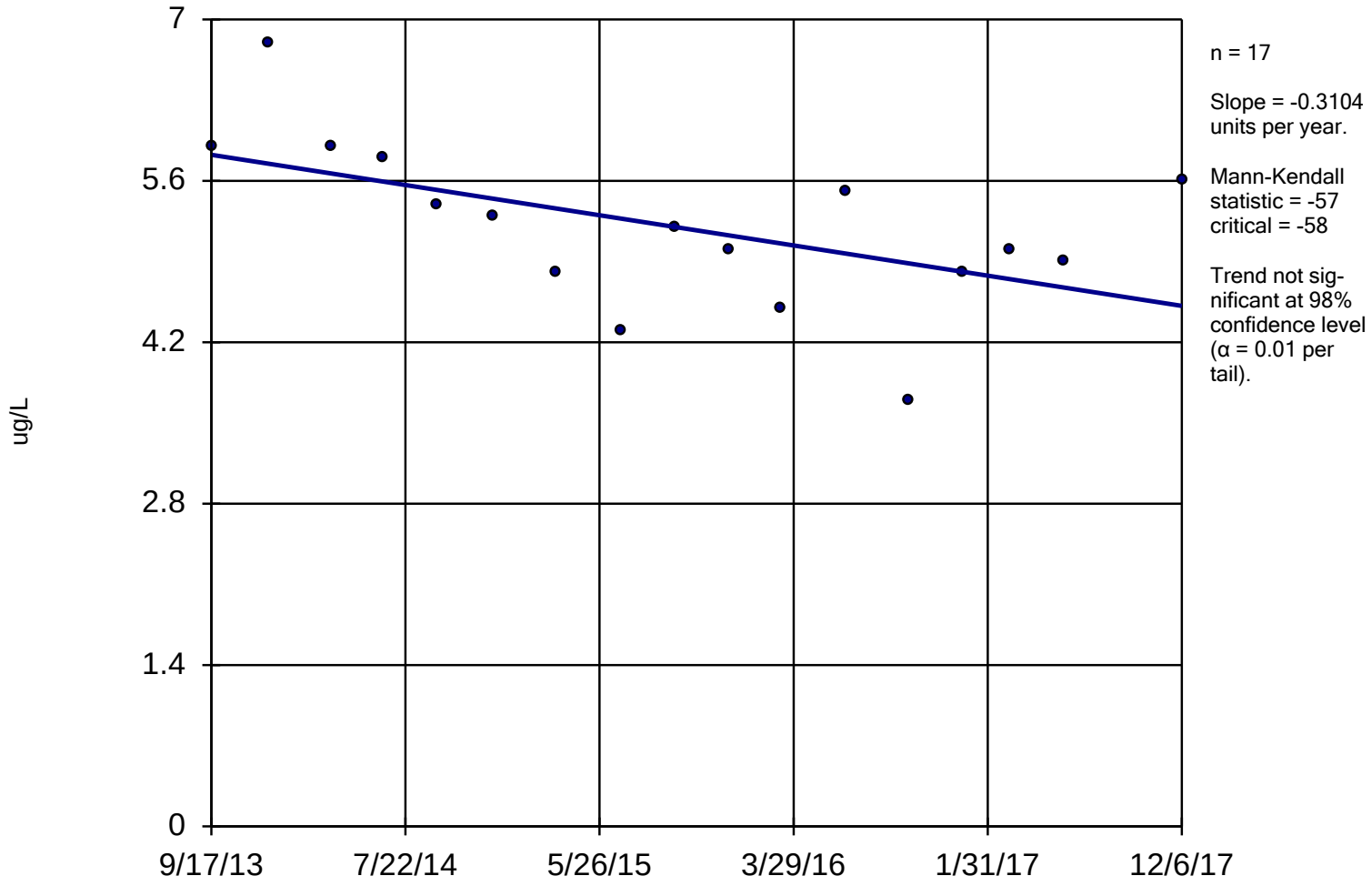
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

W-6



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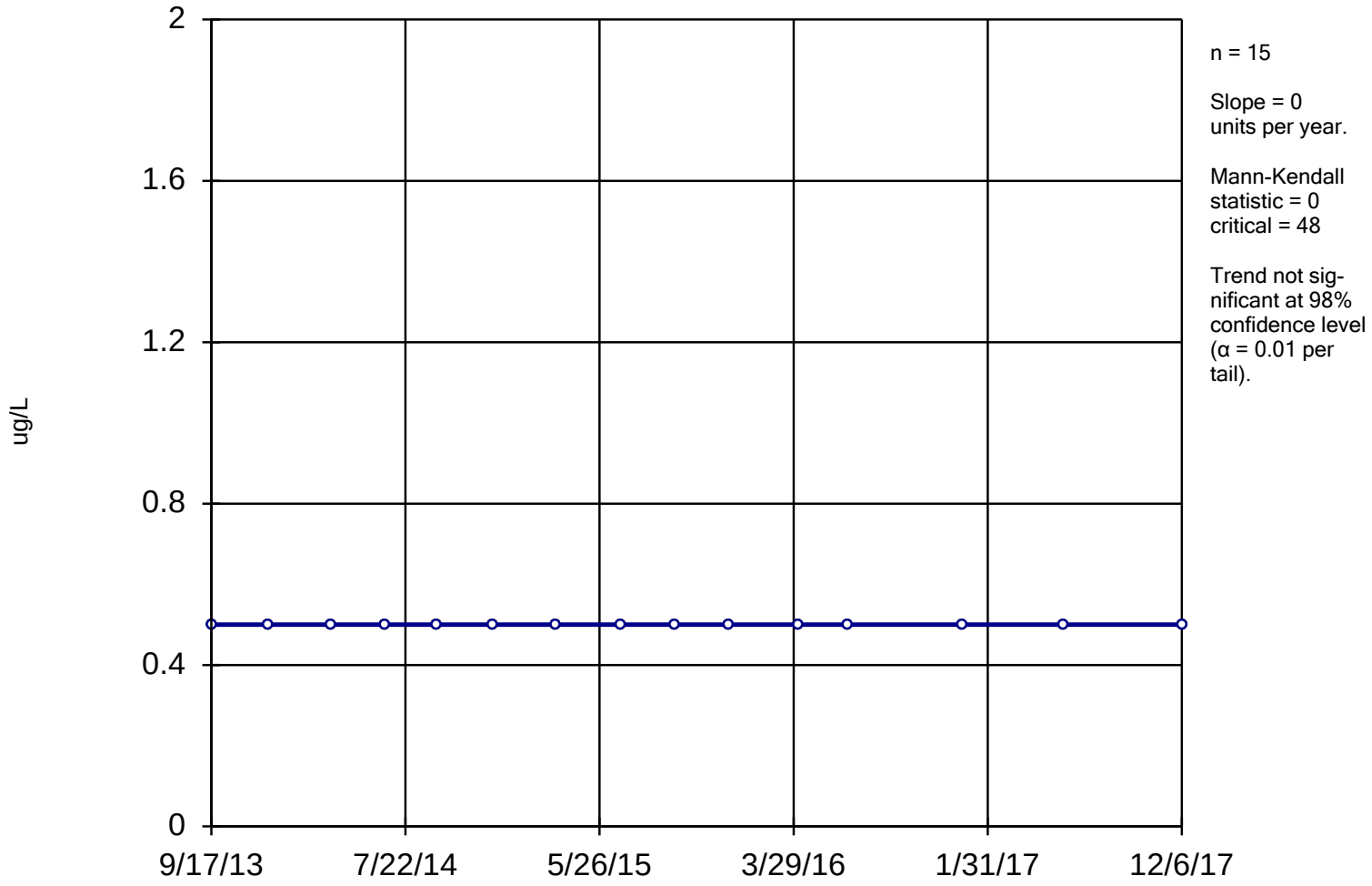
Sen's Slope Estimator

W-7



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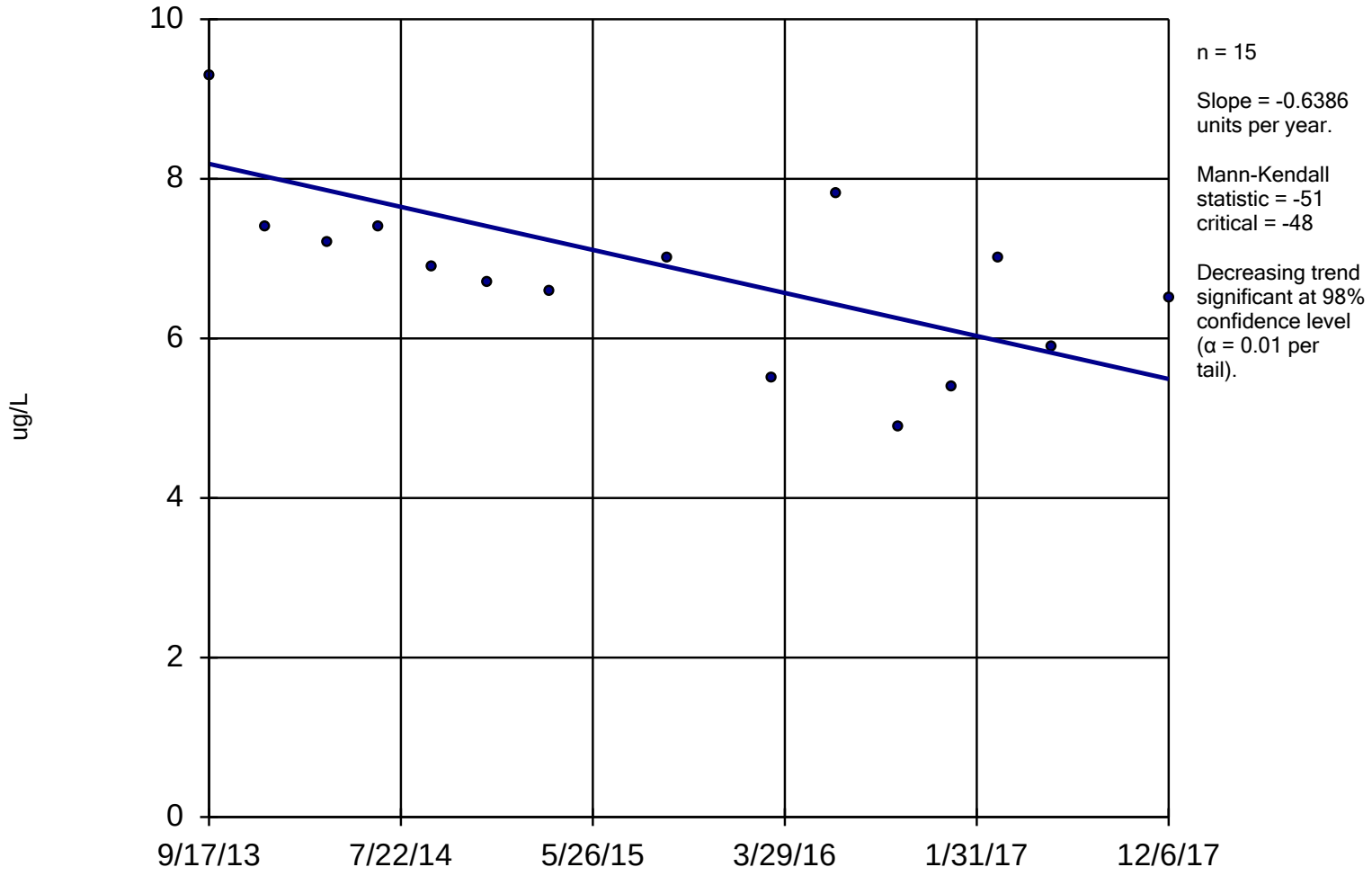
Sen's Slope Estimator

W-12



Constituent: TCE Analysis Run 12/28/2018 11:36 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

CUMULATIVE DATA SEN'S SLOPE ANALYSIS

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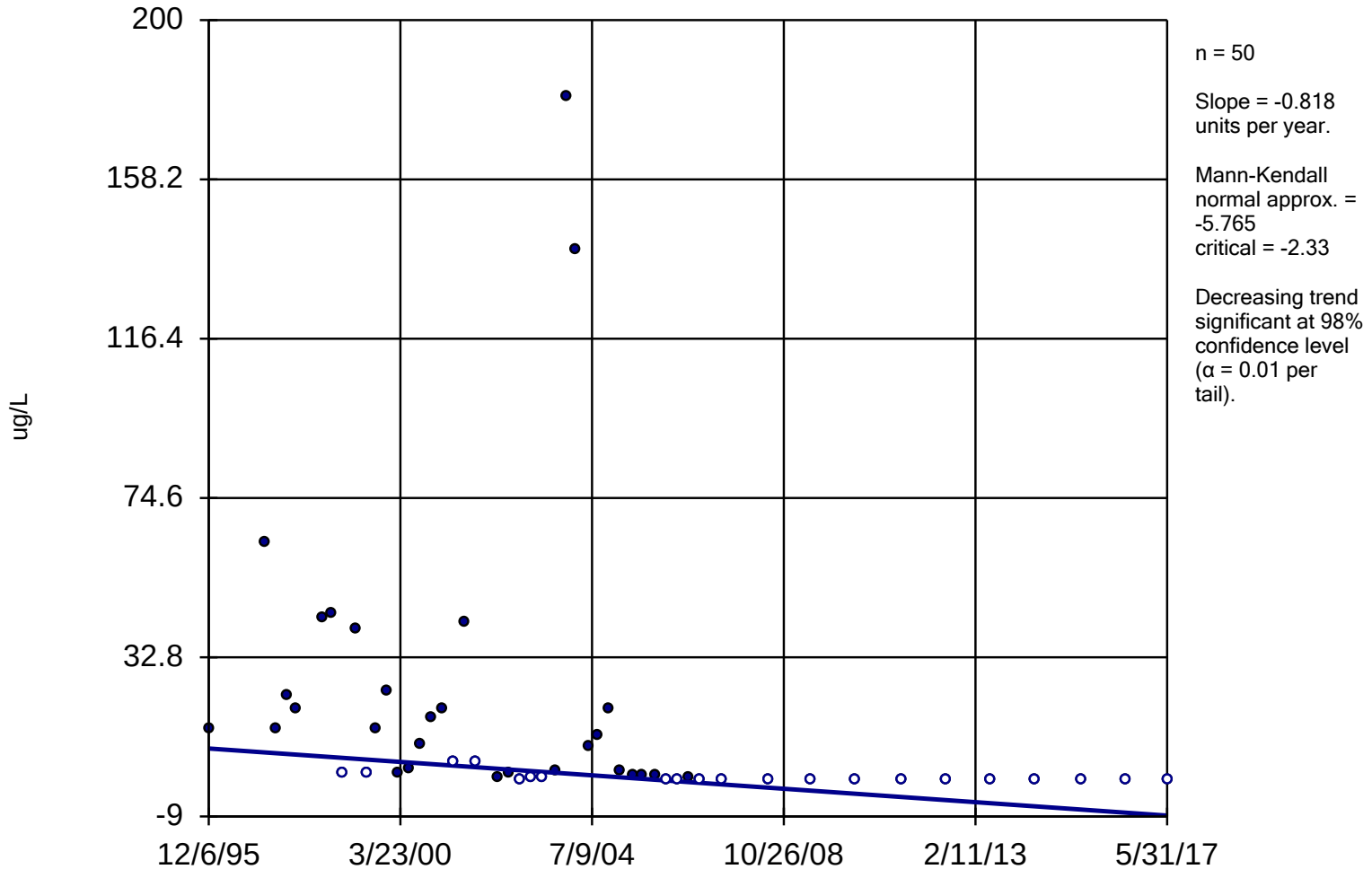
Sen's Slope Estimator

B-1I



Constituent: 1,2-DCE Analysis Run 12/28/2018 10:46 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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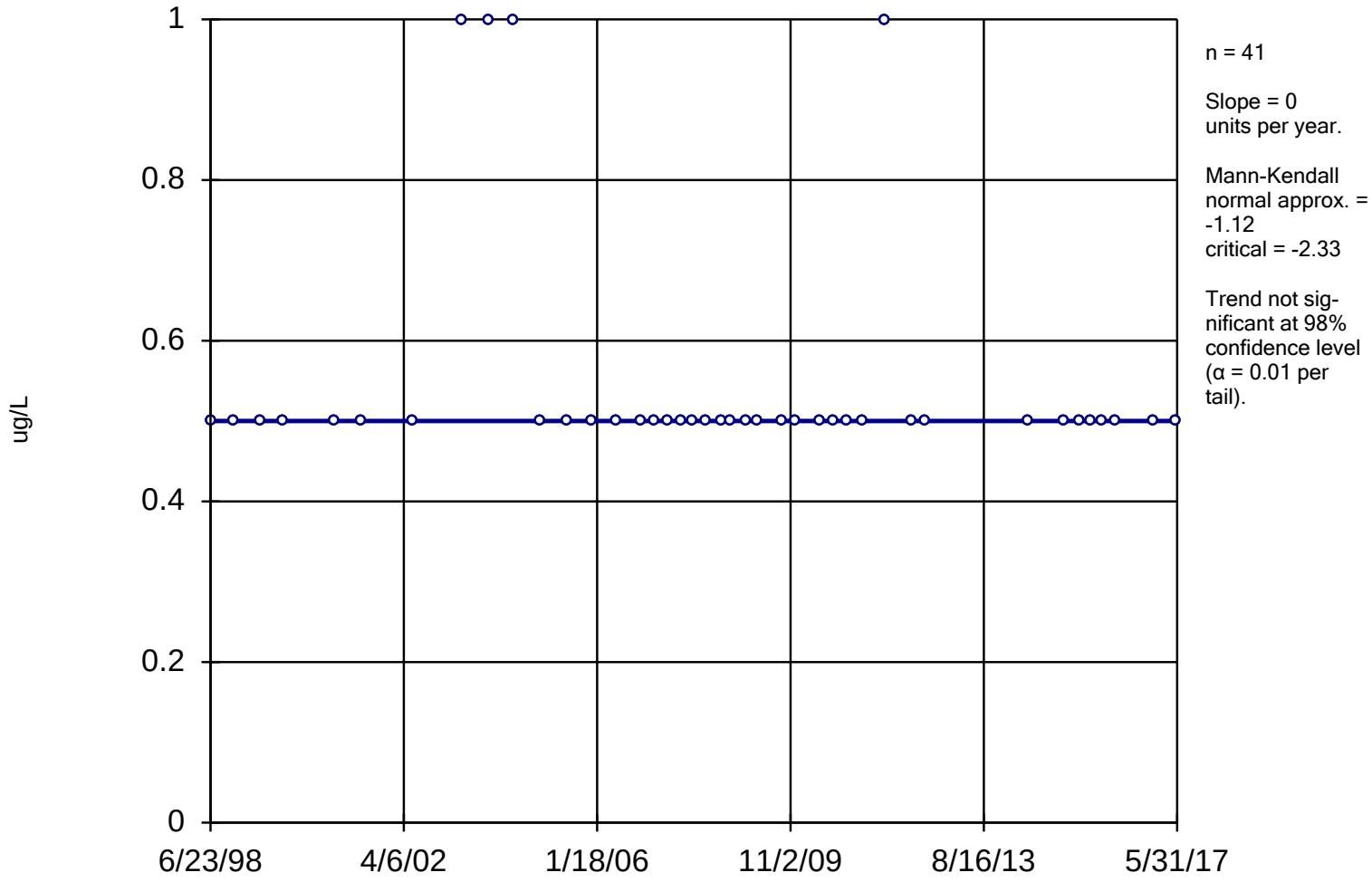
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-2D



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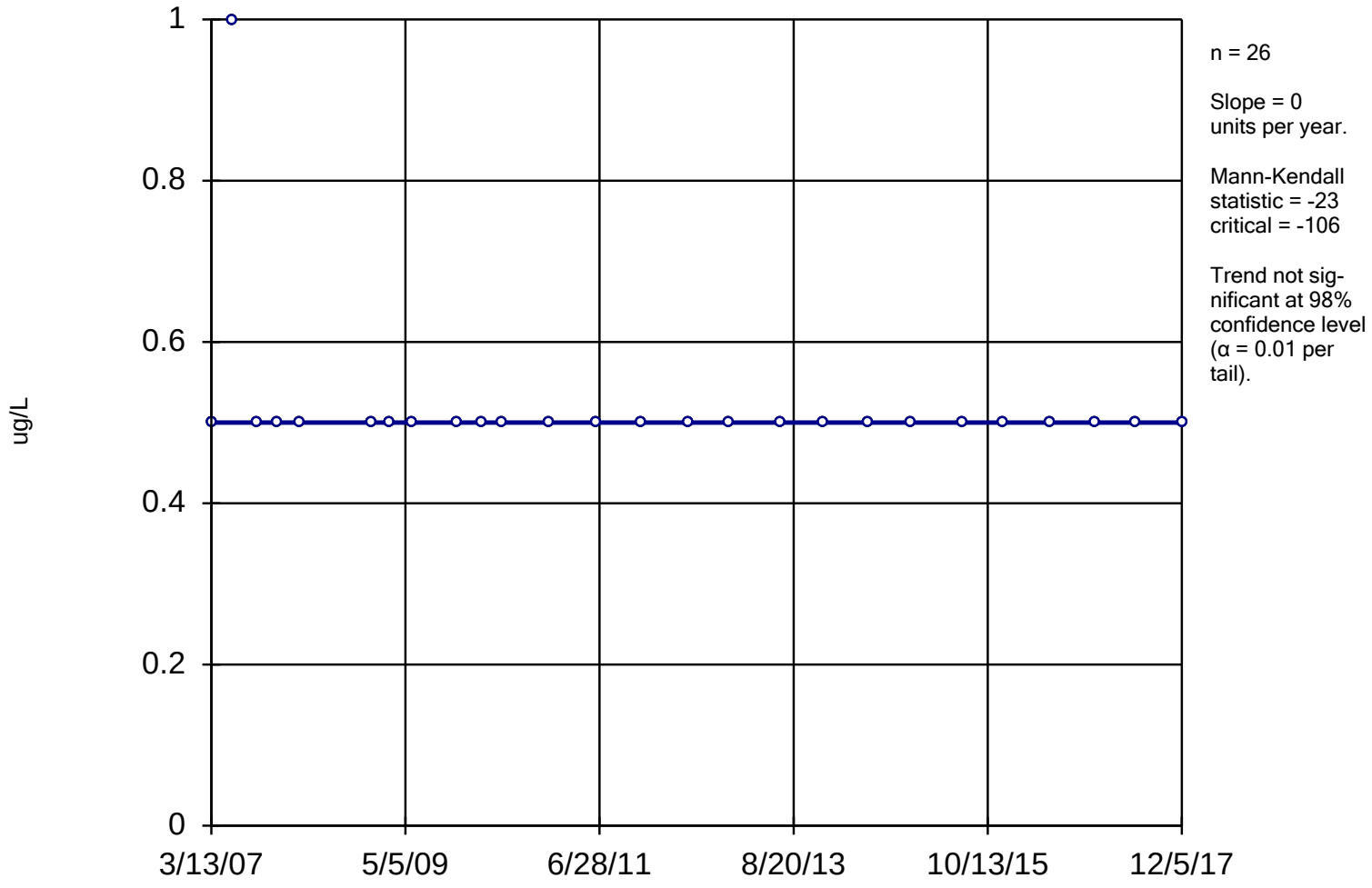
Sen's Slope Estimator

B-2I



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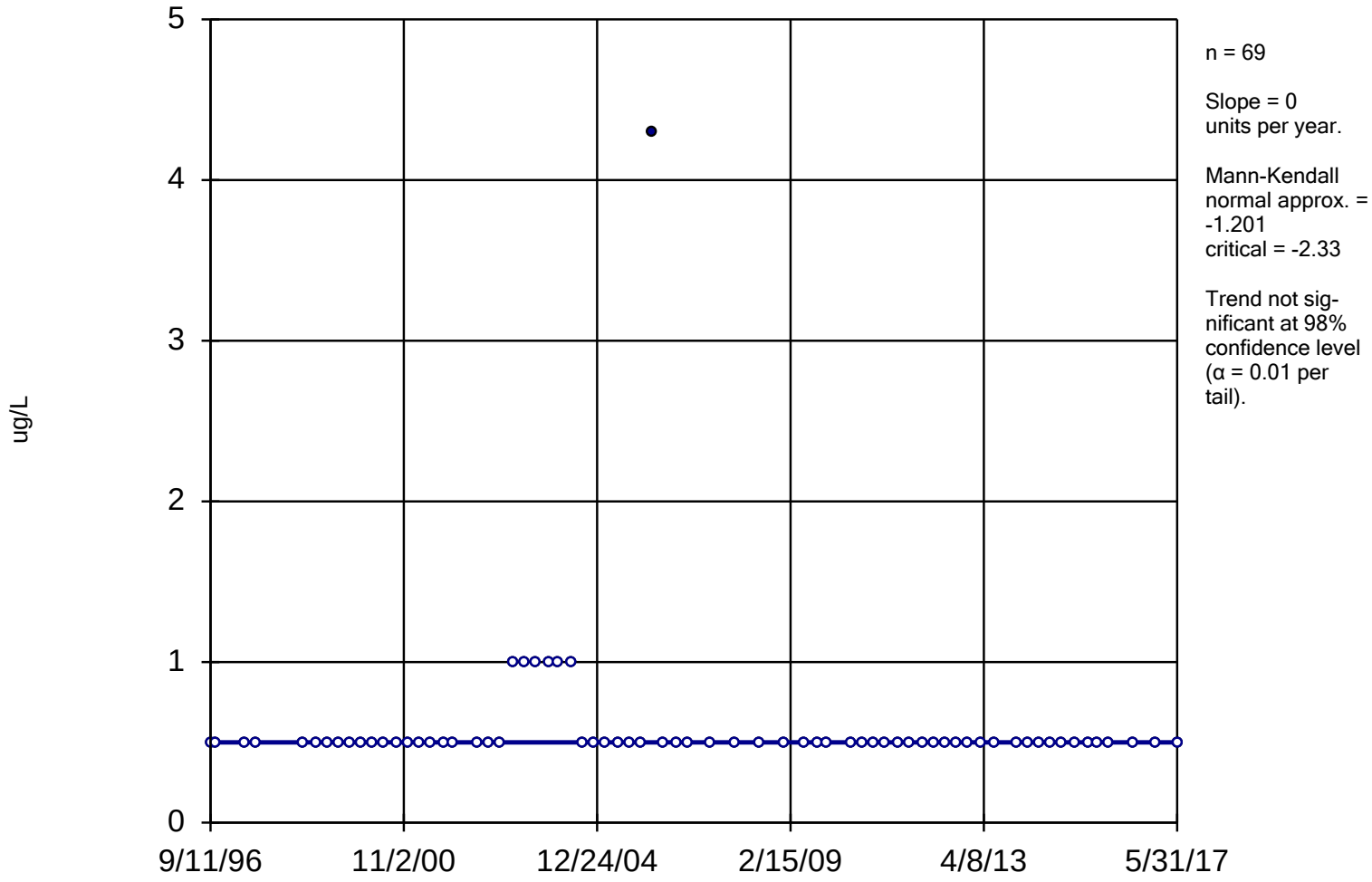
Sen's Slope Estimator

B-2S



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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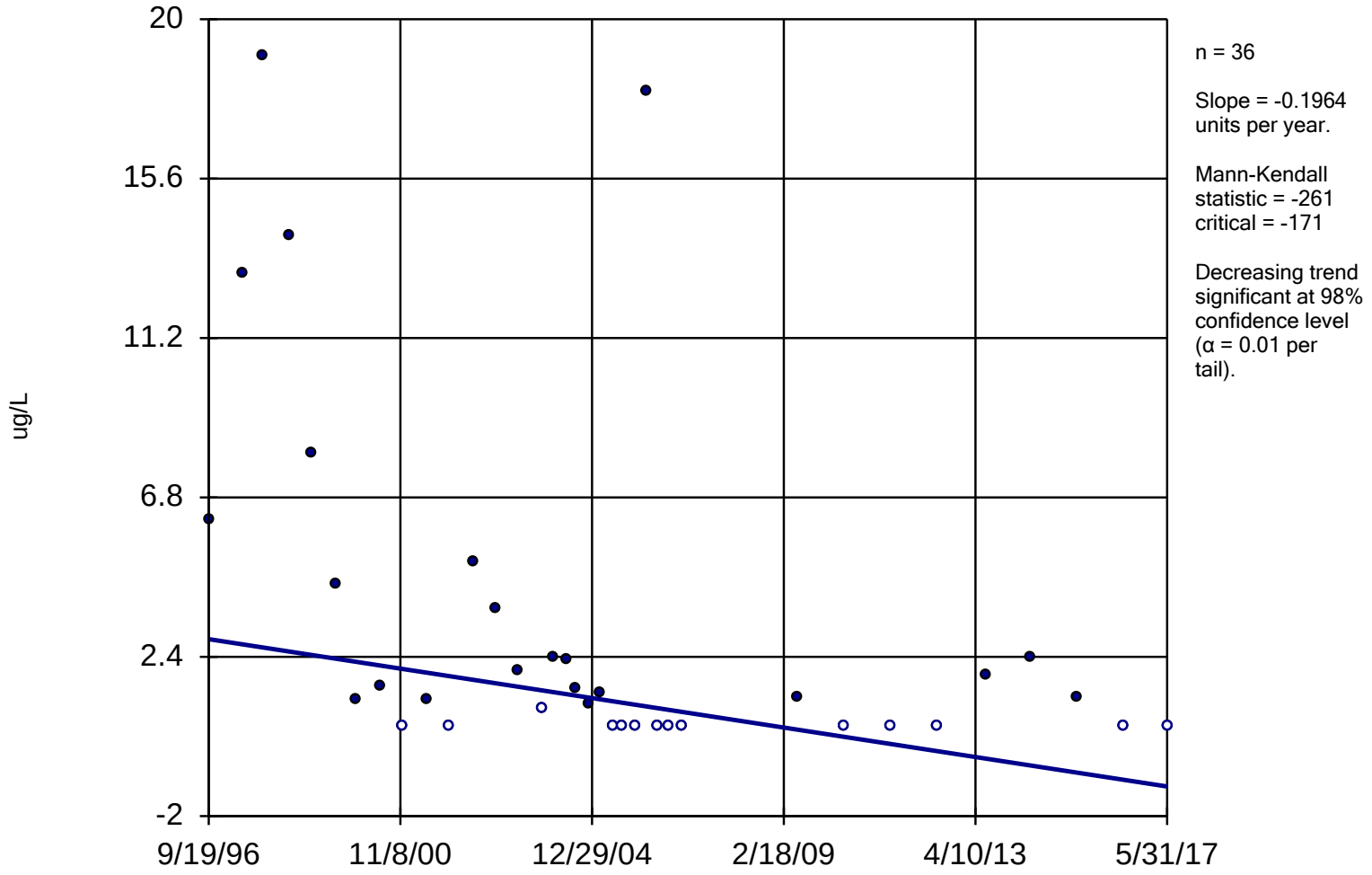
Sen's Slope Estimator

B-3I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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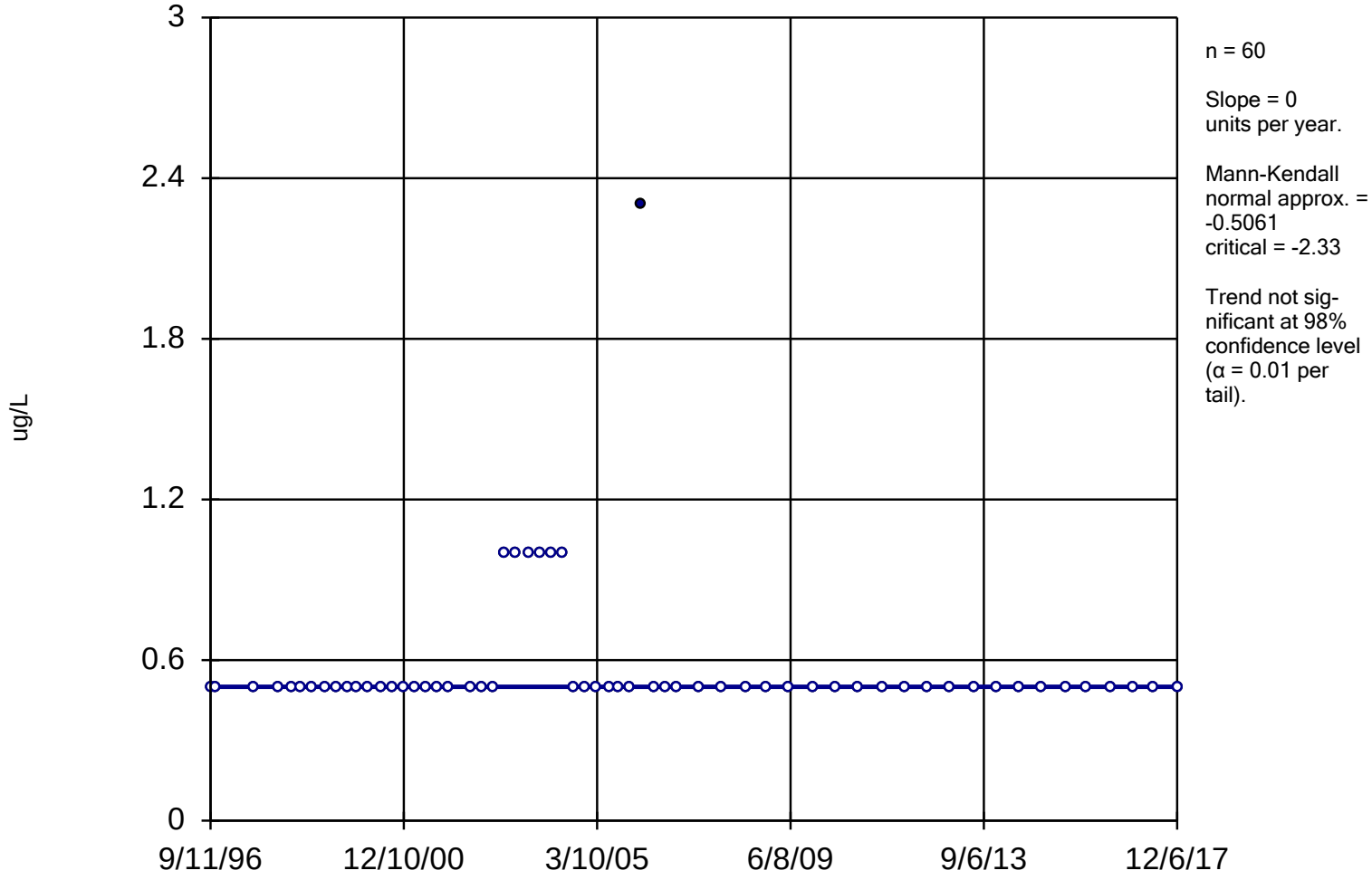
Sen's Slope Estimator

B-4D



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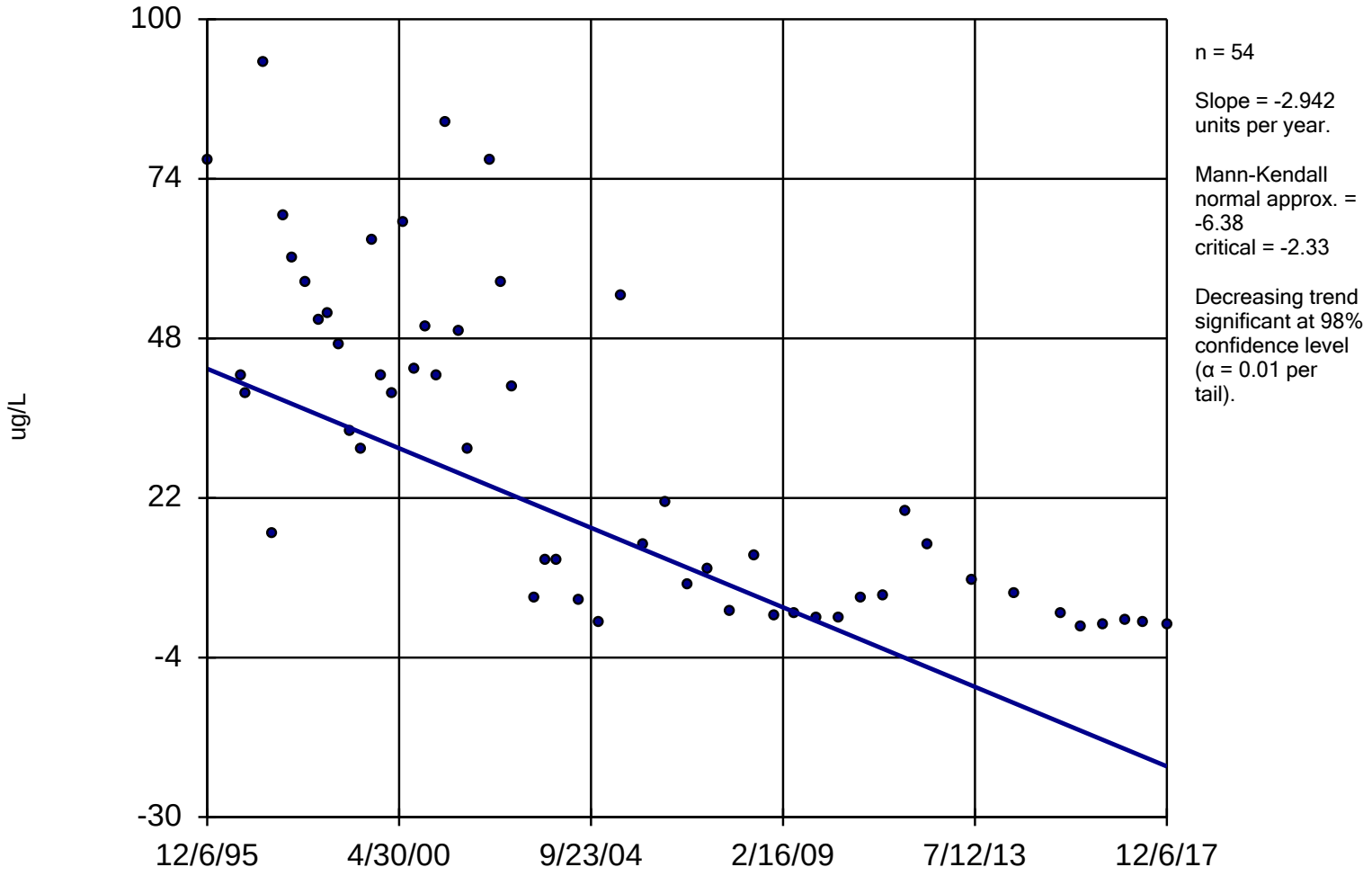
Sen's Slope Estimator

B-4I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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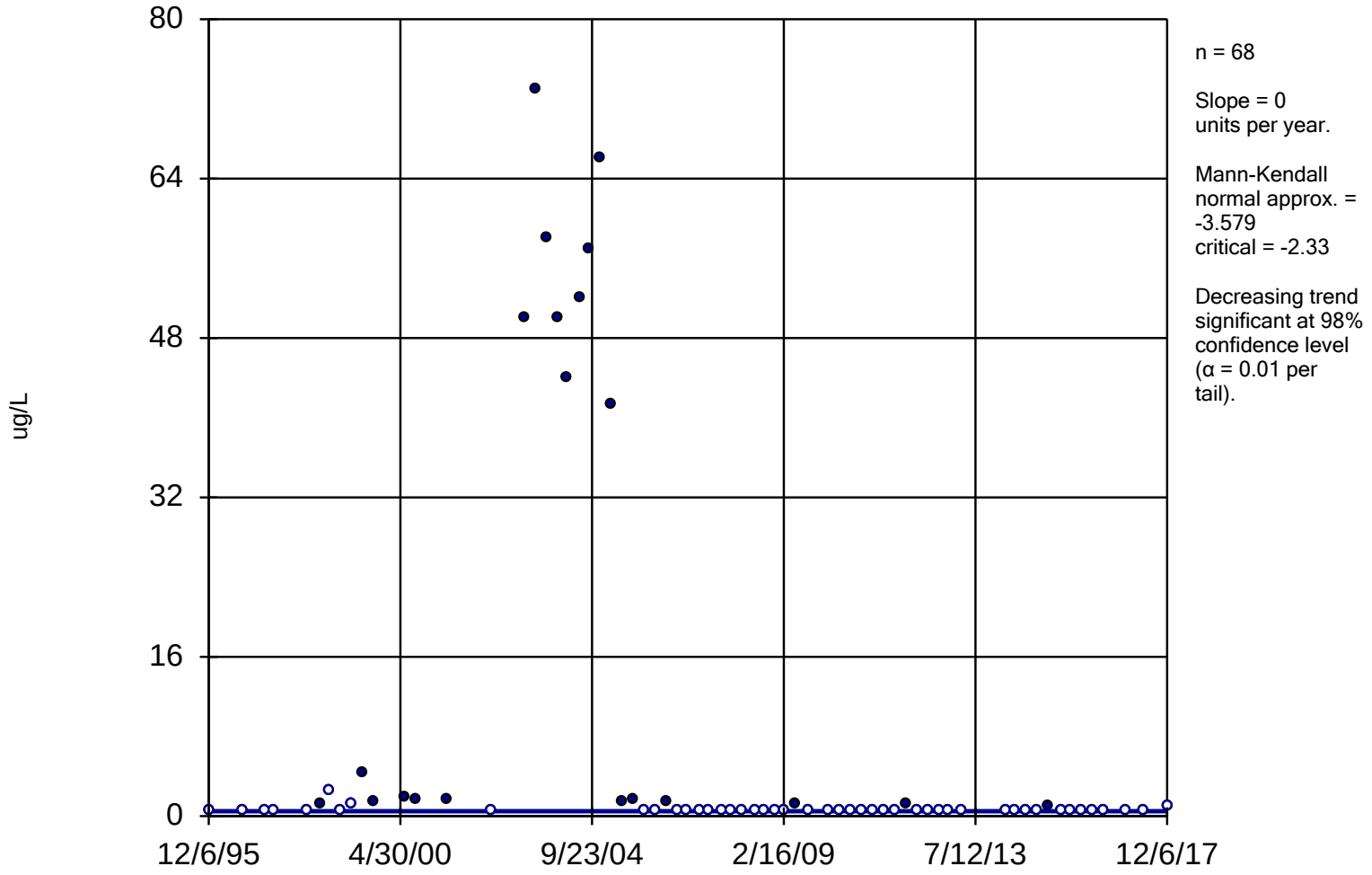
Sen's Slope Estimator

B-4S



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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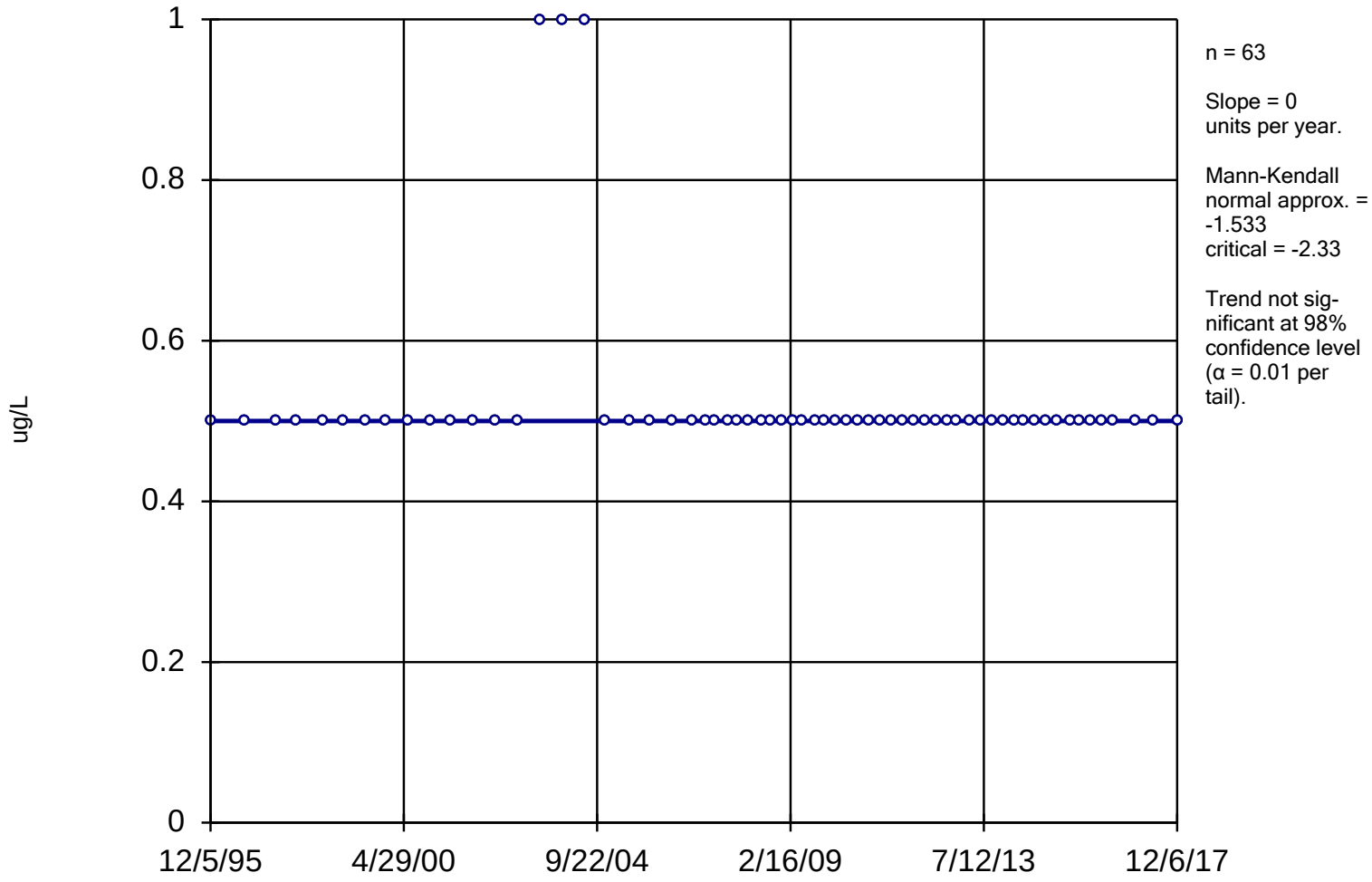
Sen's Slope Estimator

B-5D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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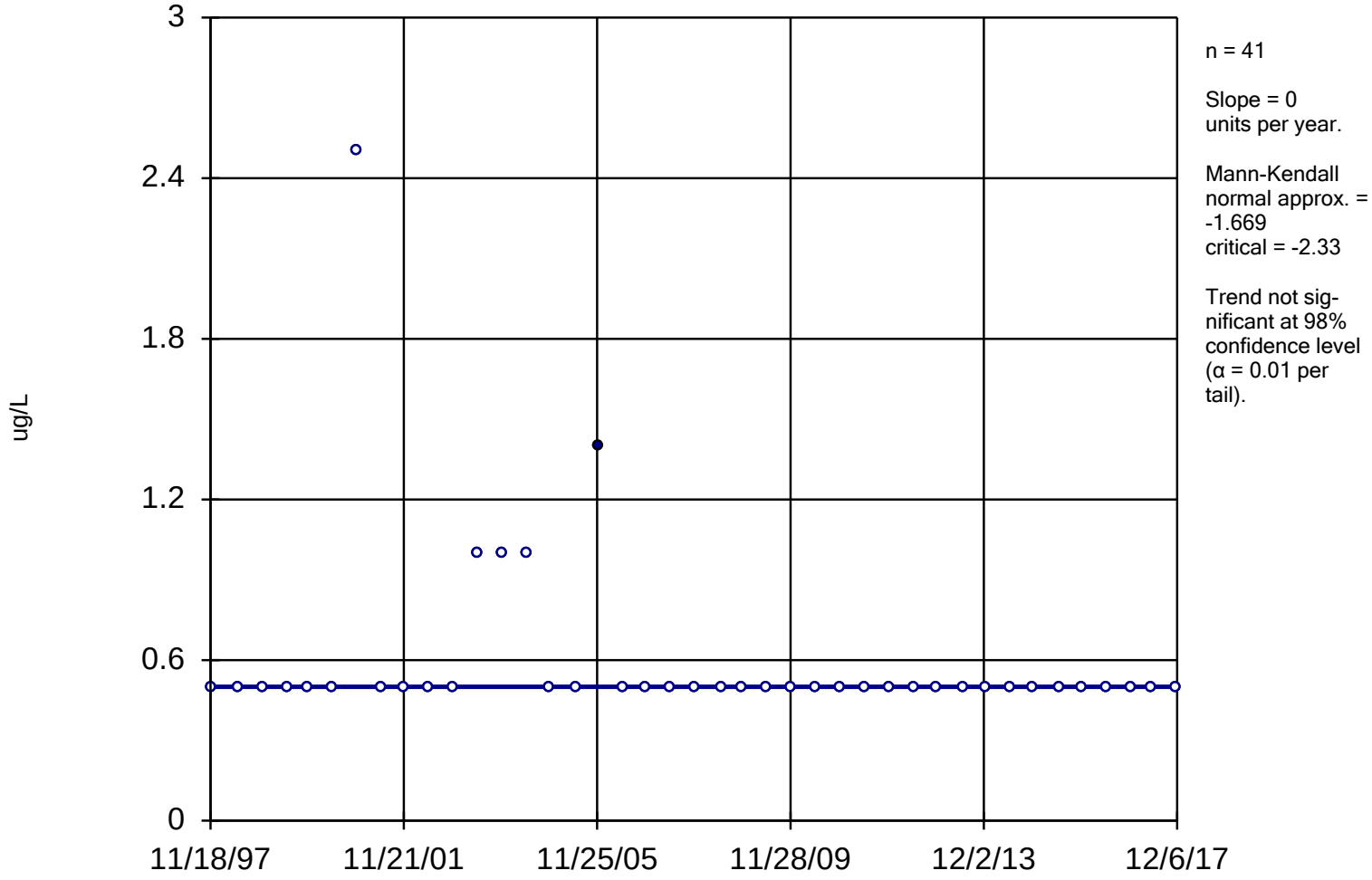
Sen's Slope Estimator

B-5I



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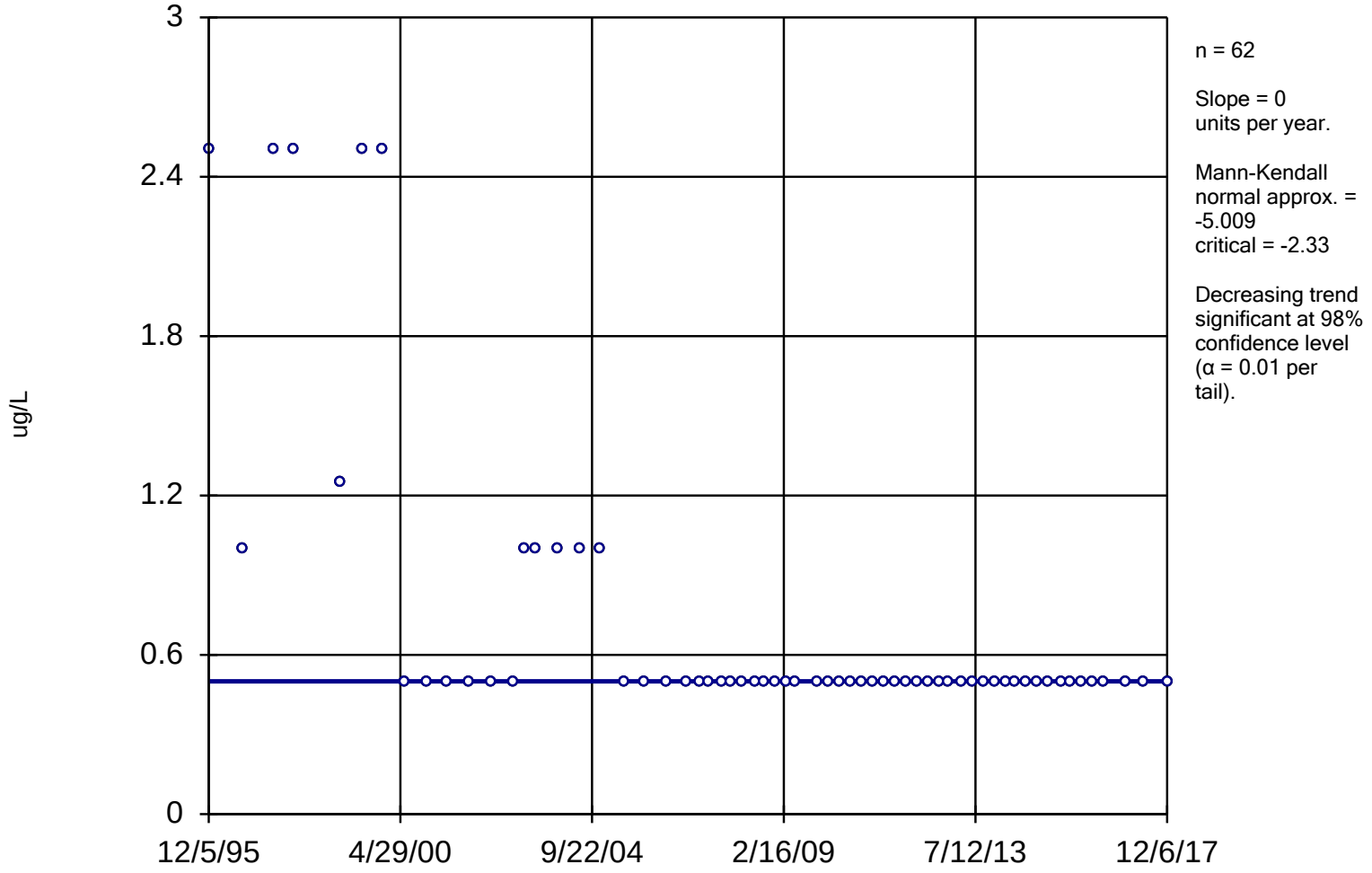
Sen's Slope Estimator

B-6I



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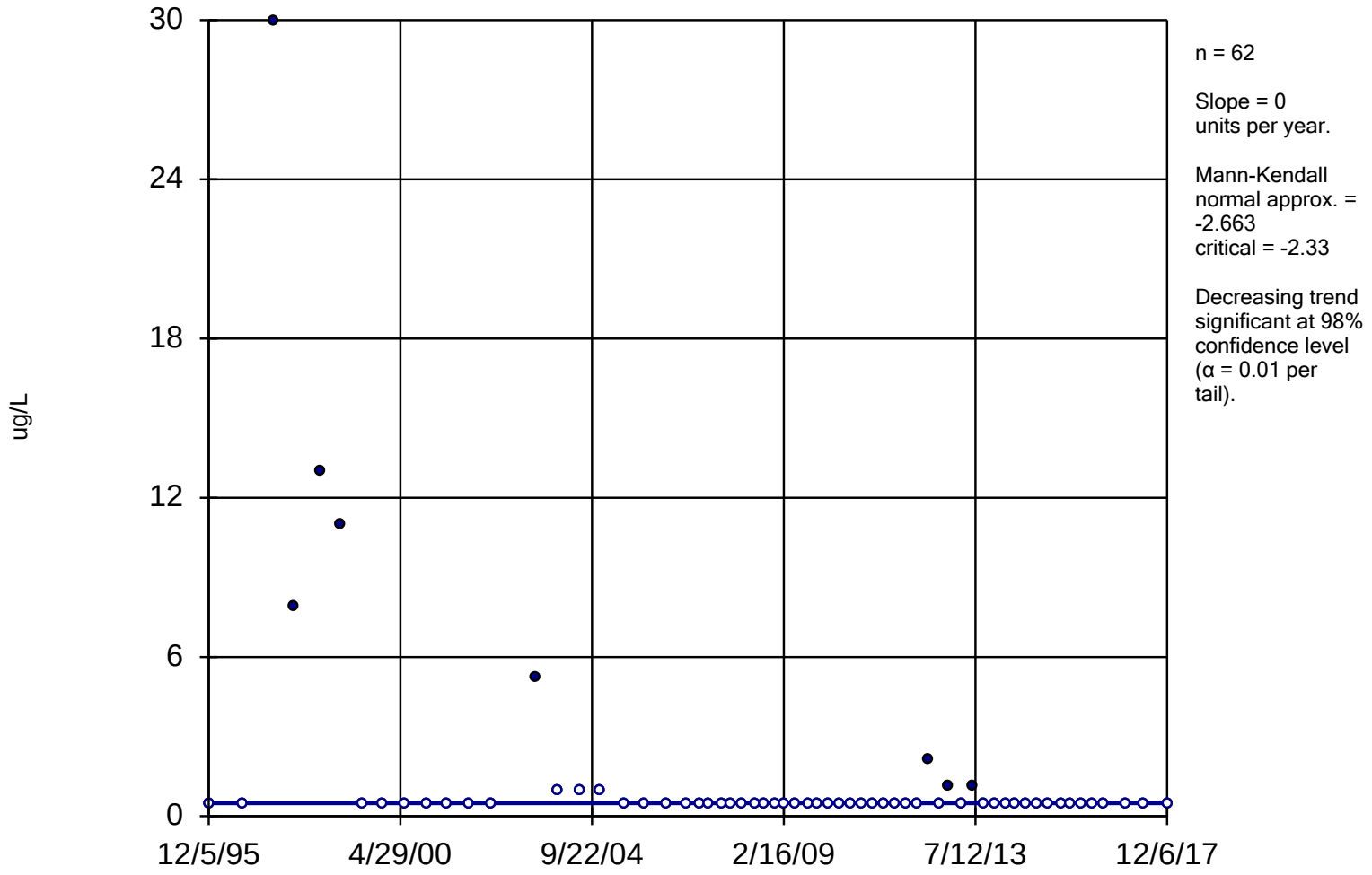
Sen's Slope Estimator

B-6S



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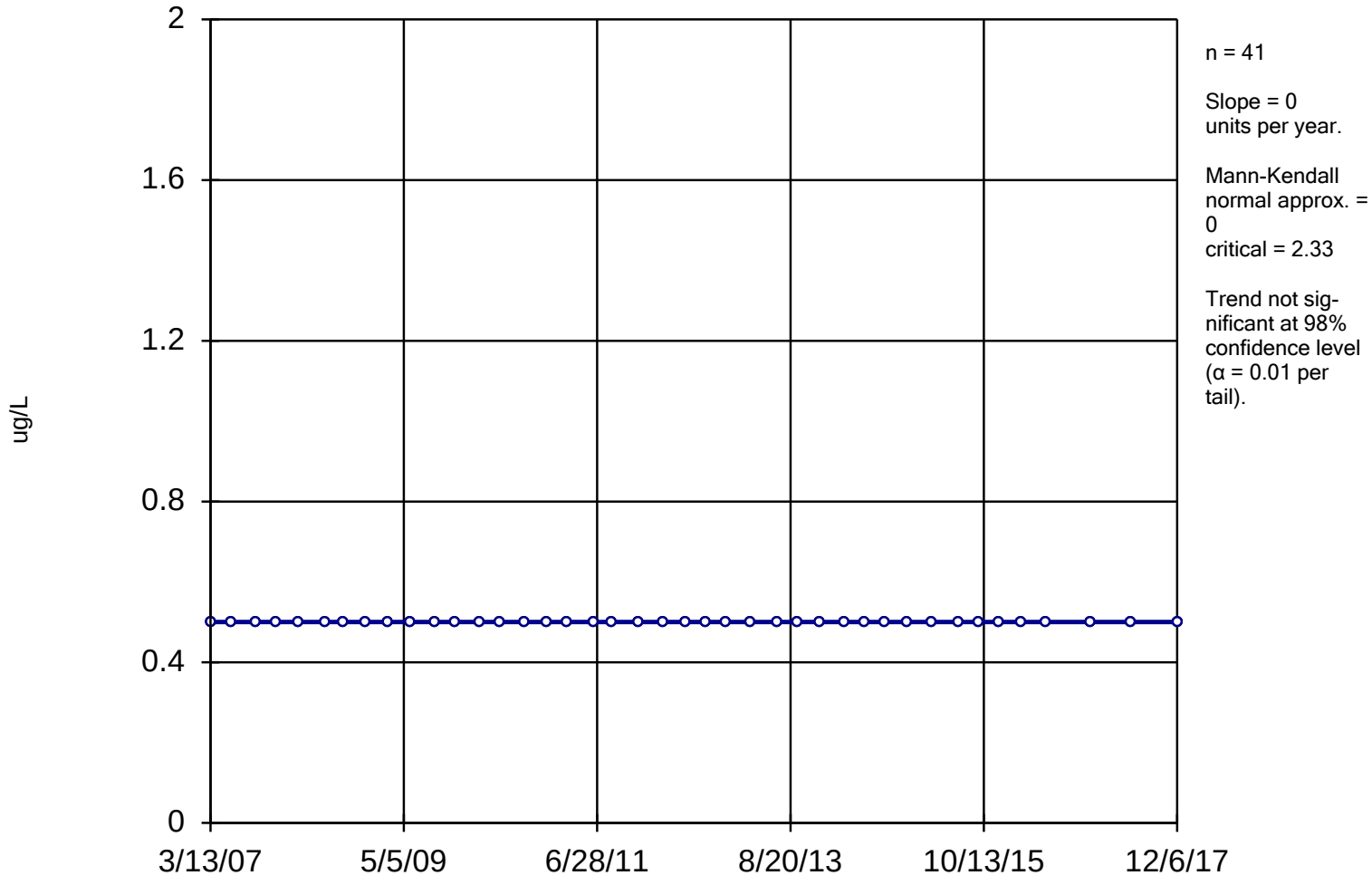
Sen's Slope Estimator

B-8D



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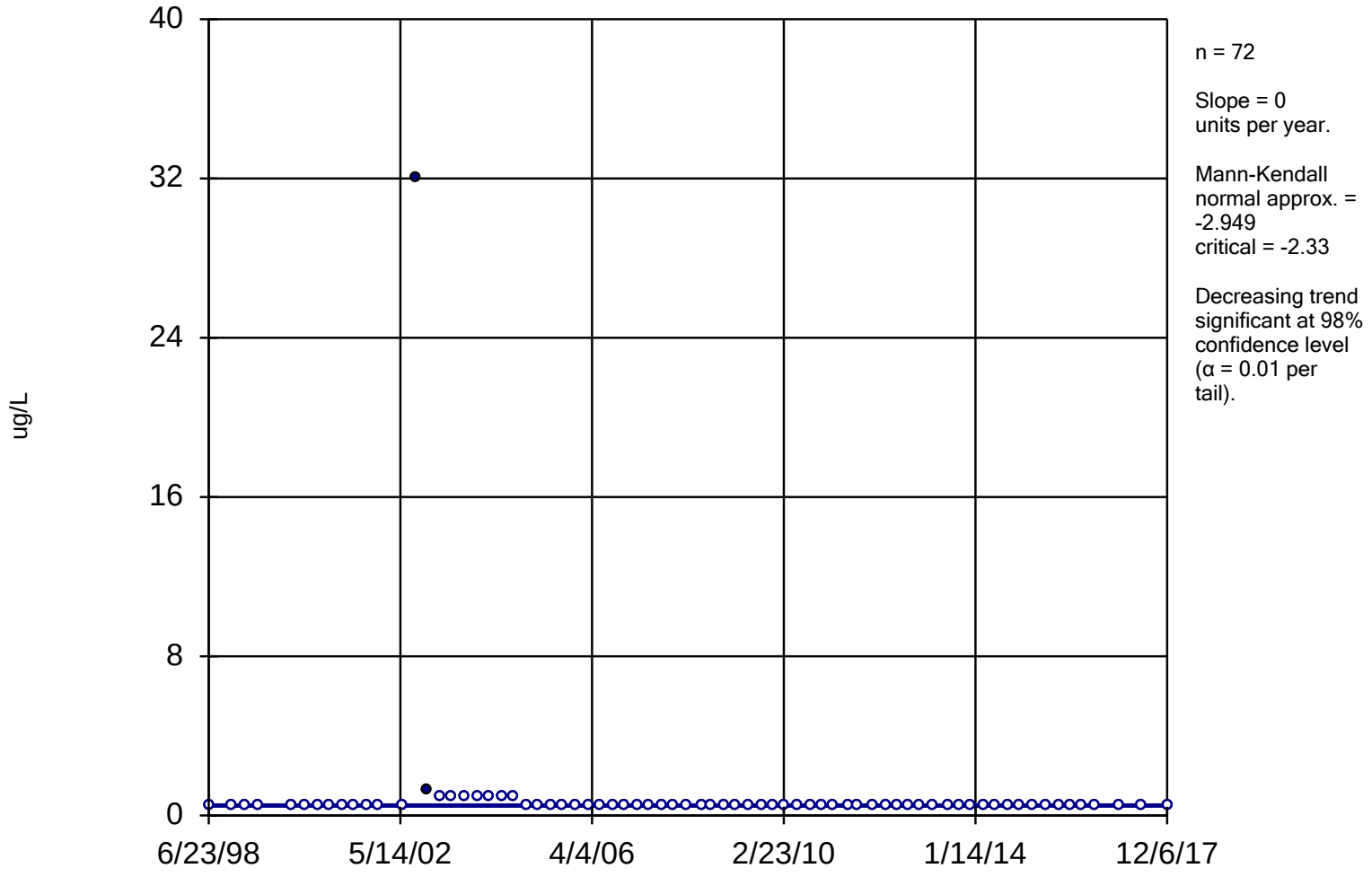
Sen's Slope Estimator

B-8I



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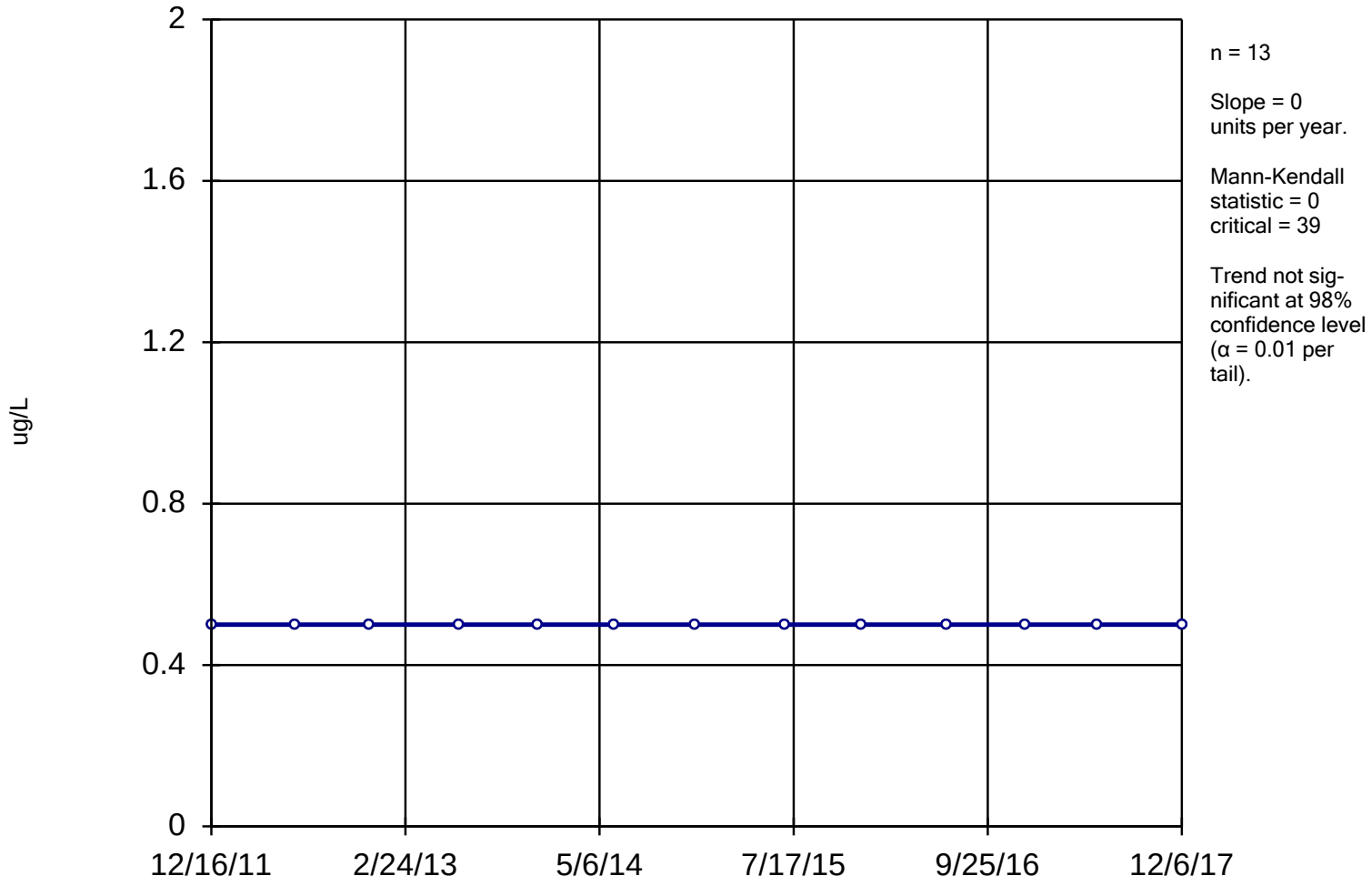
Sen's Slope Estimator

B-8S



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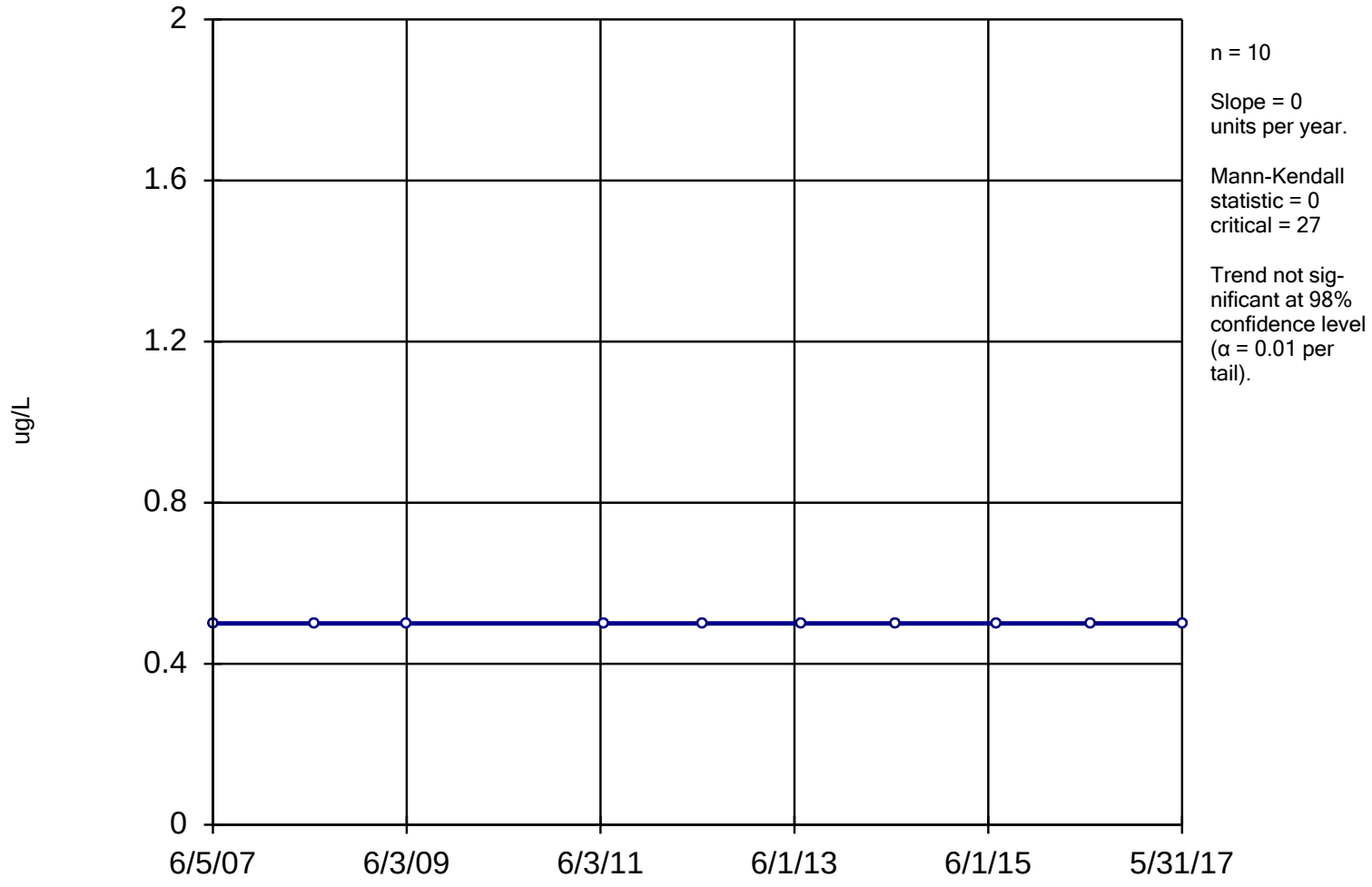
Sen's Slope Estimator

B-9D



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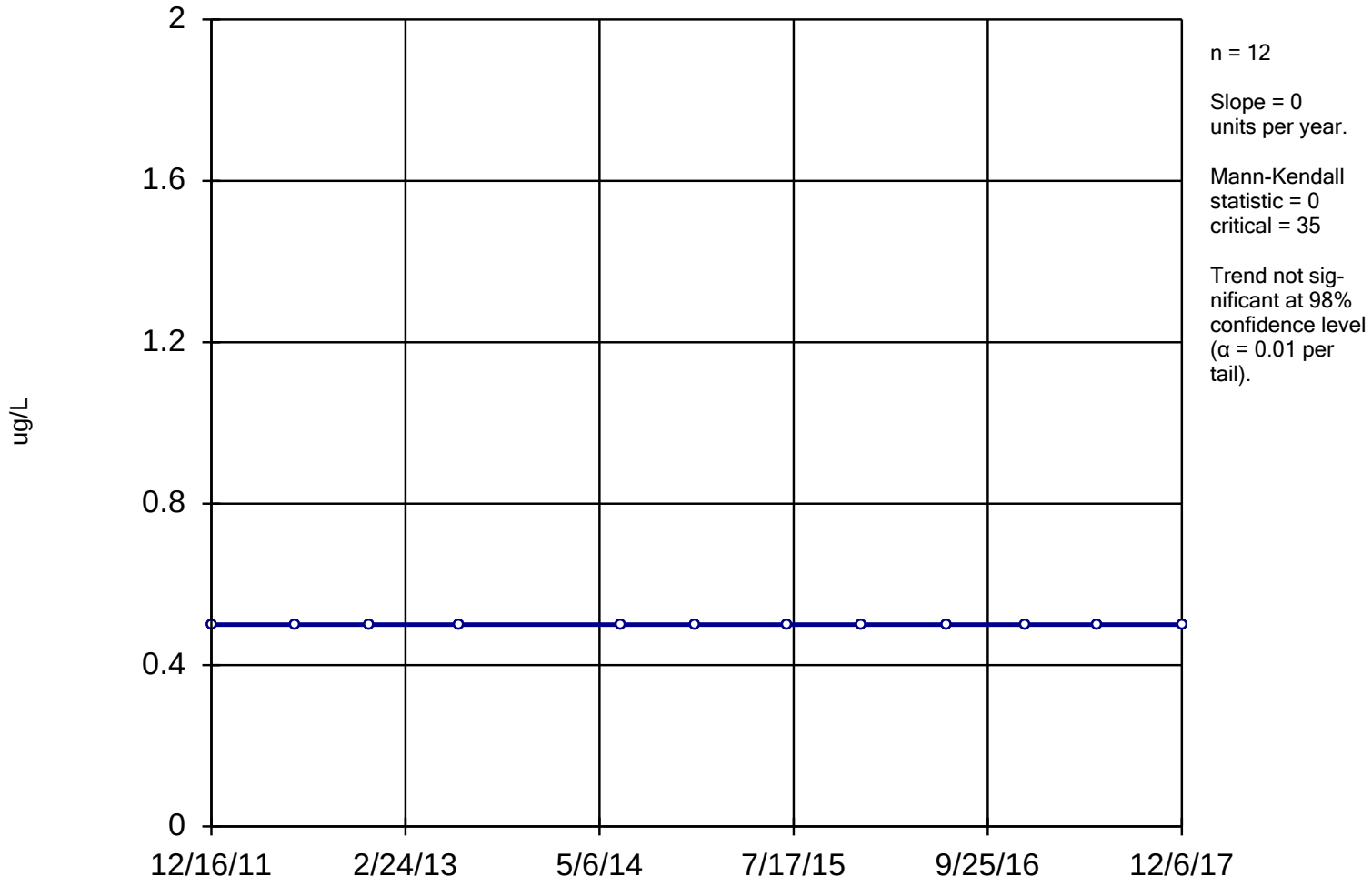
Sen's Slope Estimator

B-9S



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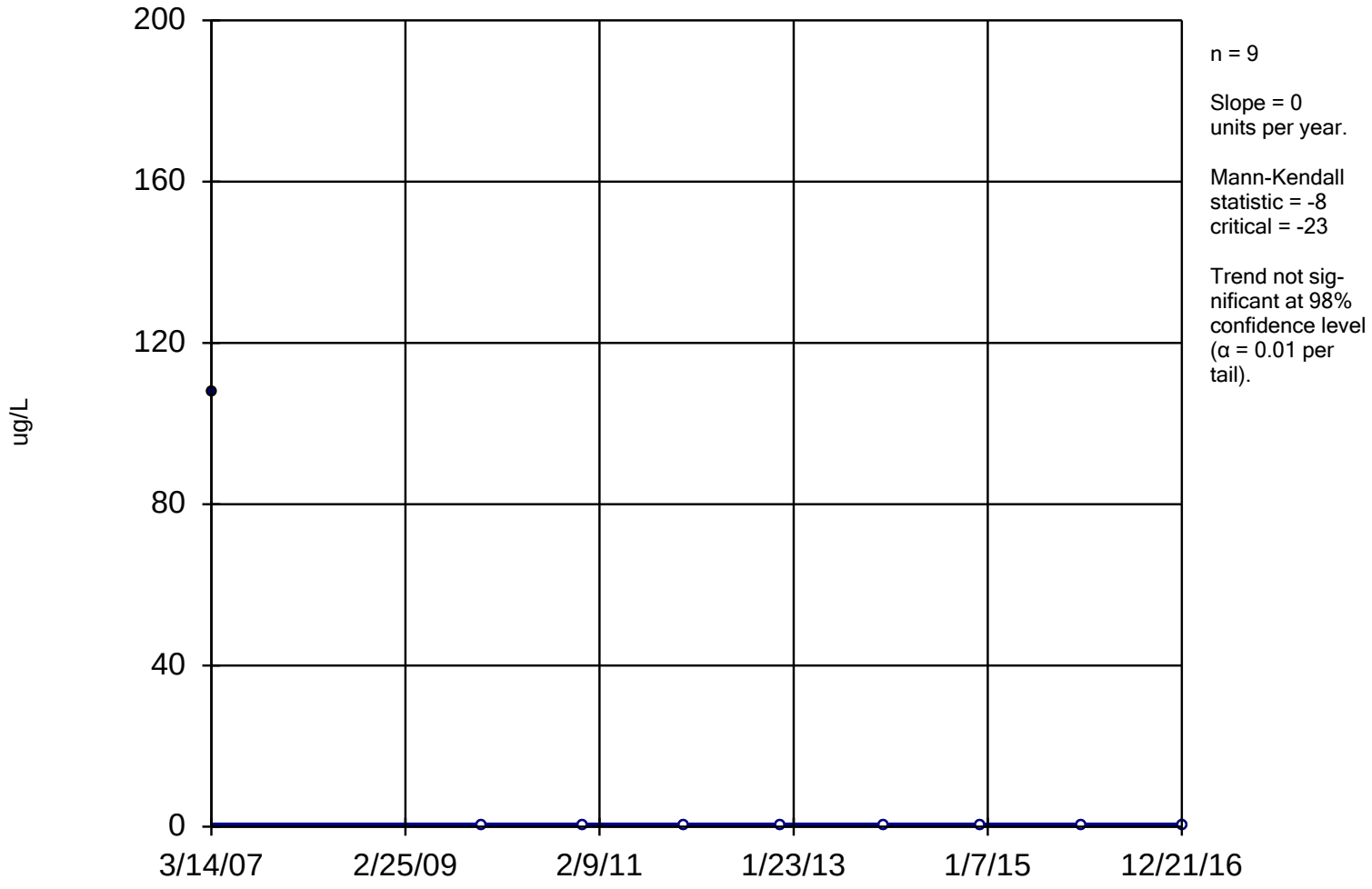
Sen's Slope Estimator

B-10S



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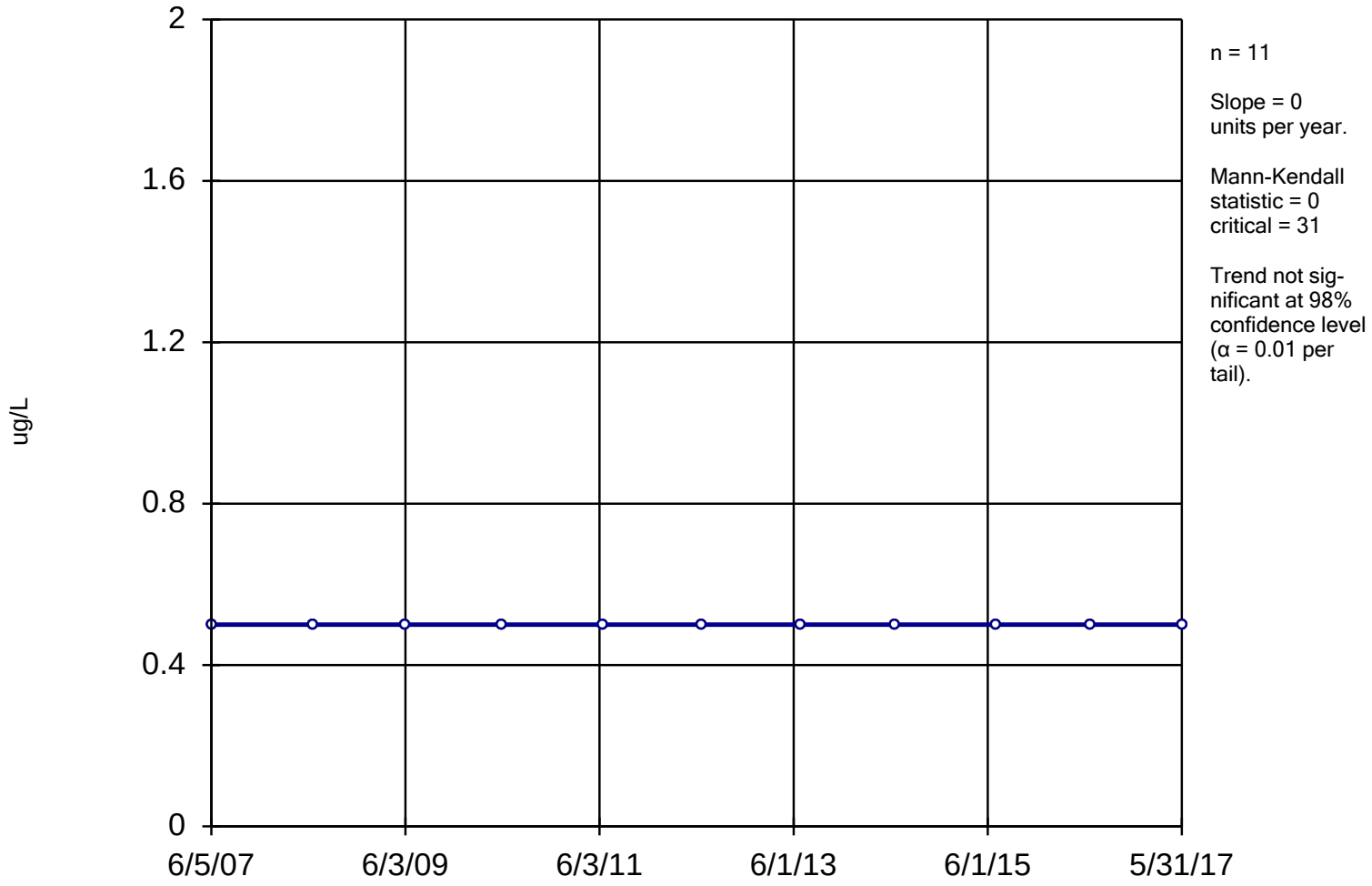
Sen's Slope Estimator

B-11D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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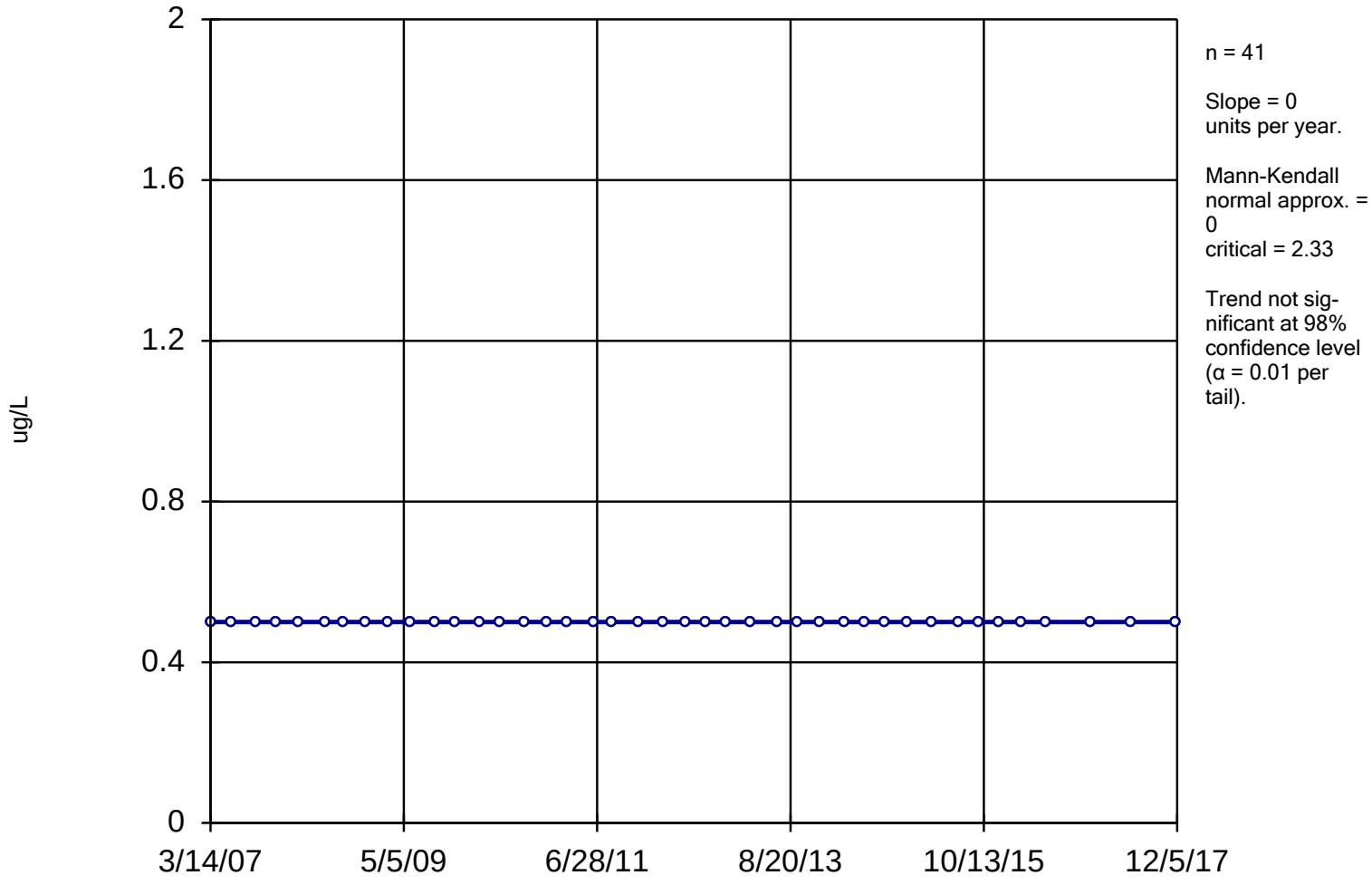
Sen's Slope Estimator

B-13D



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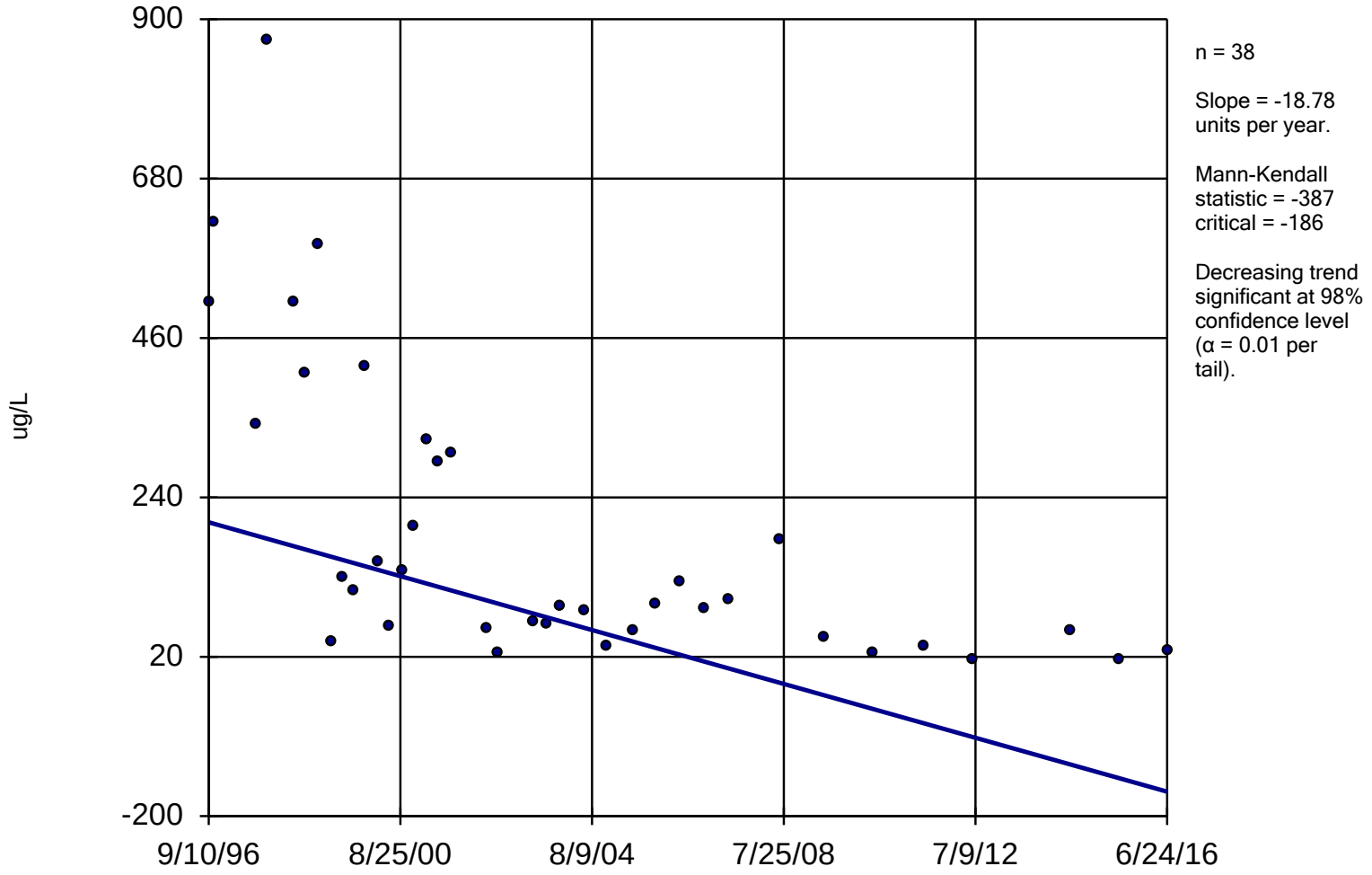
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

B-15



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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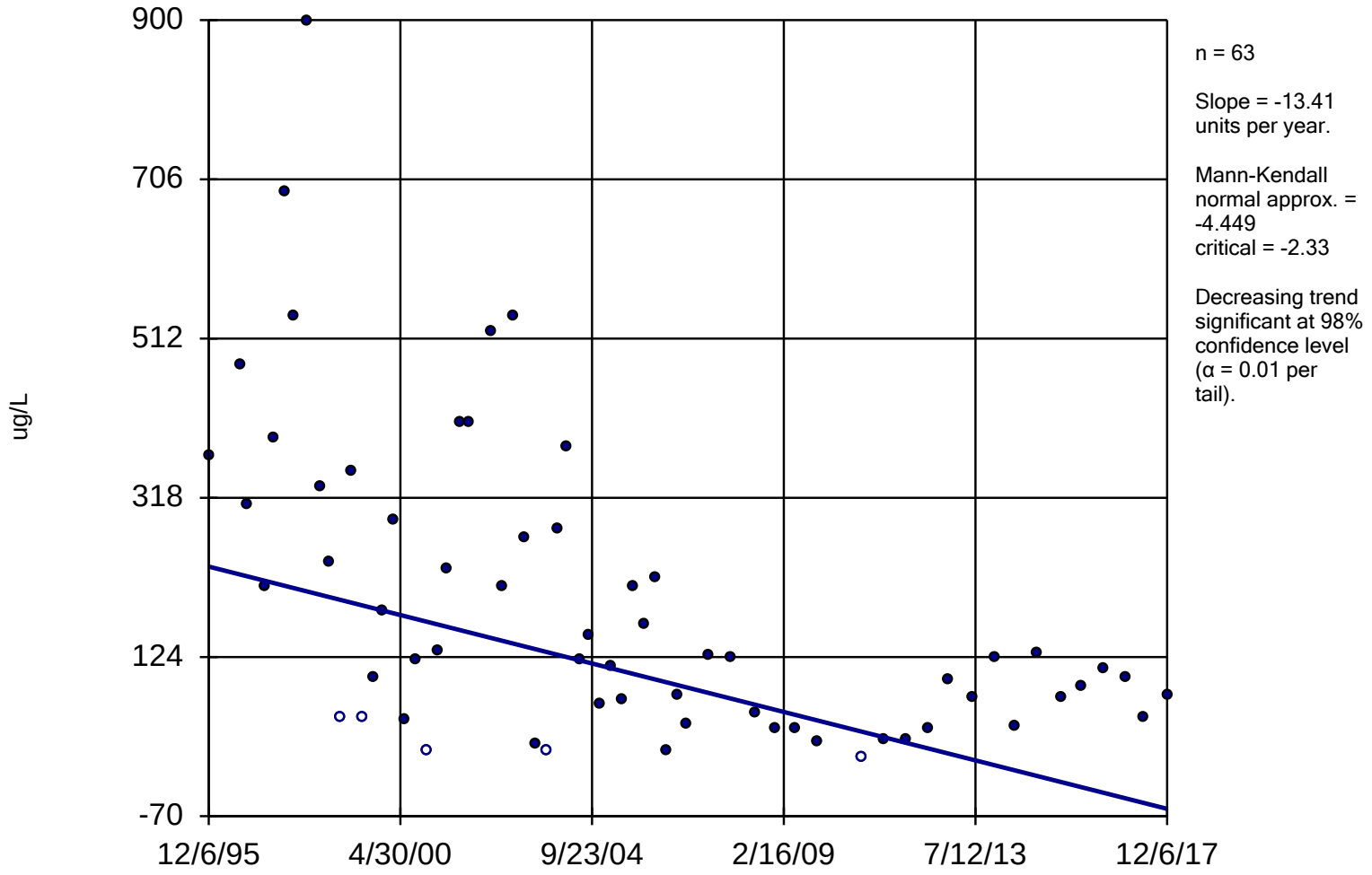
Sen's Slope Estimator

B-16



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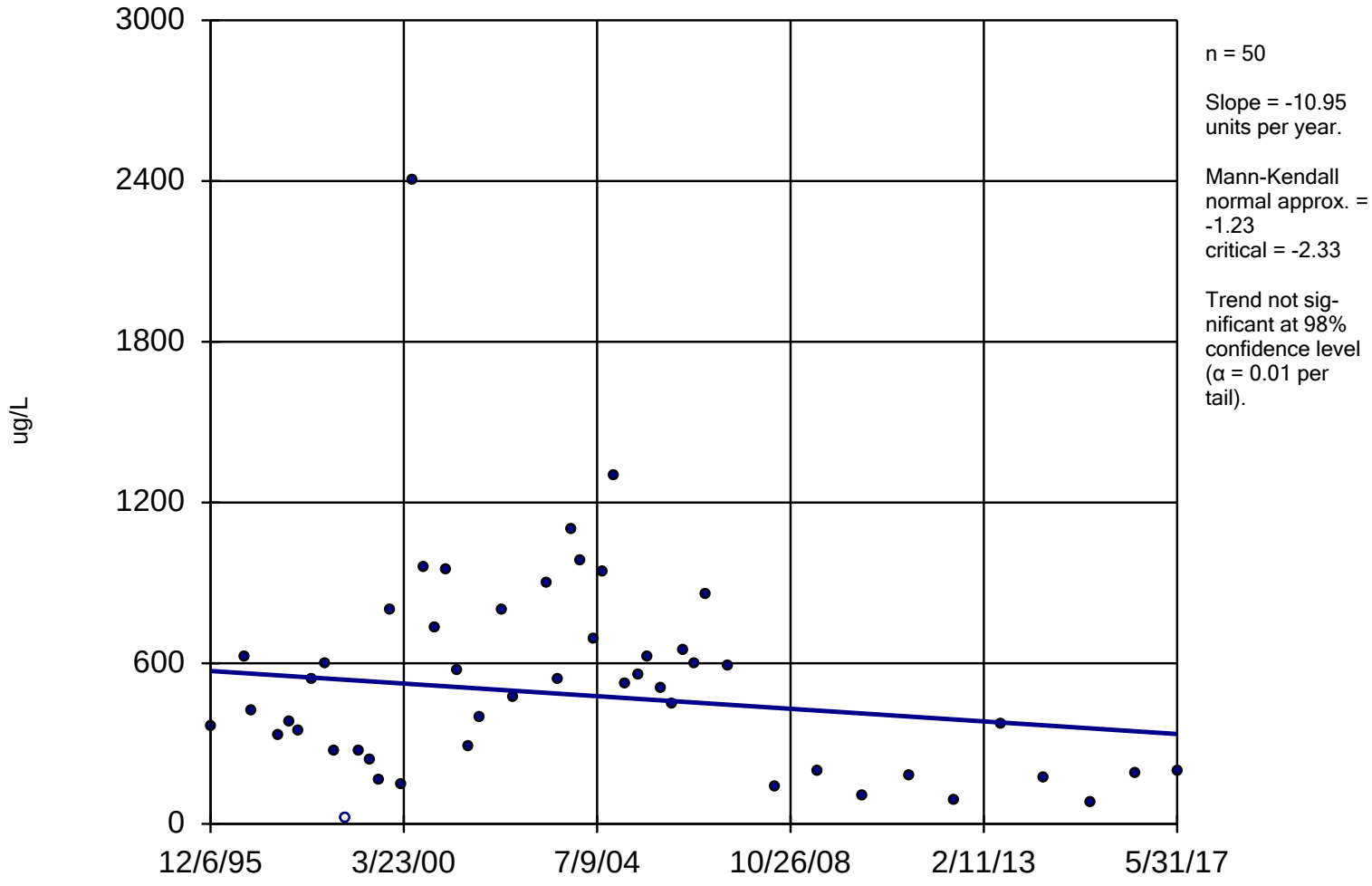
Sen's Slope Estimator

B-17



Constituent: 1,2-DCE Analysis Run 12/28/2018 10:47 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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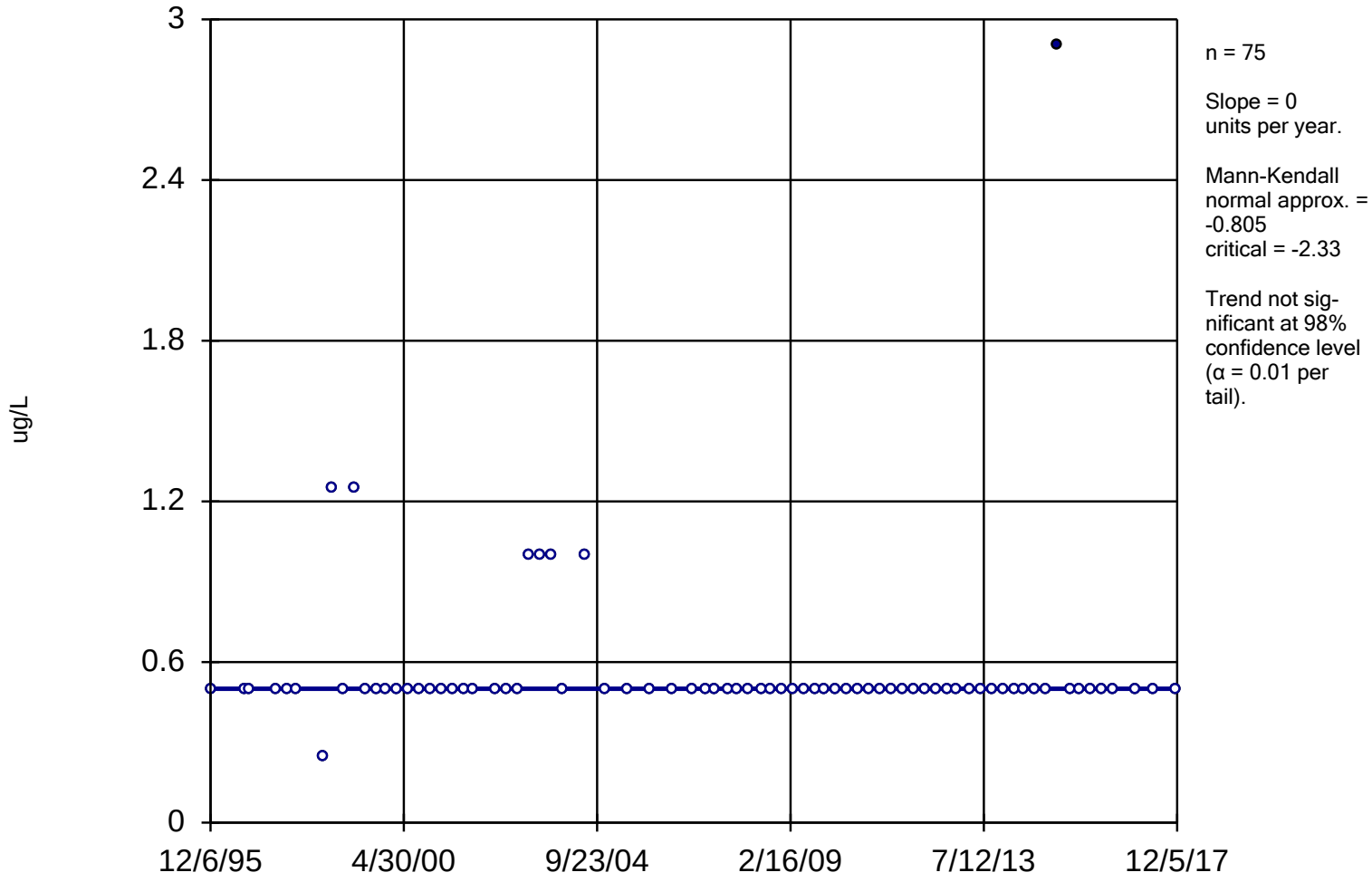
Sen's Slope Estimator

B-18



Constituent: 1,2-DCE Analysis Run 12/28/2018 10:47 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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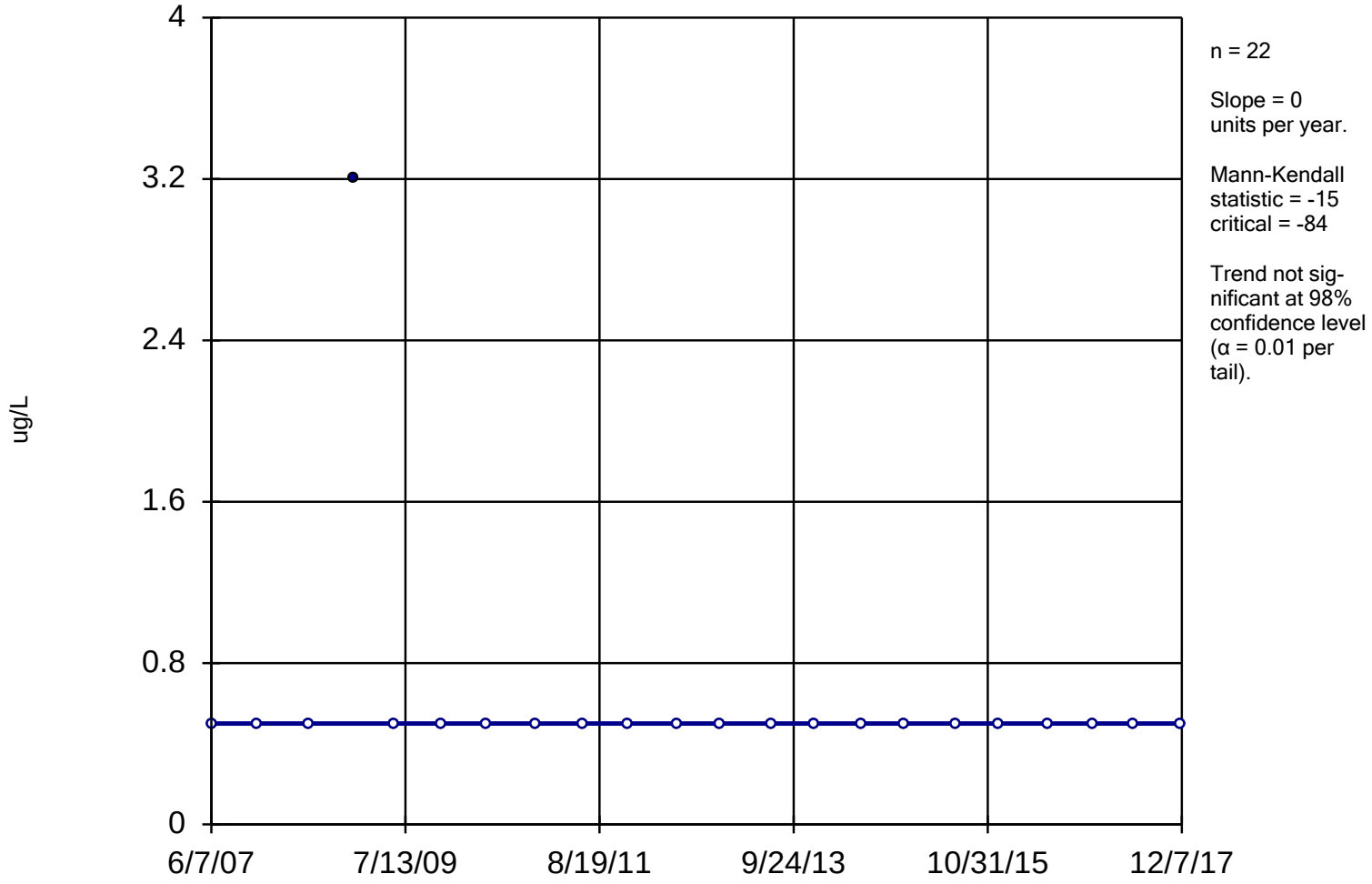
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-23I/D



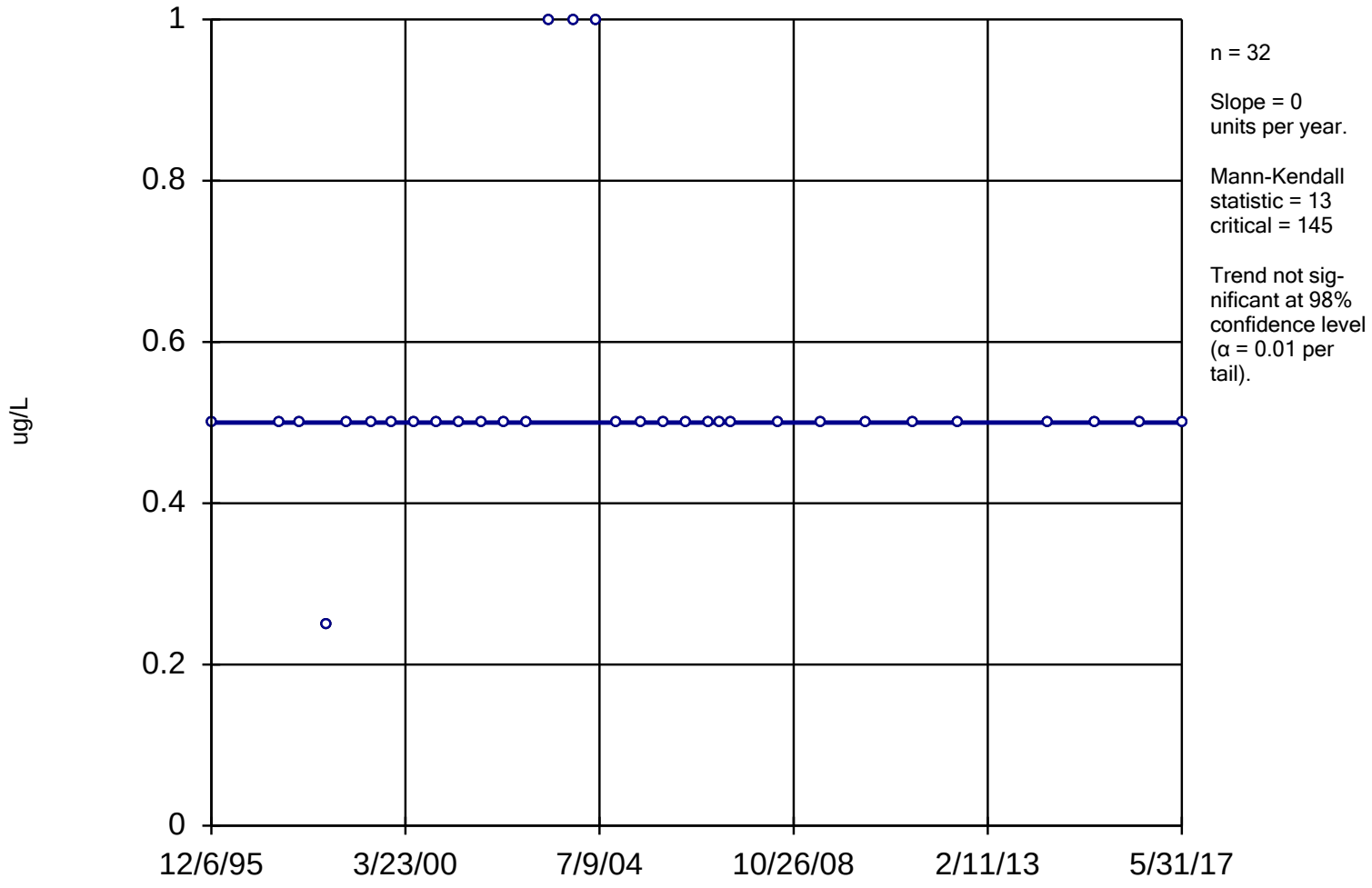
Constituent: 1,2-DCE Analysis Run 12/28/2018 10:47 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-24D



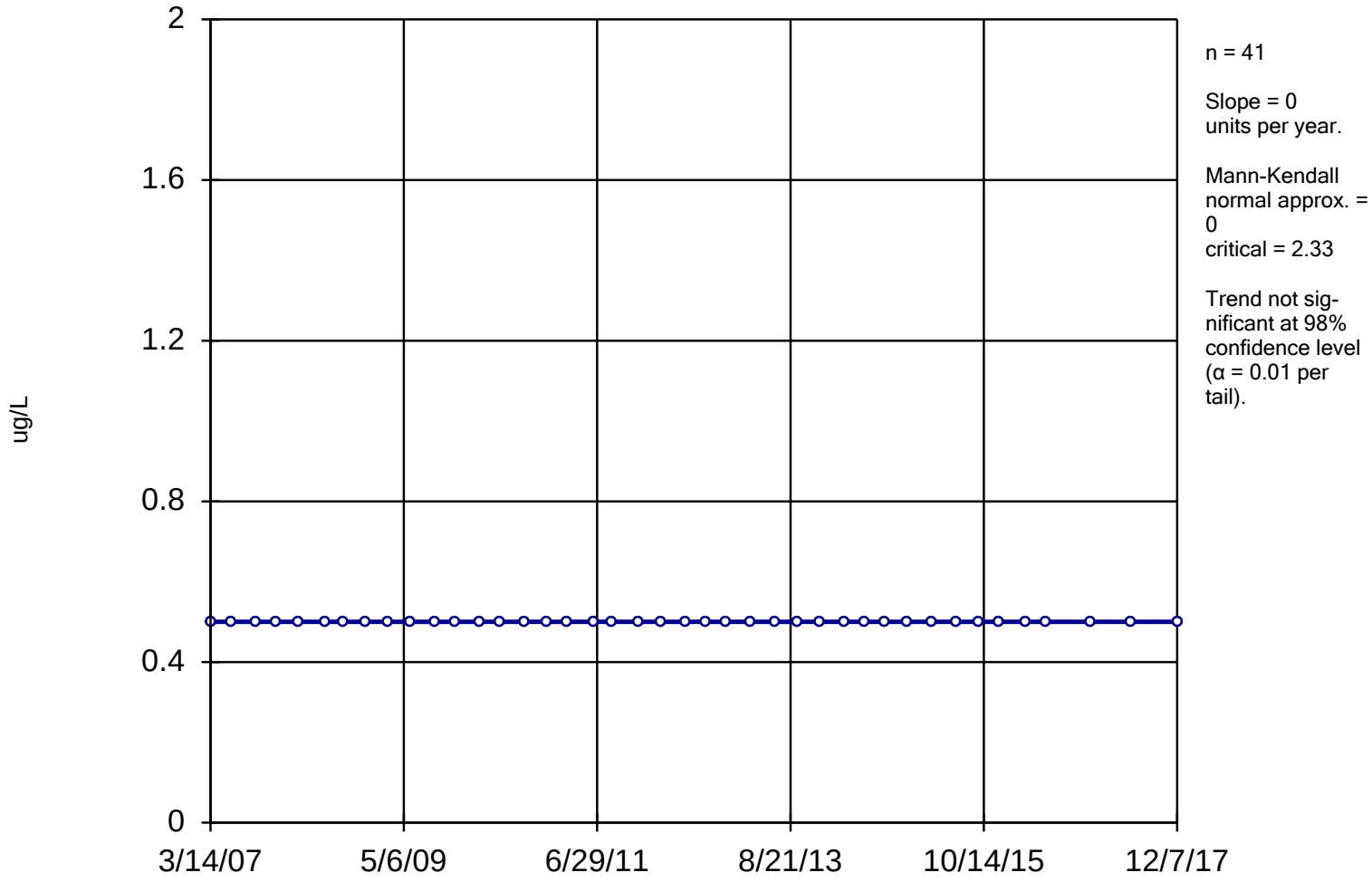
Constituent: 1,2-DCE Analysis Run 12/28/2018 10:47 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-1D



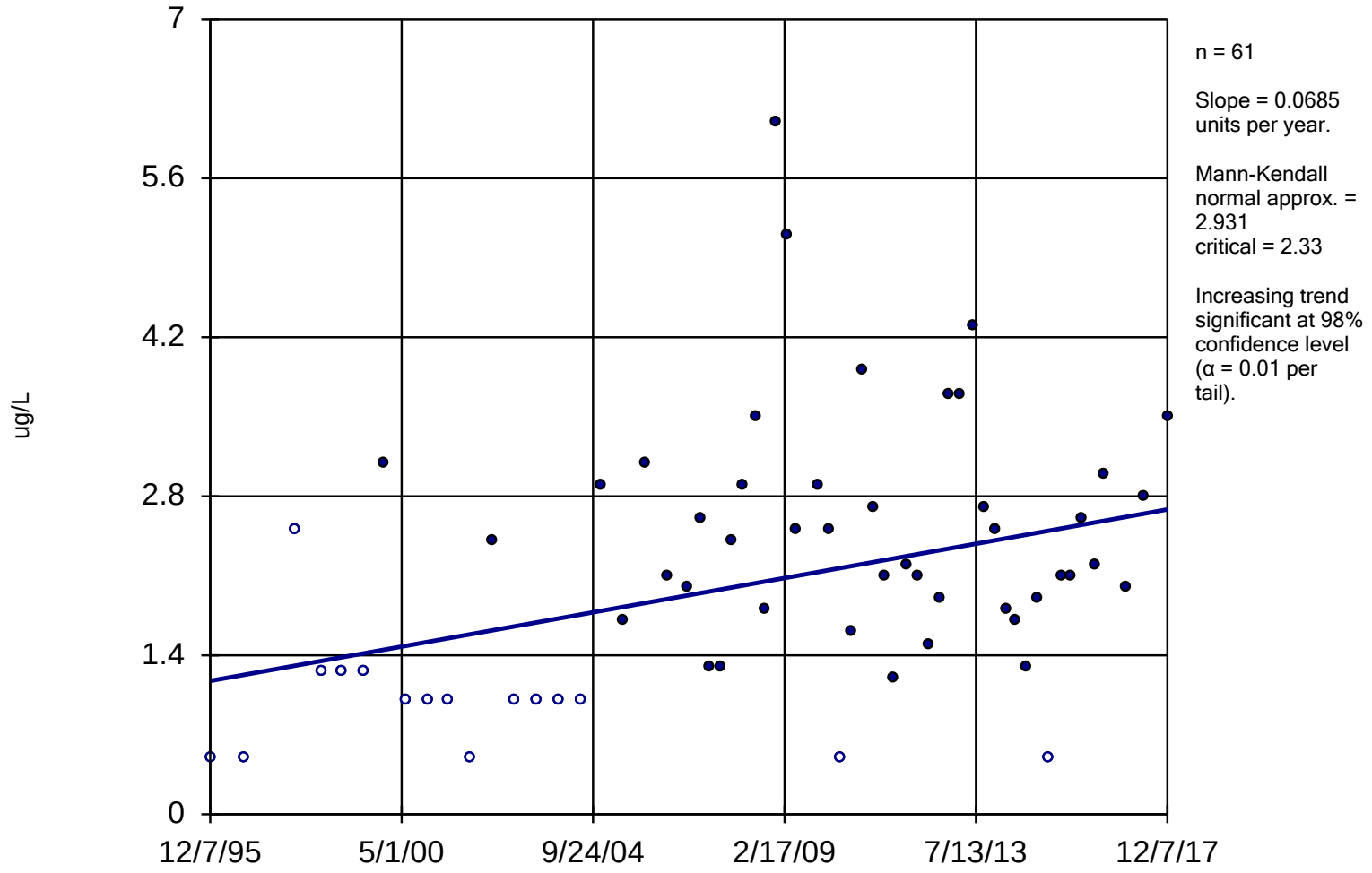
Constituent: 1,2-DCE Analysis Run 12/28/2018 10:47 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-1I



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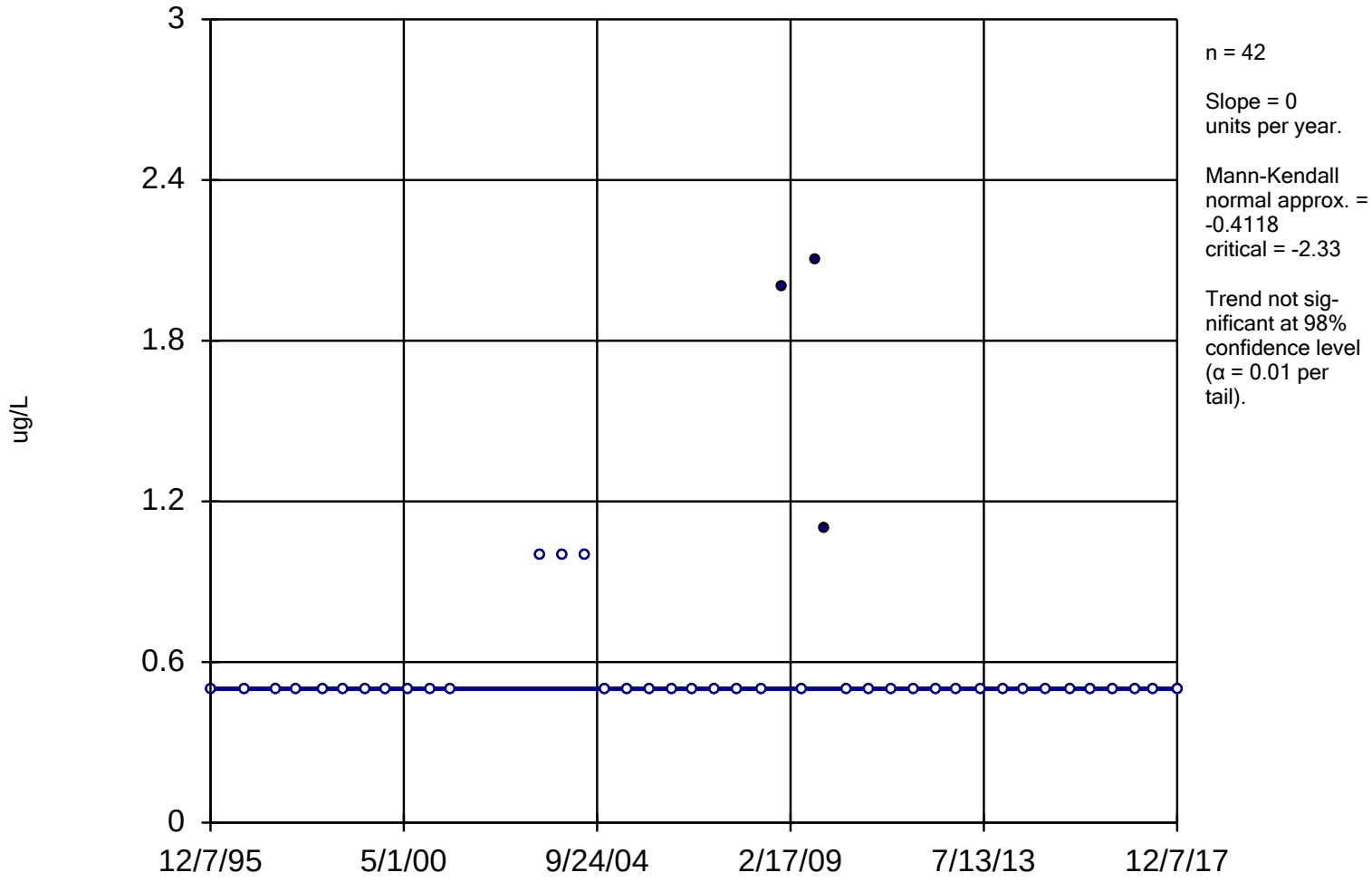
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-1S



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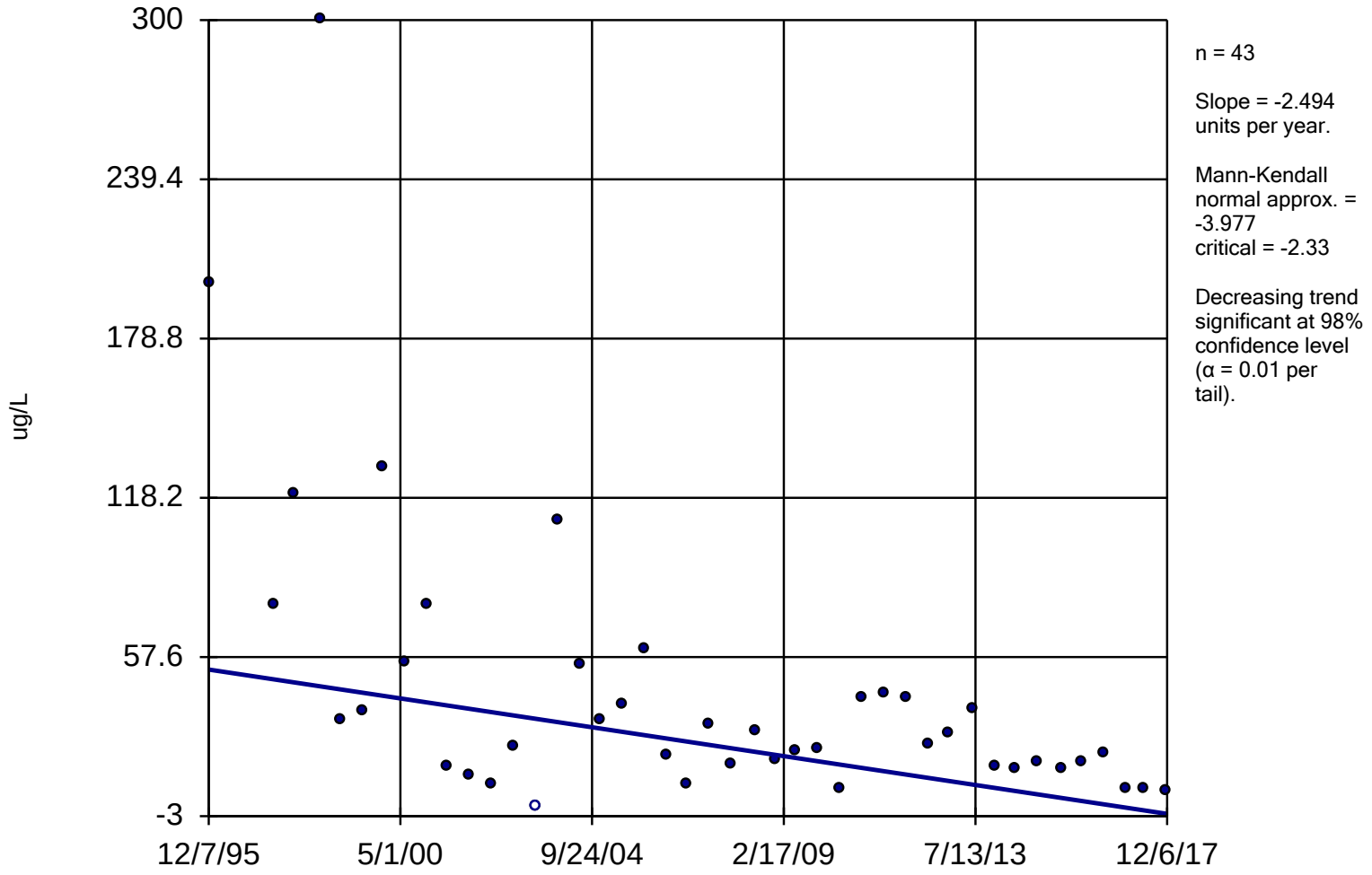
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-2D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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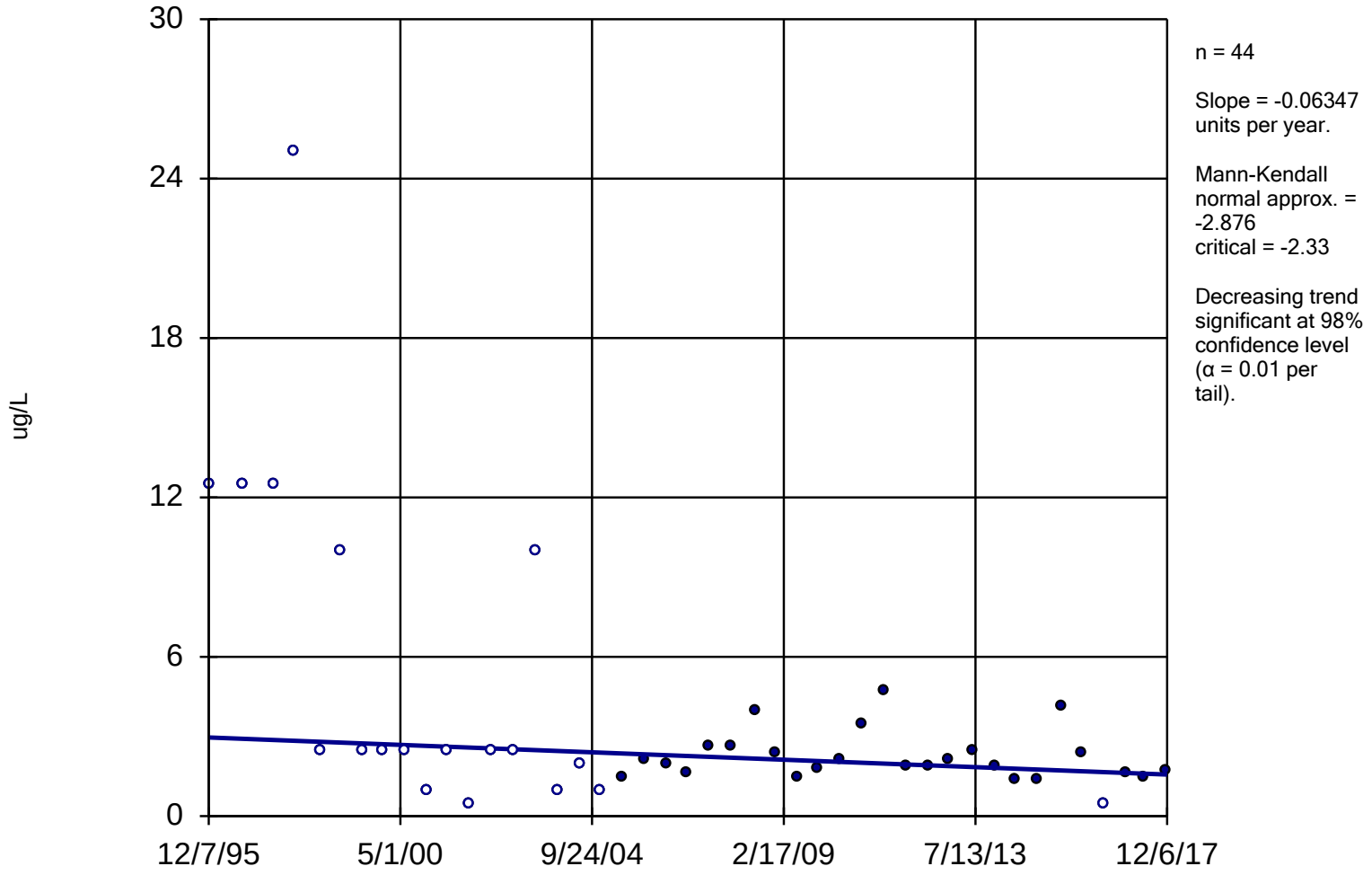
Sen's Slope Estimator

C-2I



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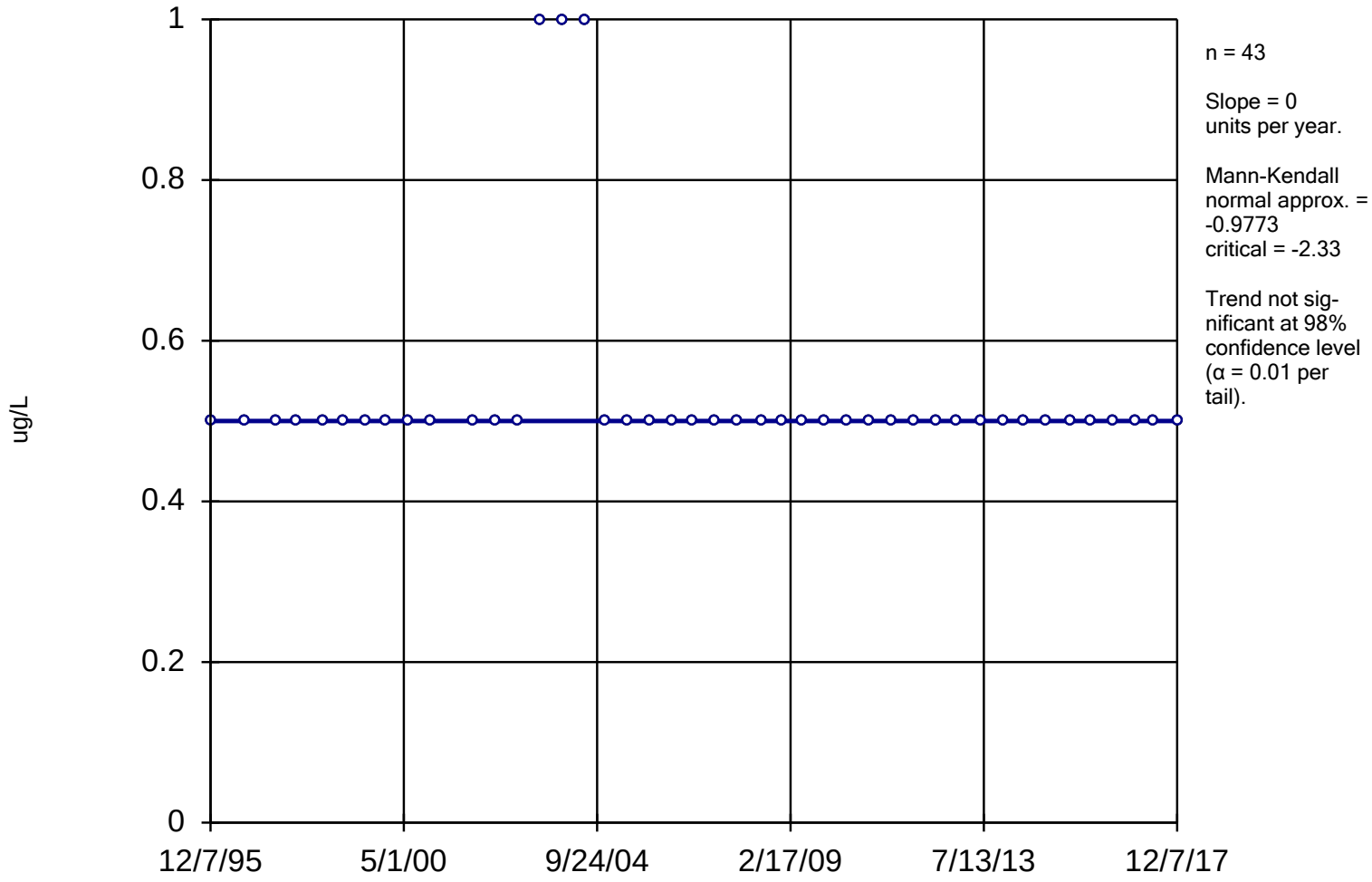
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-2S



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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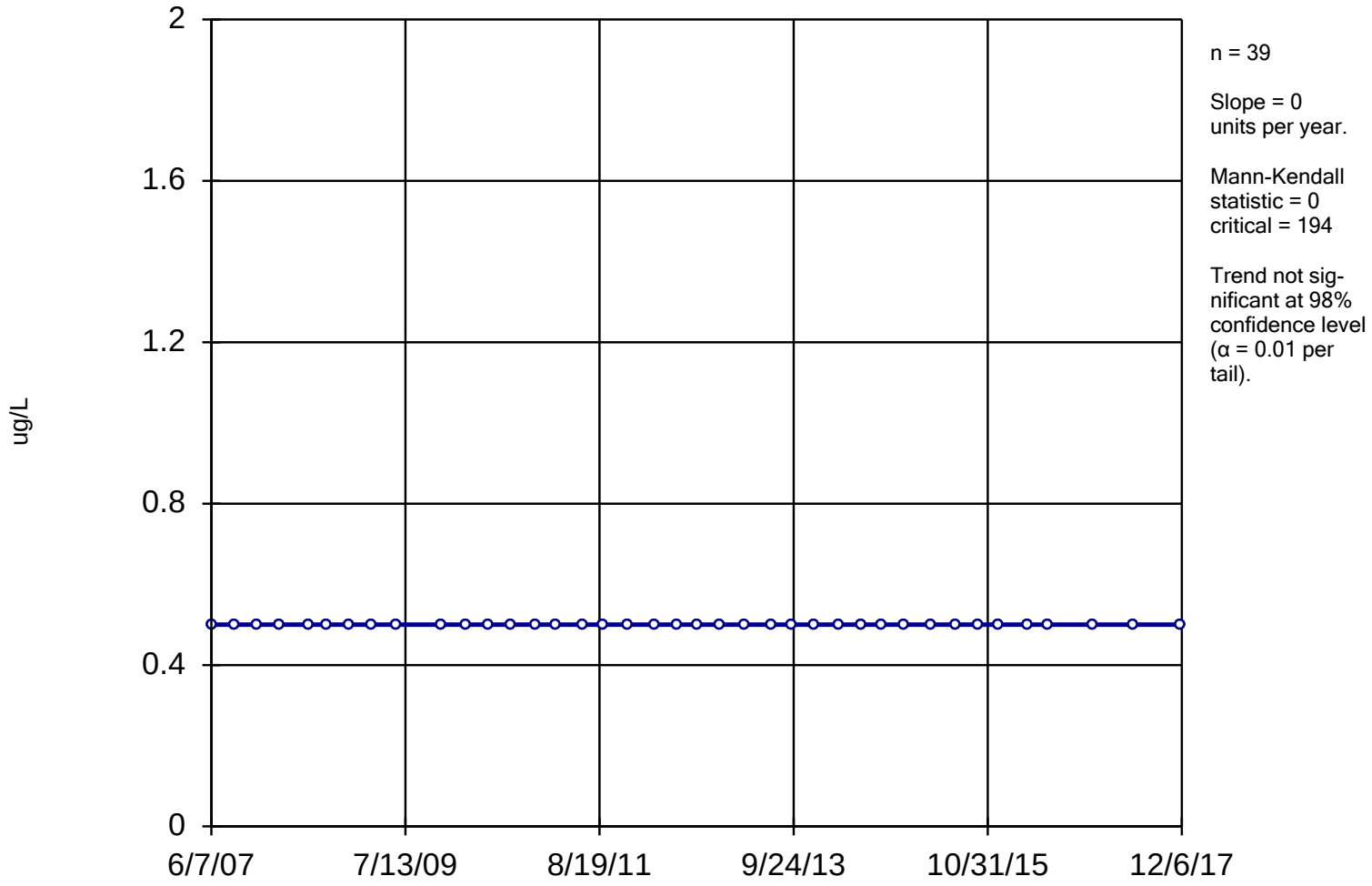
Sen's Slope Estimator

C-3D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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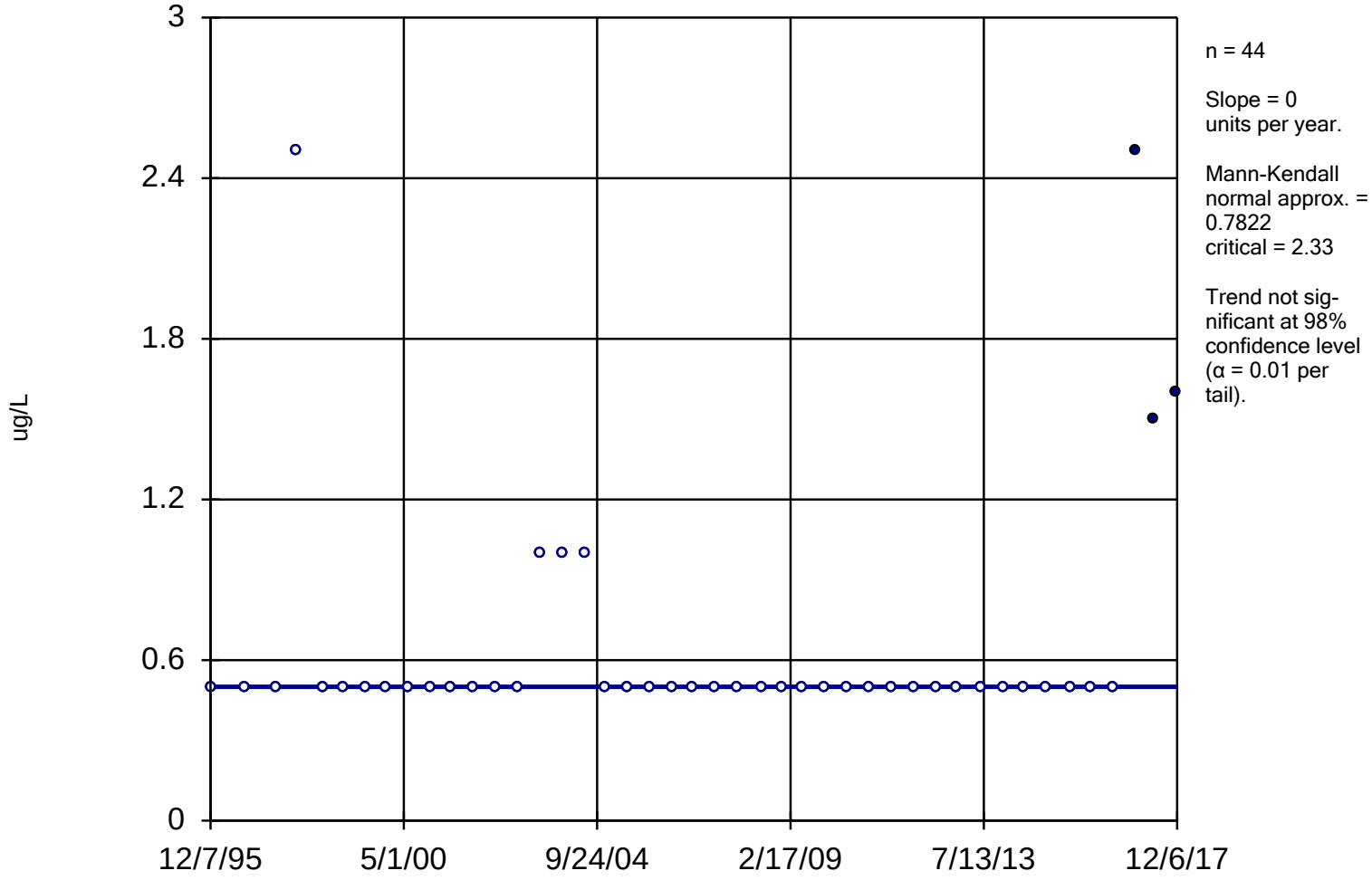
Sen's Slope Estimator

C-3I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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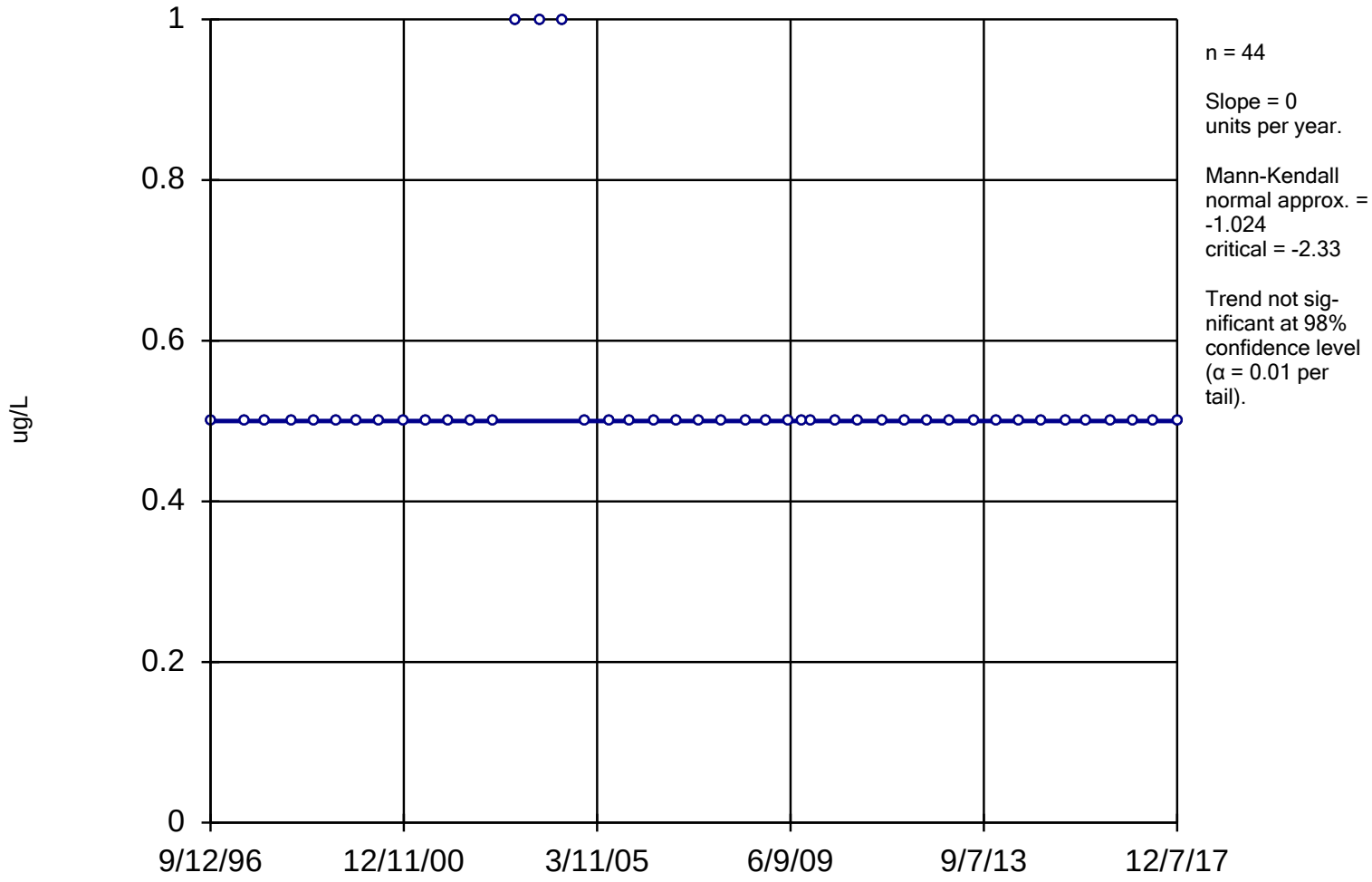
Sen's Slope Estimator

C-3S



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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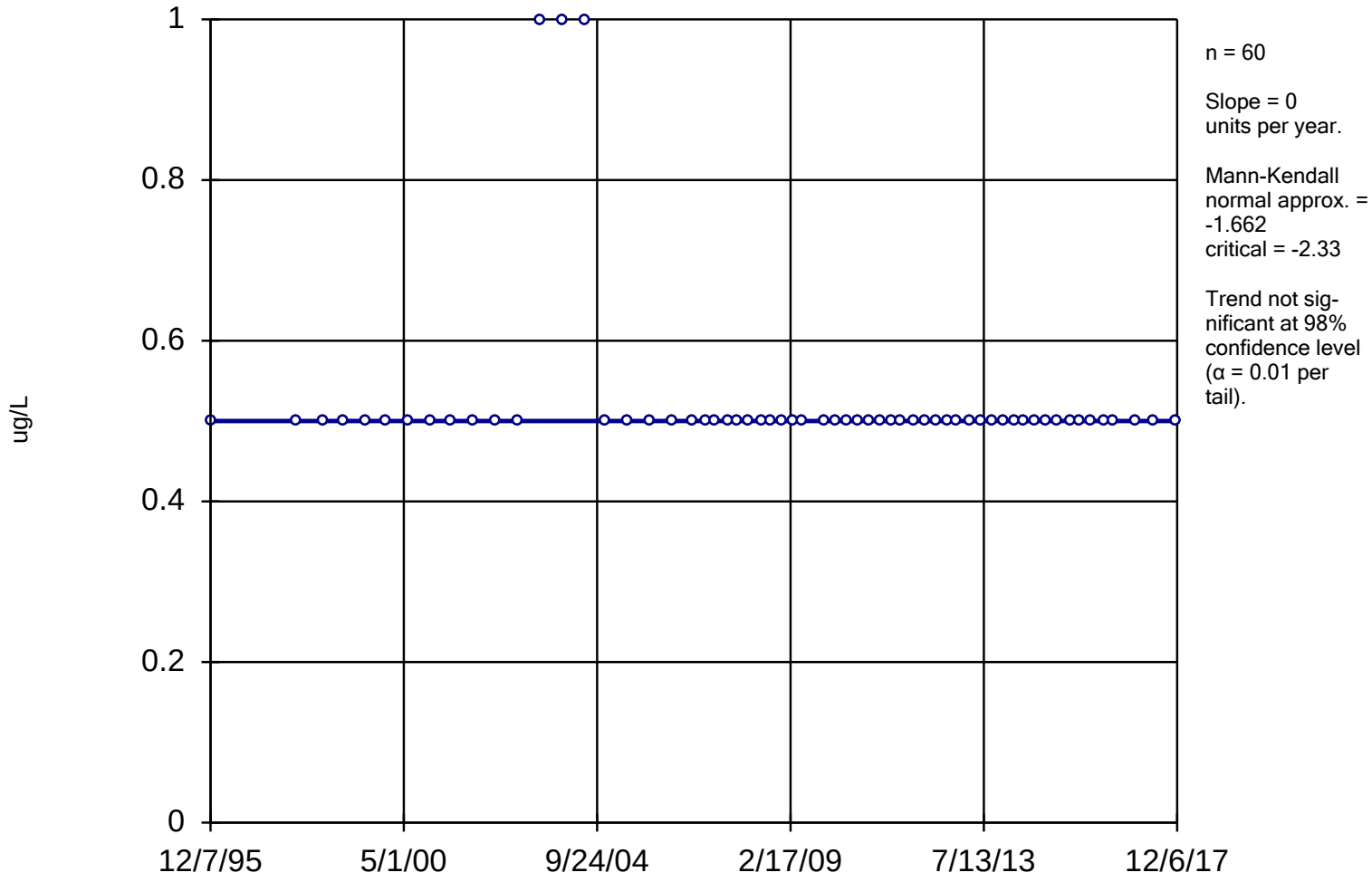
Sen's Slope Estimator

C-6



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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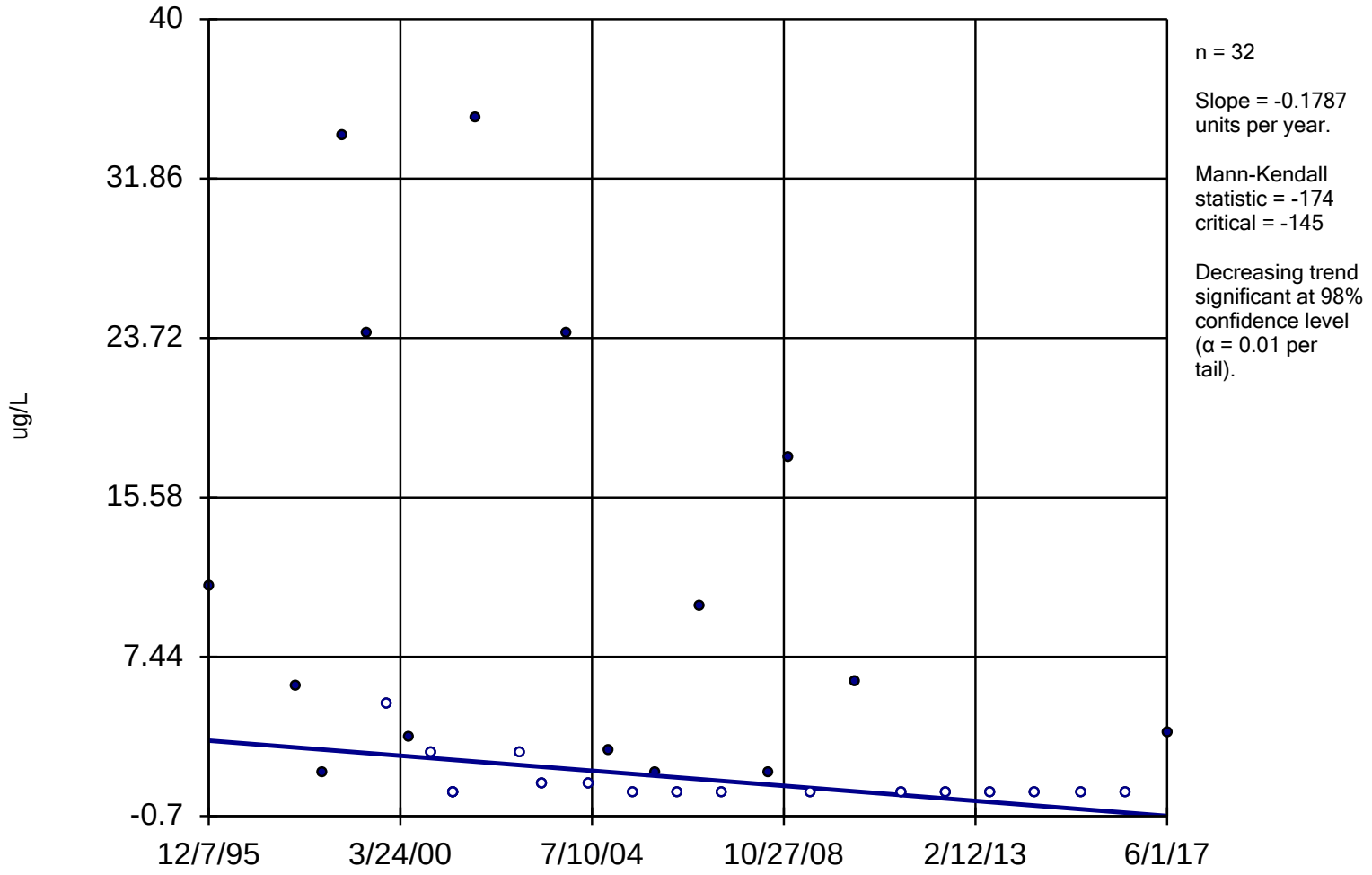
Sen's Slope Estimator

C-7



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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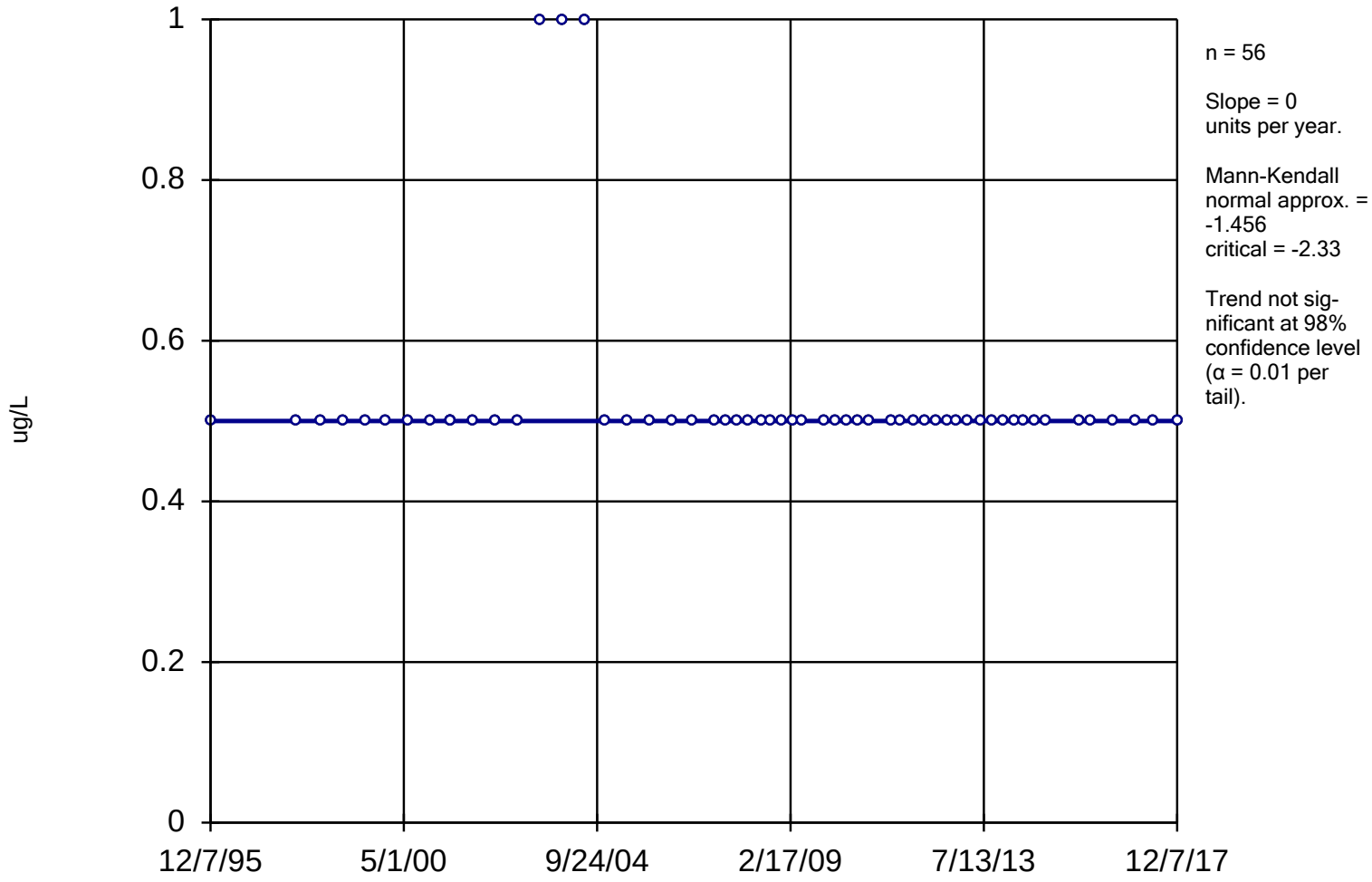
Sen's Slope Estimator

C-8



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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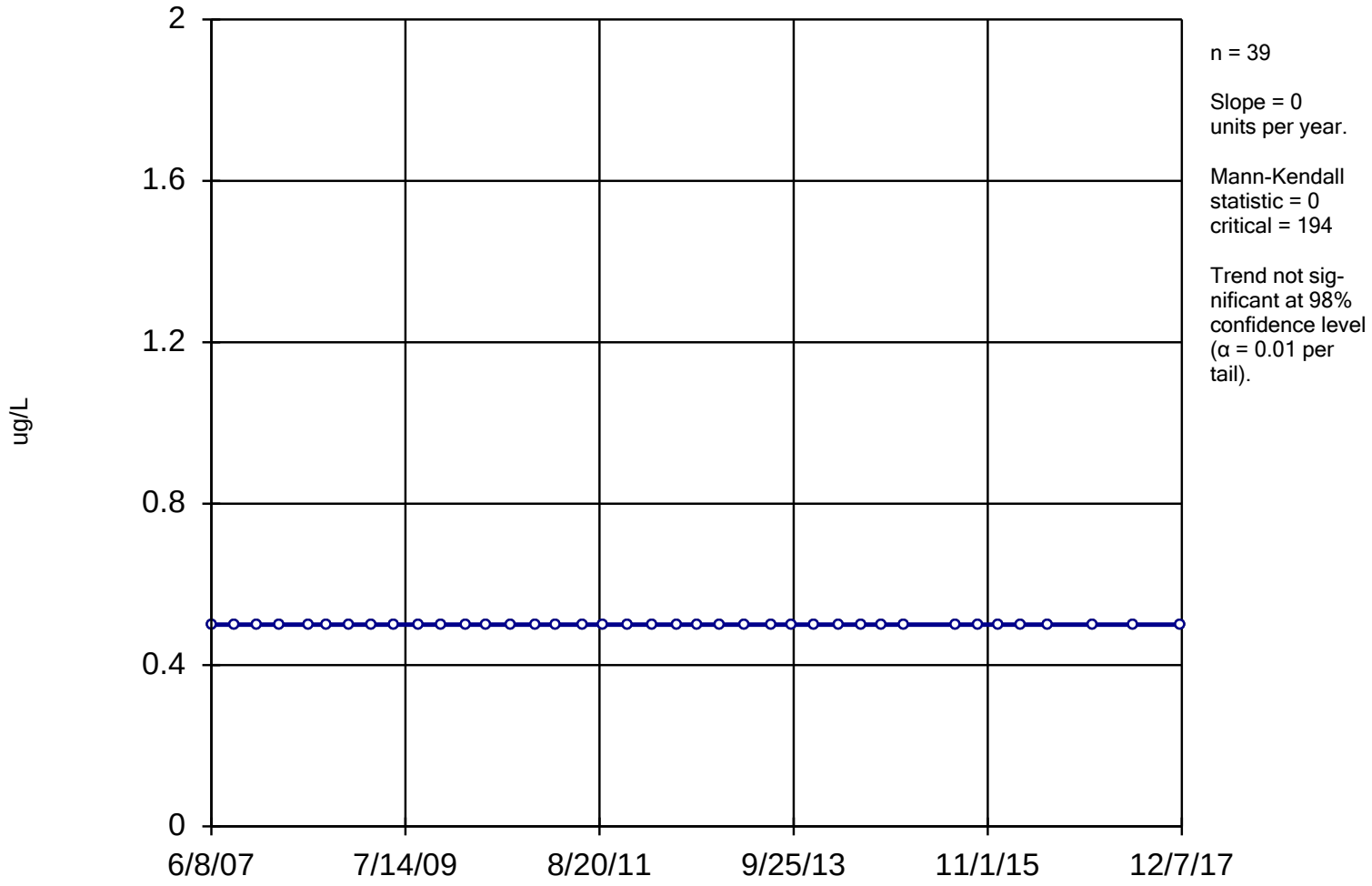
Sen's Slope Estimator

C-9



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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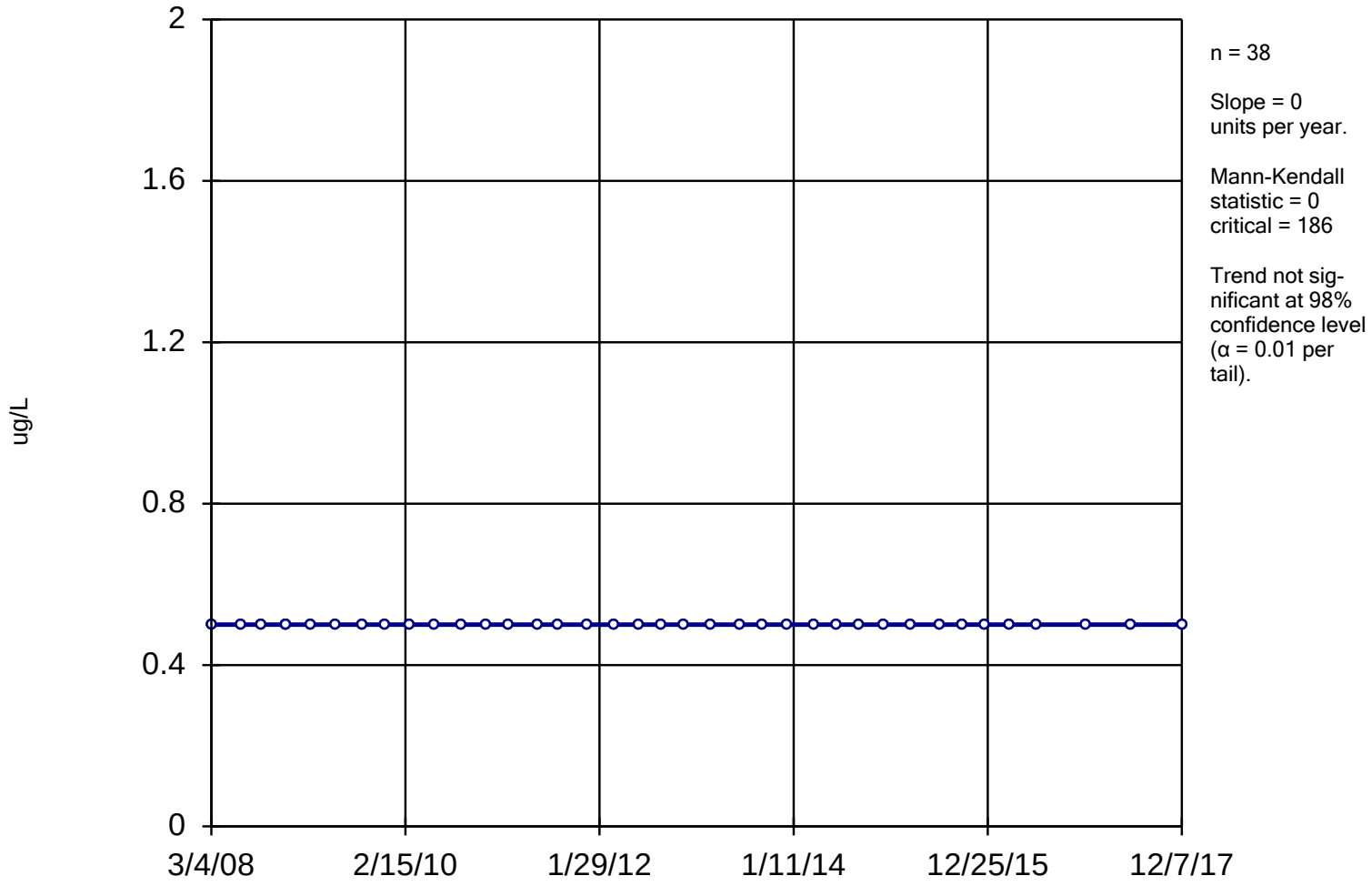
Sen's Slope Estimator

C-10D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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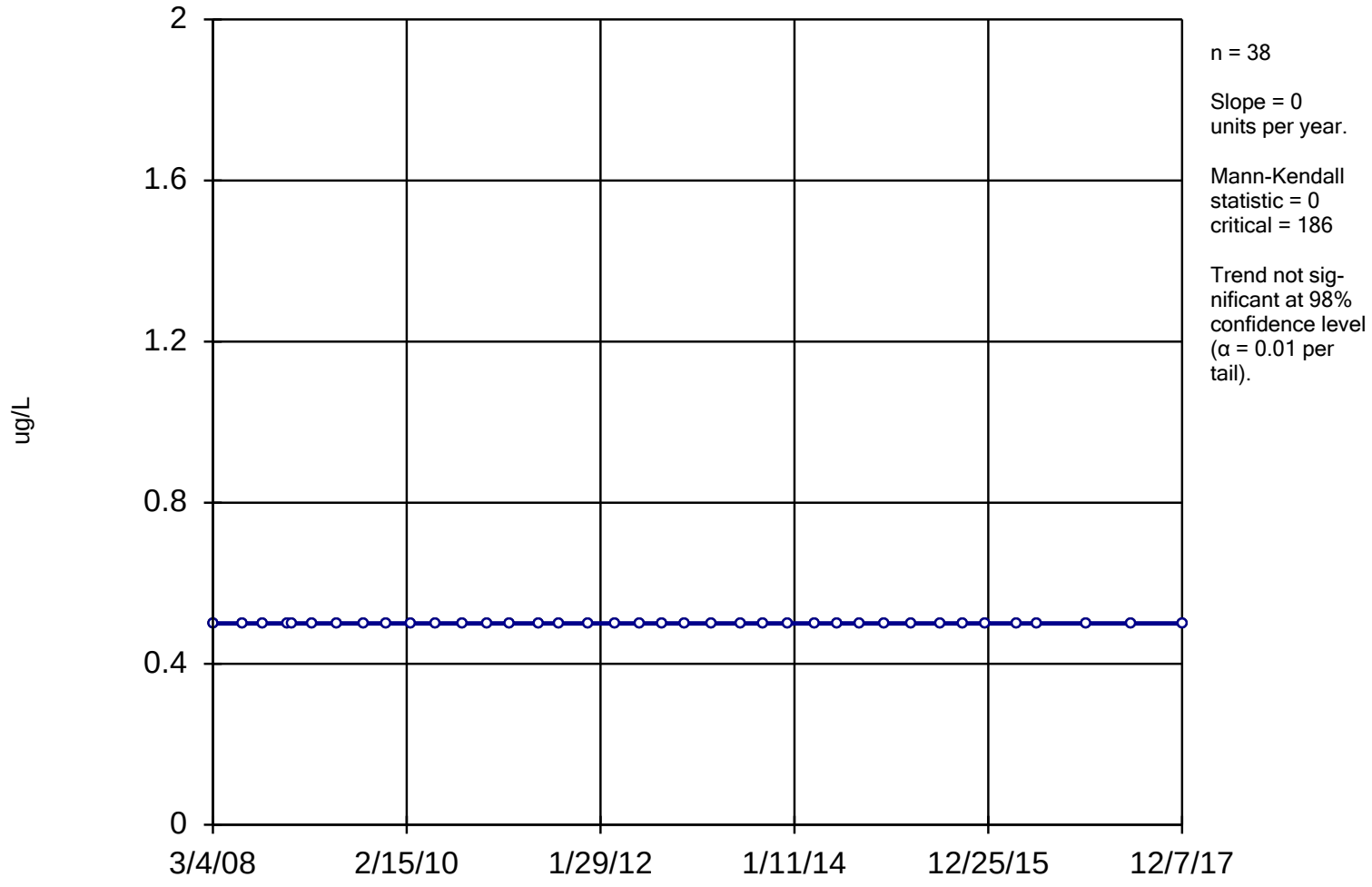
Sen's Slope Estimator

C-11I



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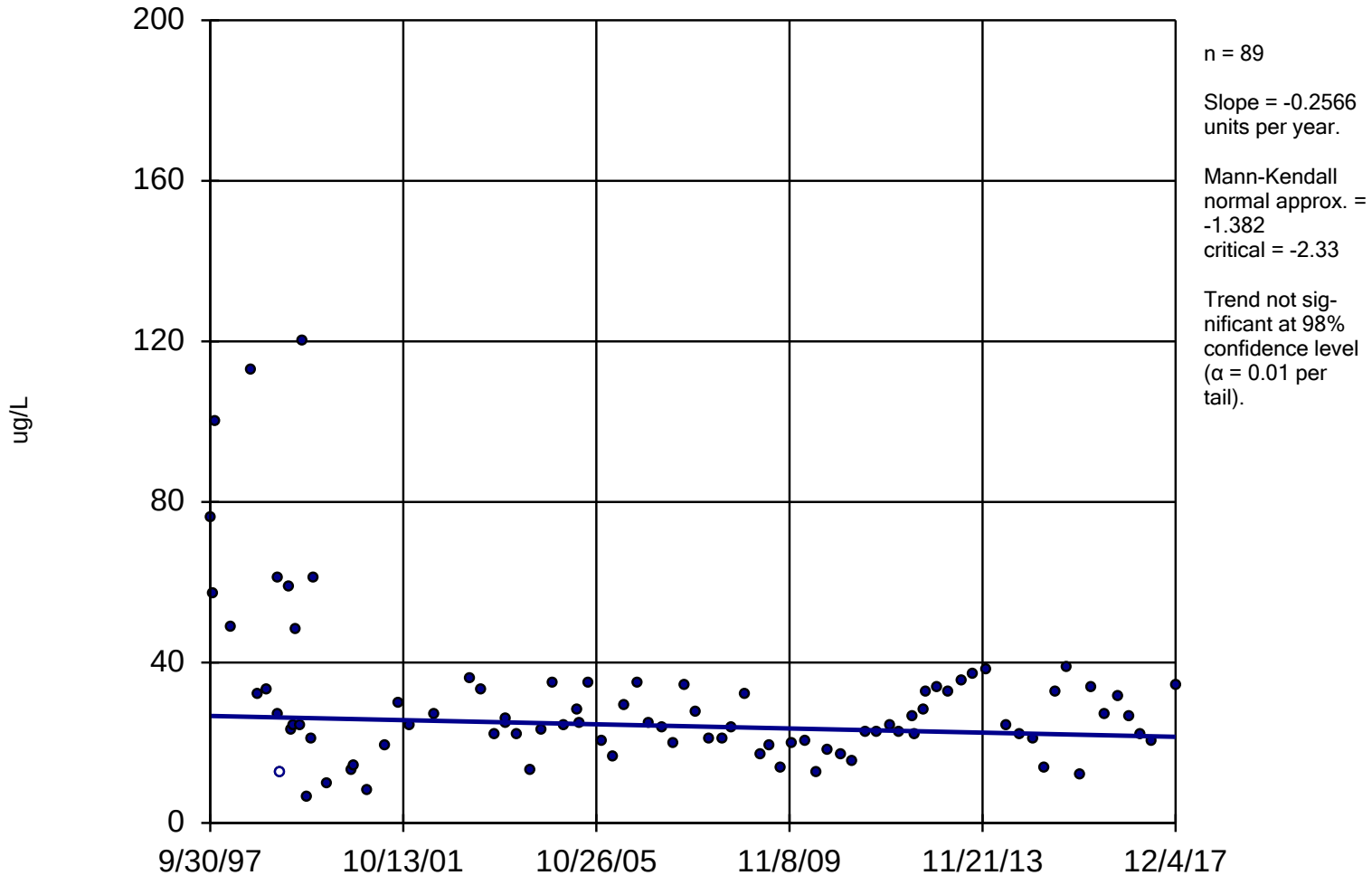
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

I-1



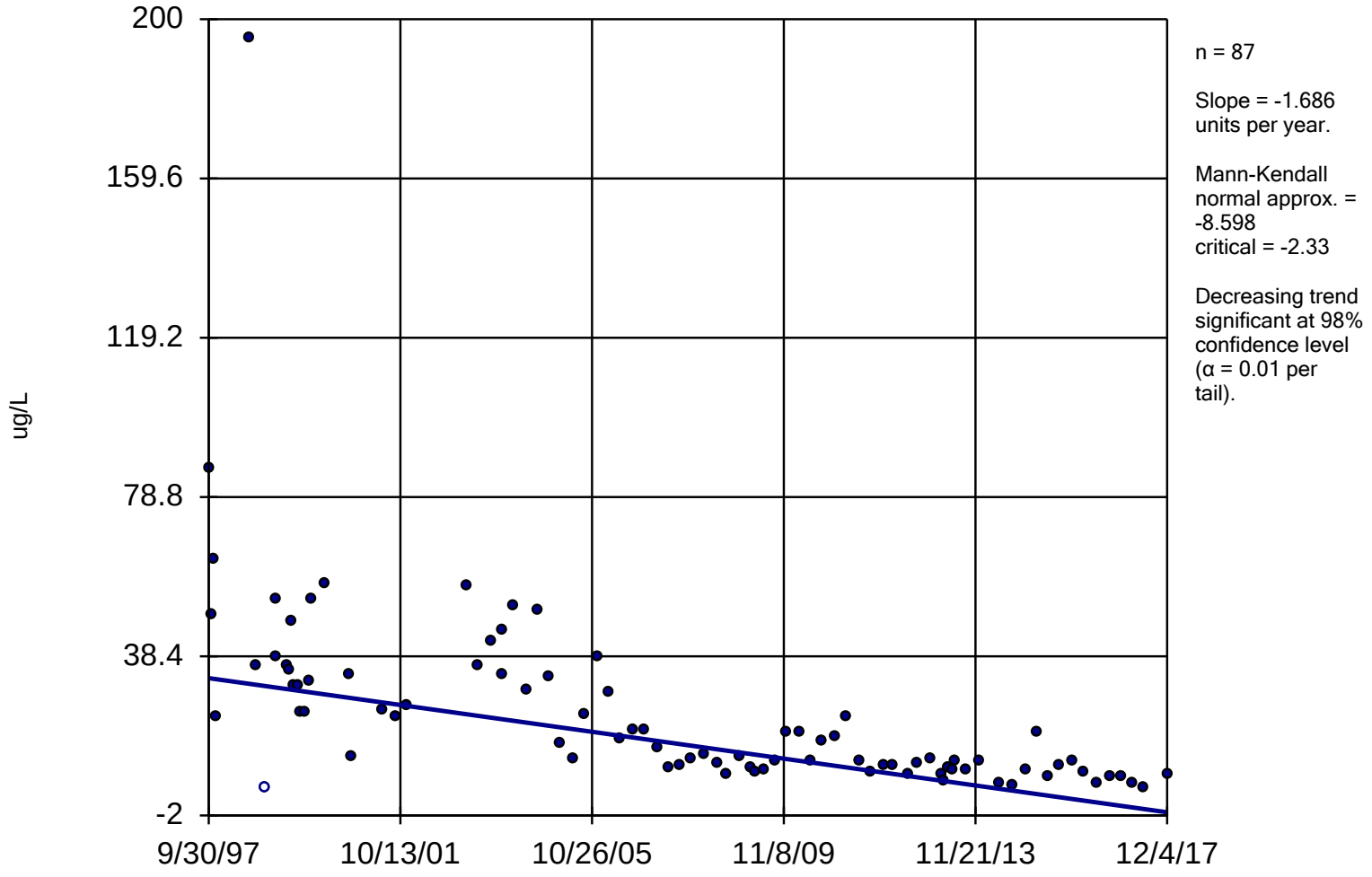
Constituent: 1,2-DCE Analysis Run 12/28/2018 10:48 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

I-2



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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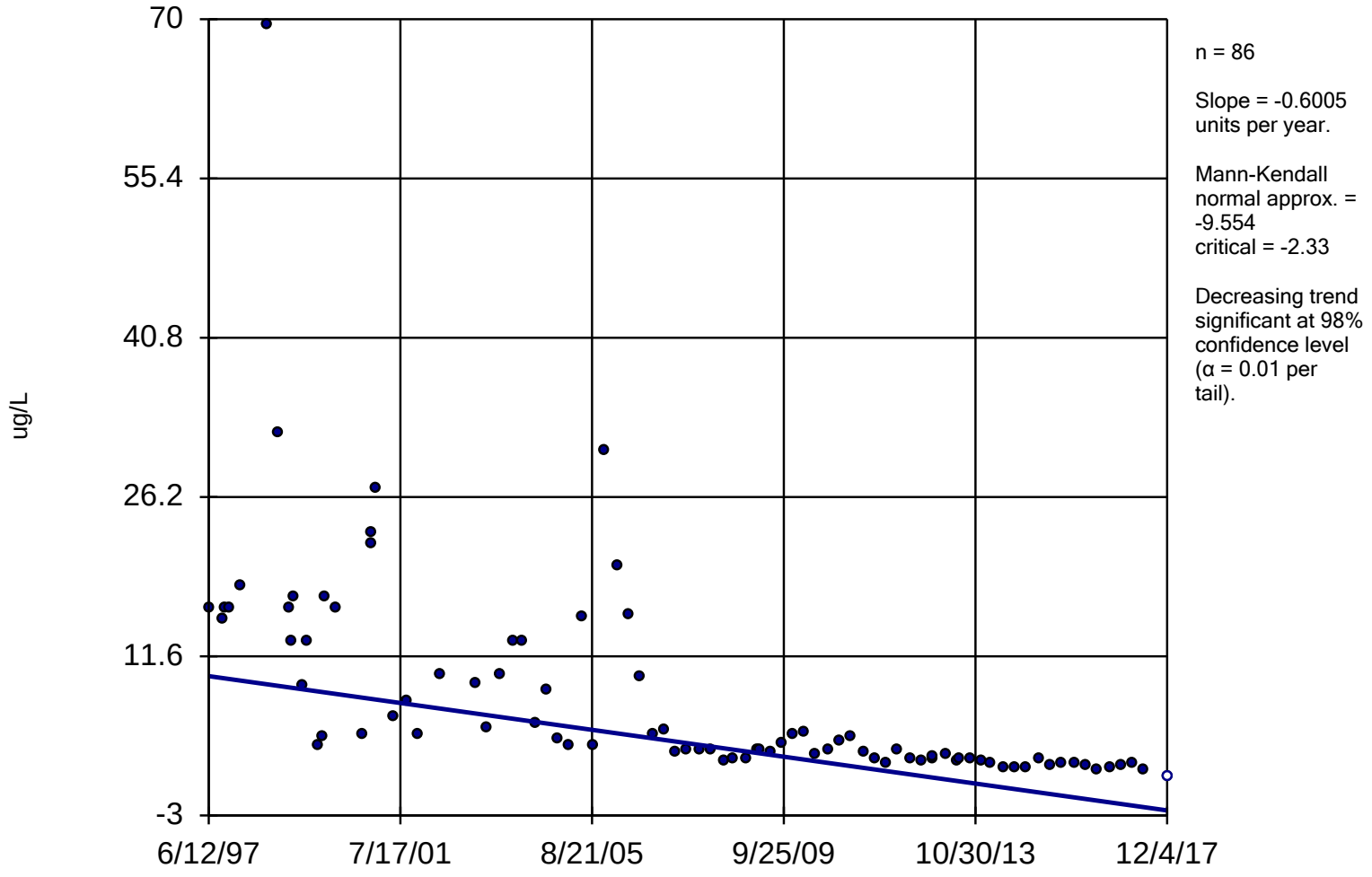
Sen's Slope Estimator

I-3



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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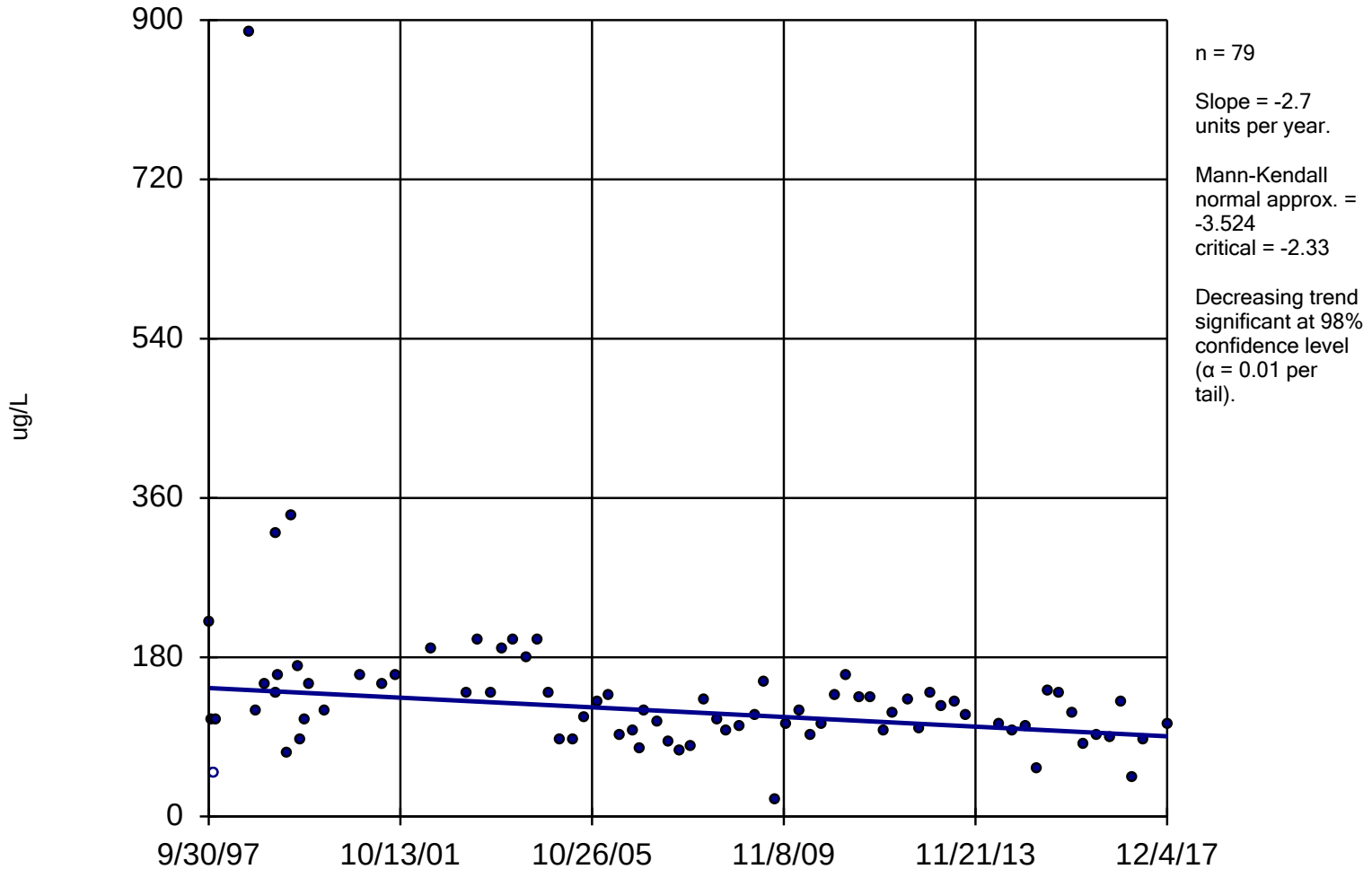
Sen's Slope Estimator

I-4



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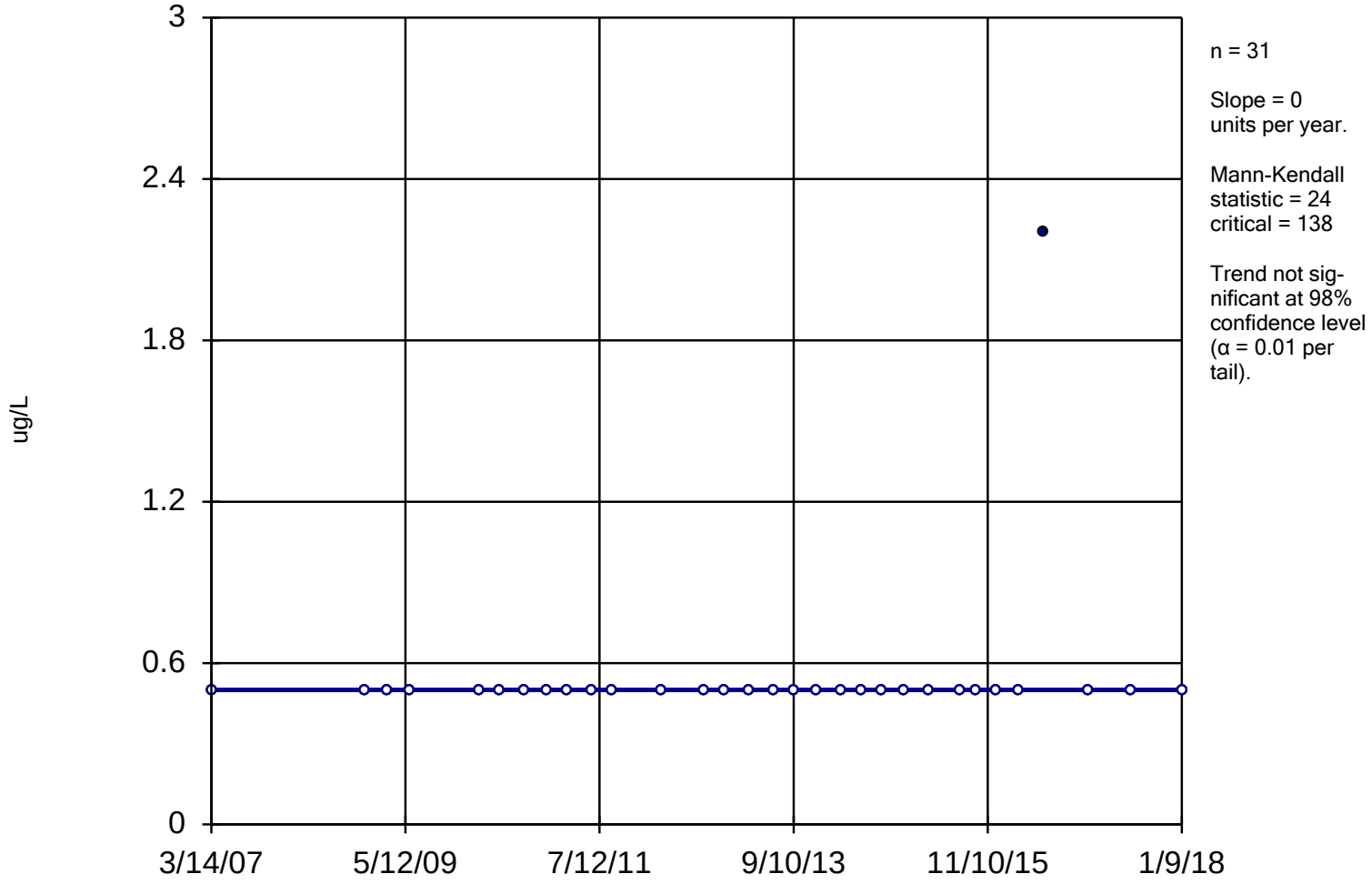
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

S-2DB



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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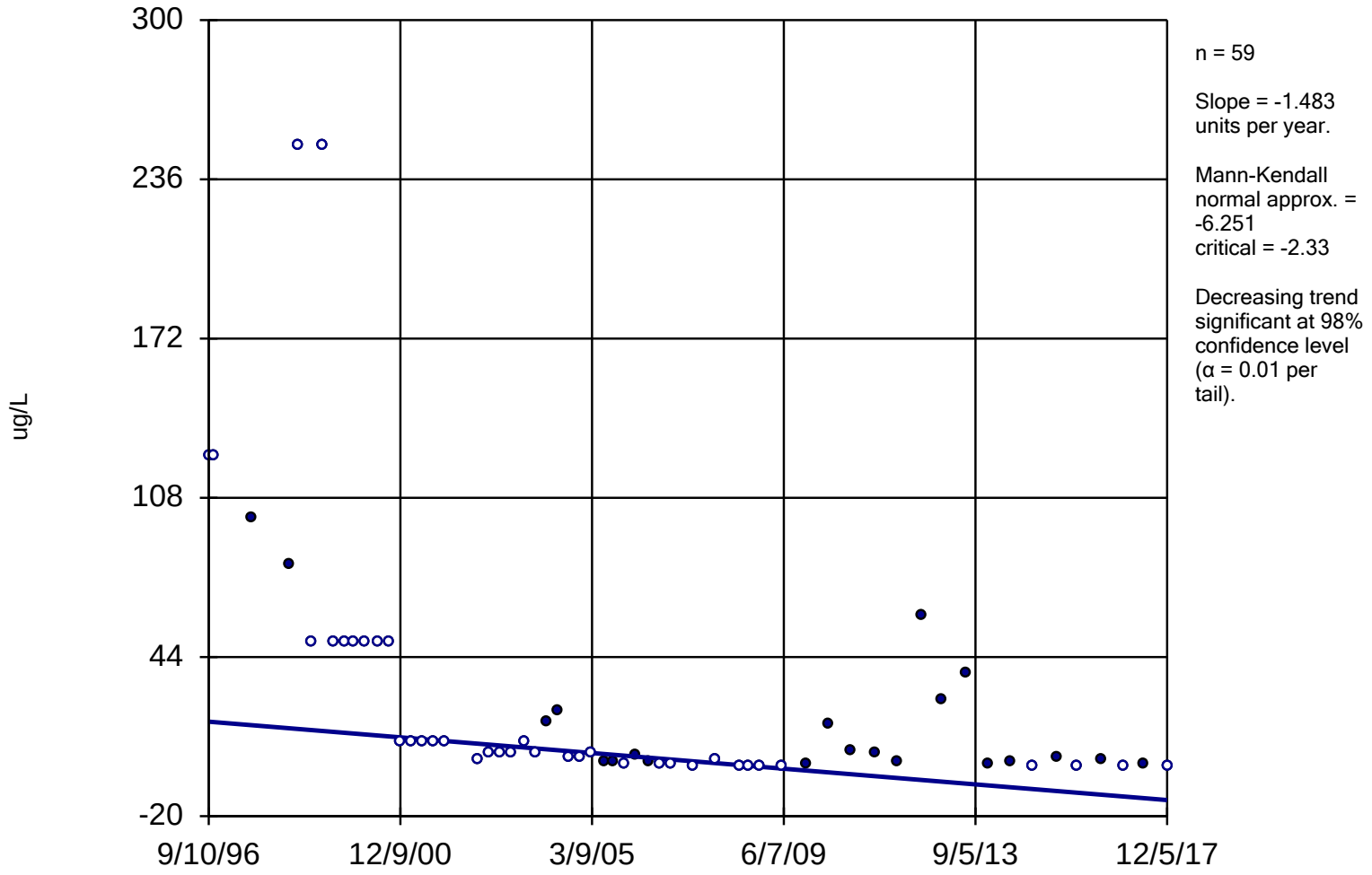
Sen's Slope Estimator

SM-1



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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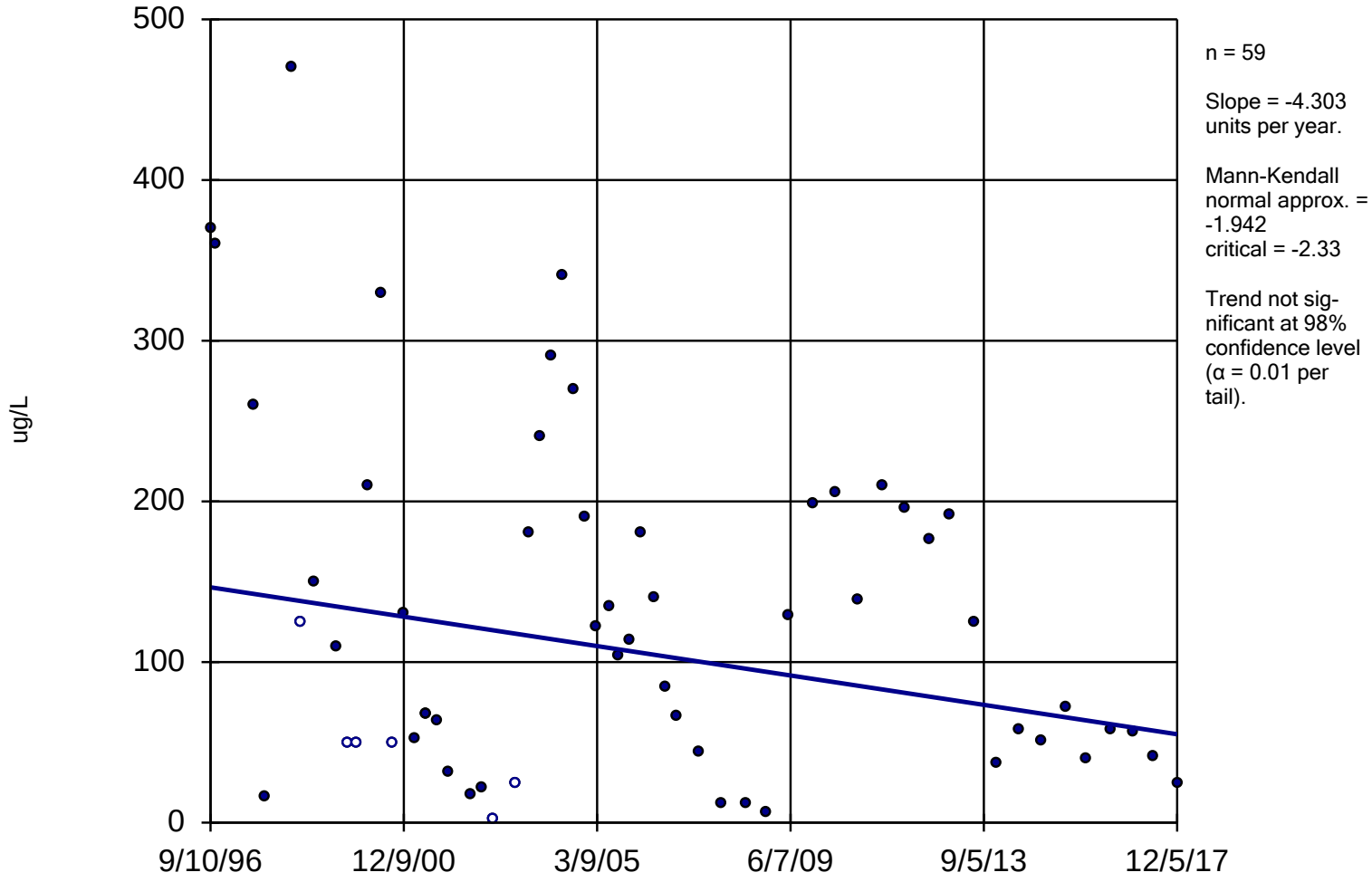
Sen's Slope Estimator

SM-2



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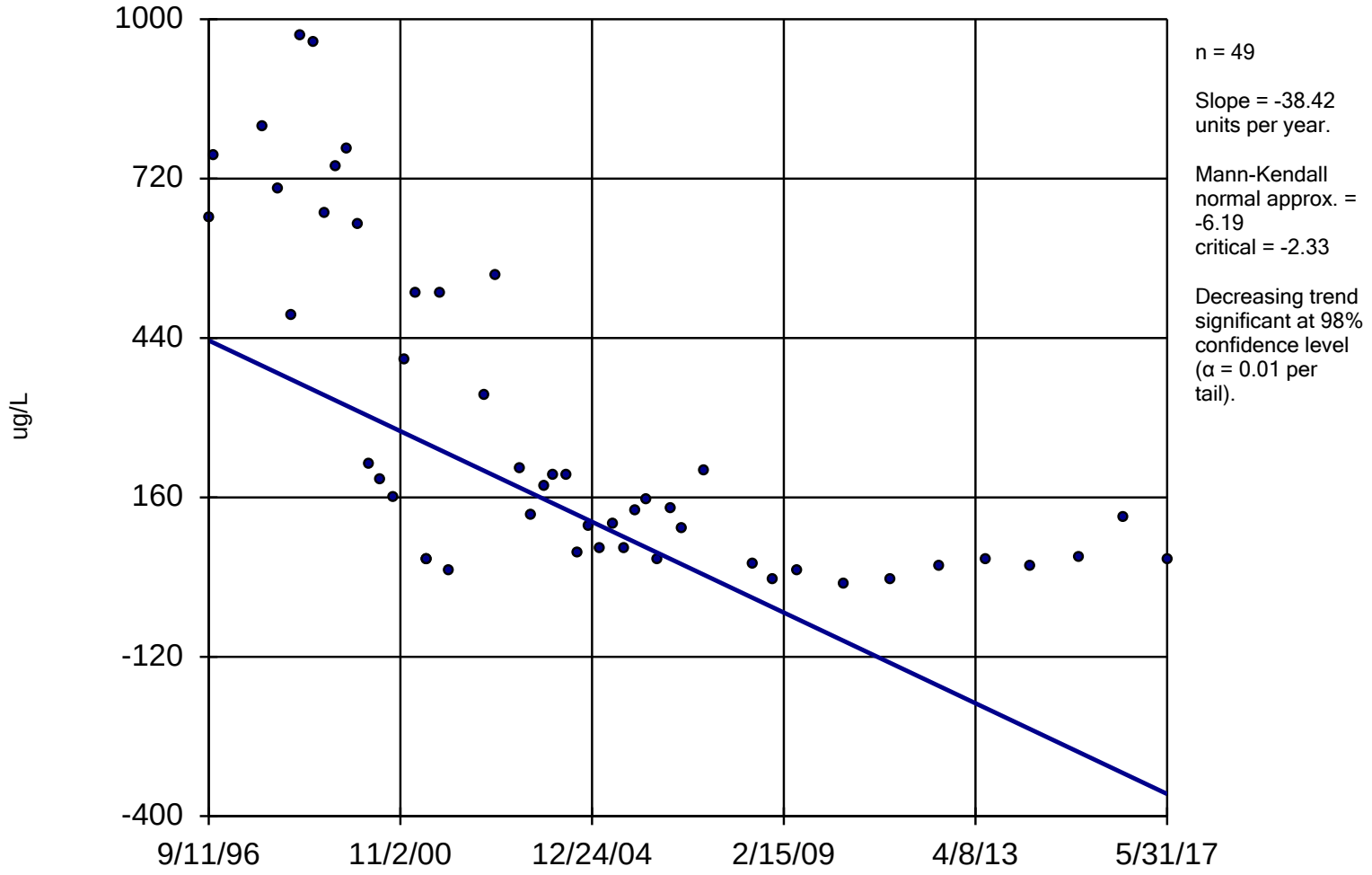
Sen's Slope Estimator

SM-3



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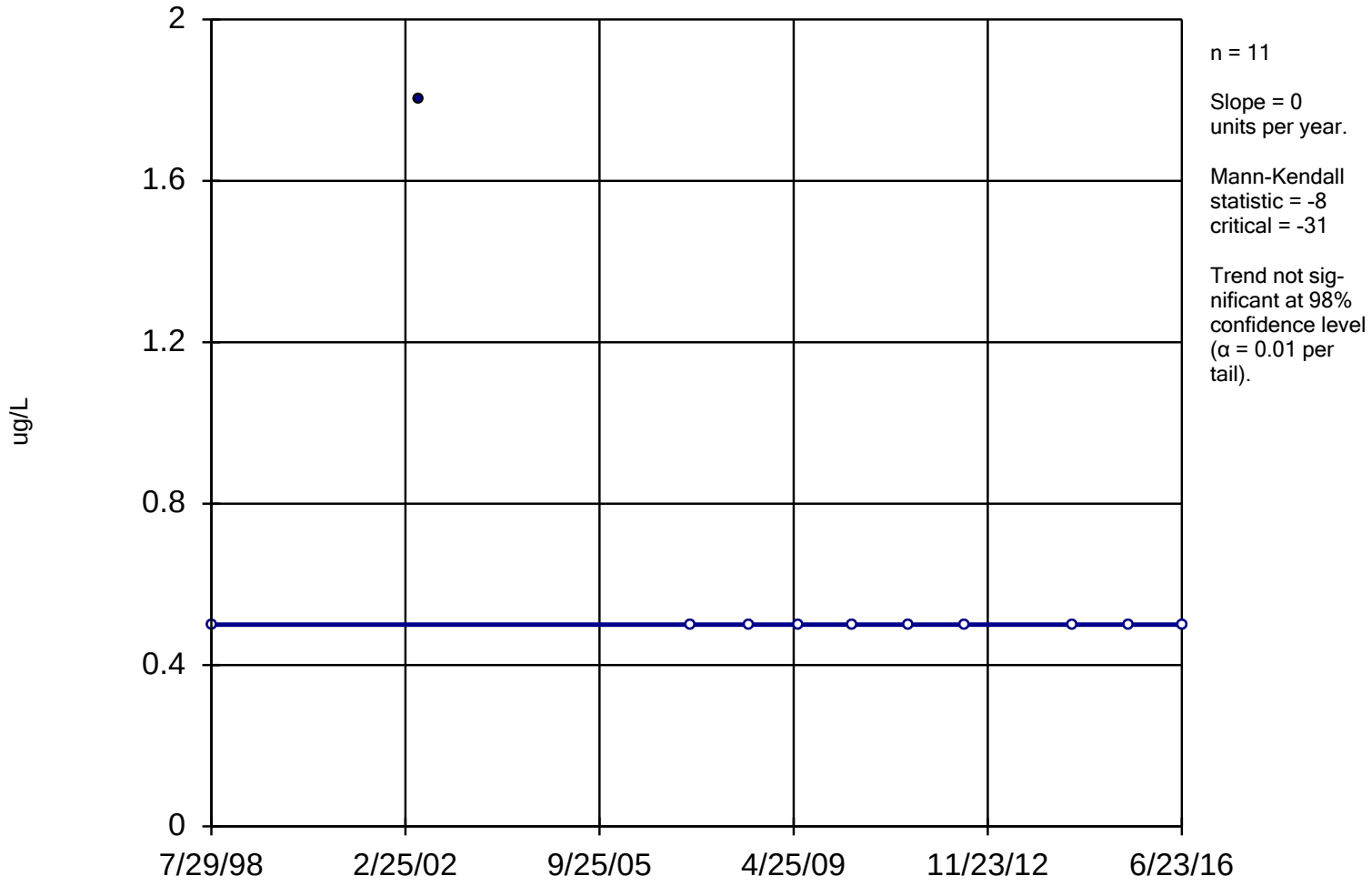
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

W-1



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Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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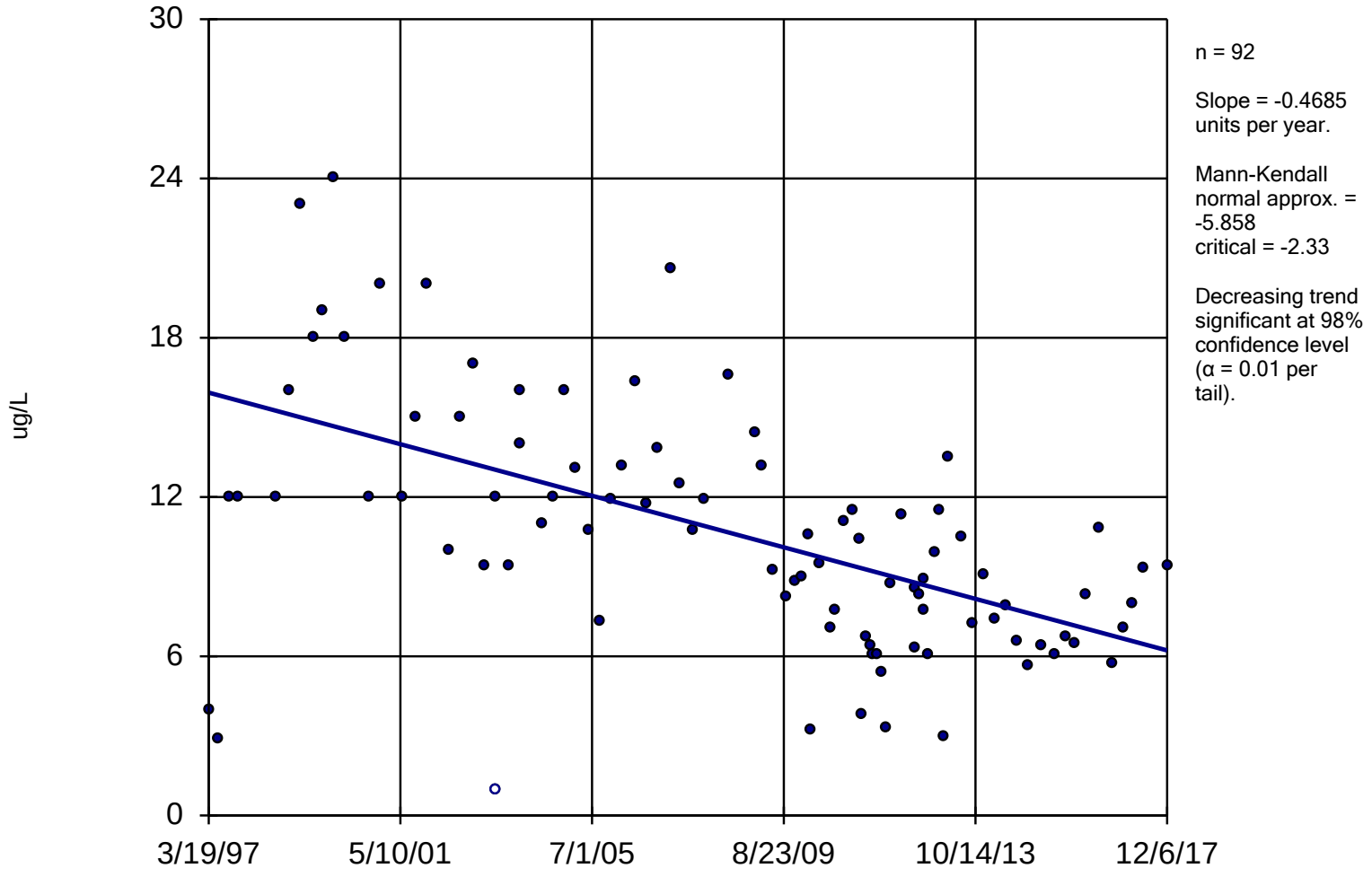
Sen's Slope Estimator

W-6



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Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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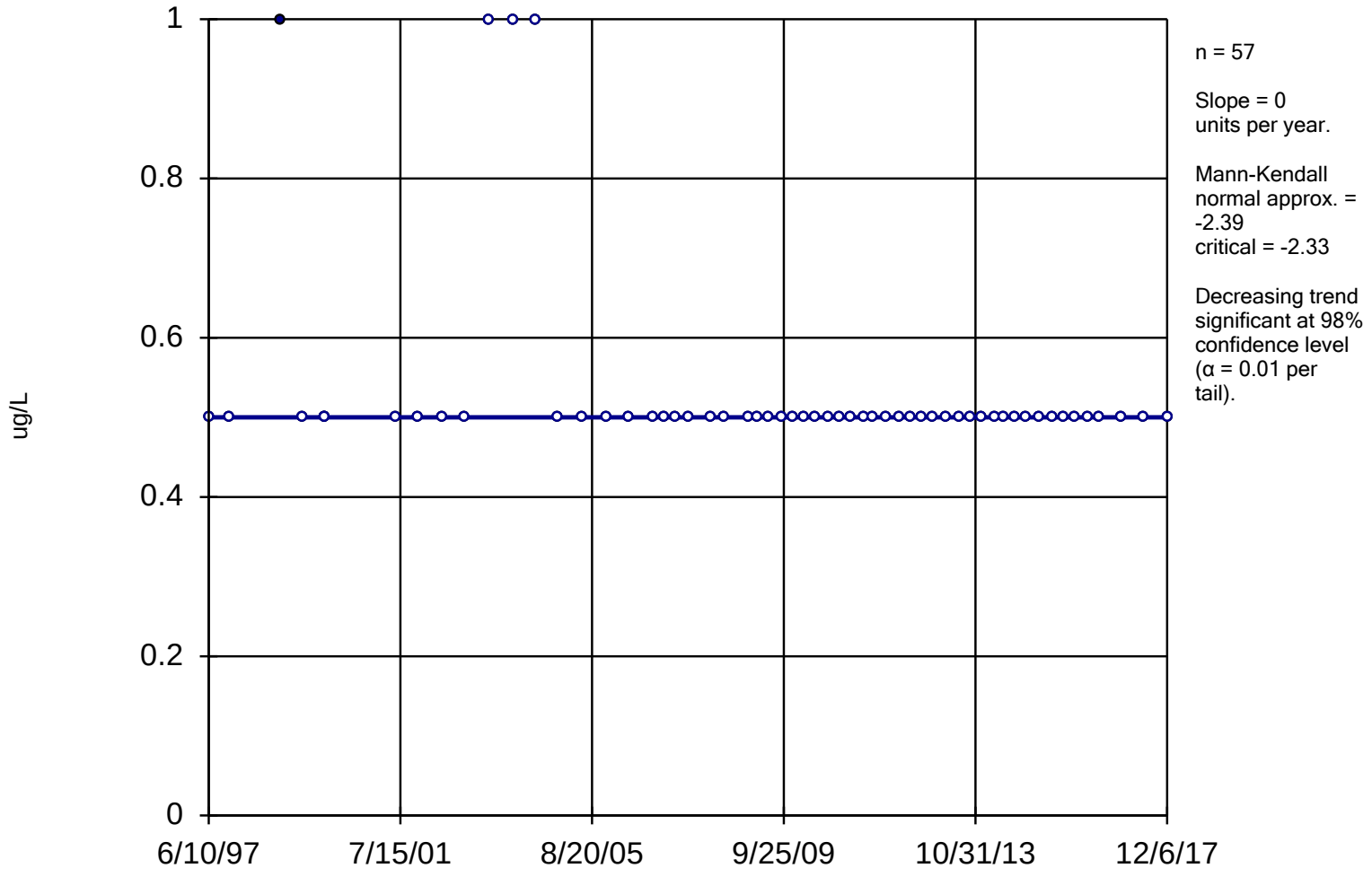
Sen's Slope Estimator

W-7



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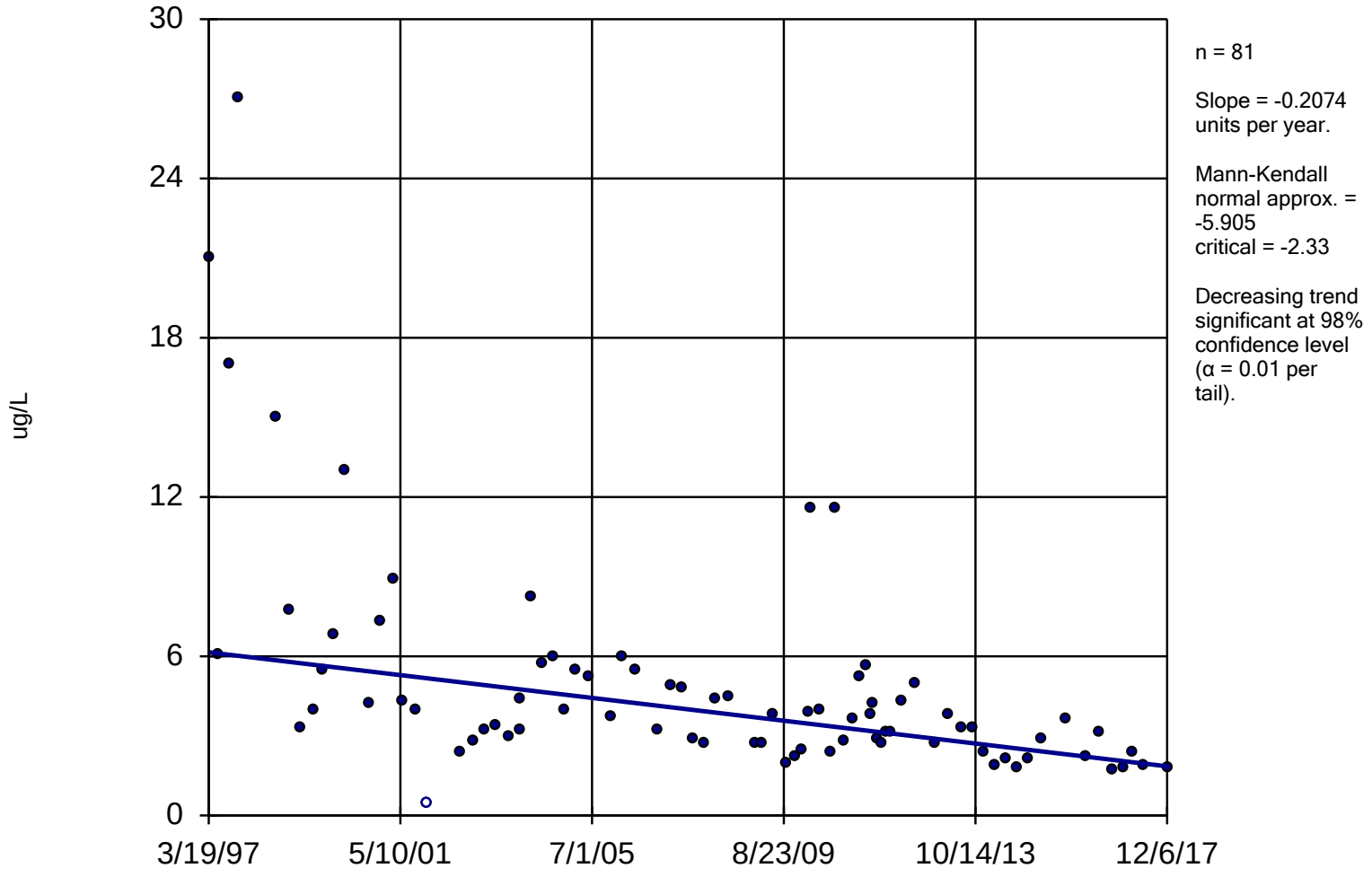
Sen's Slope Estimator

W-12



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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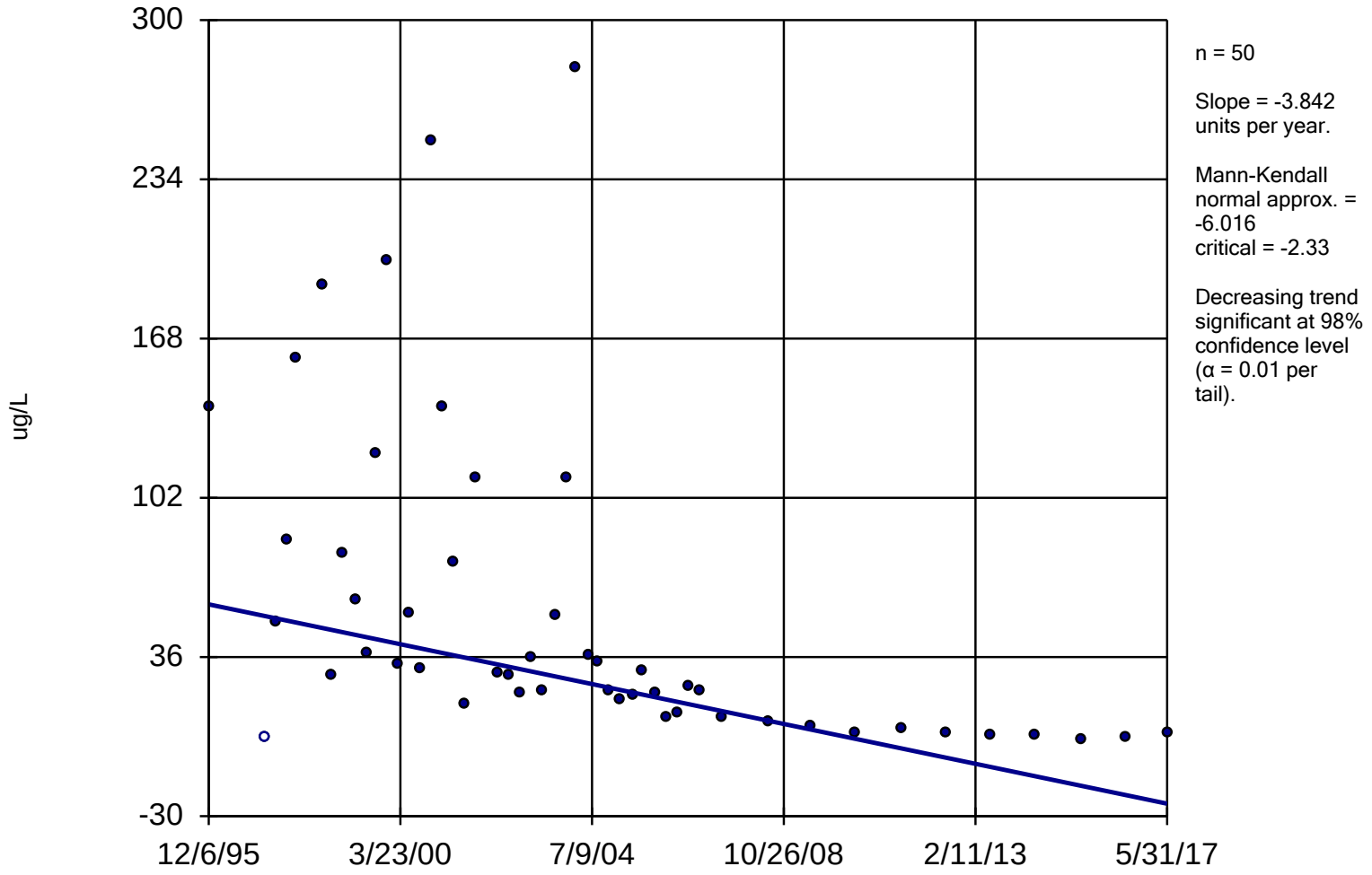
Sen's Slope Estimator

B-1I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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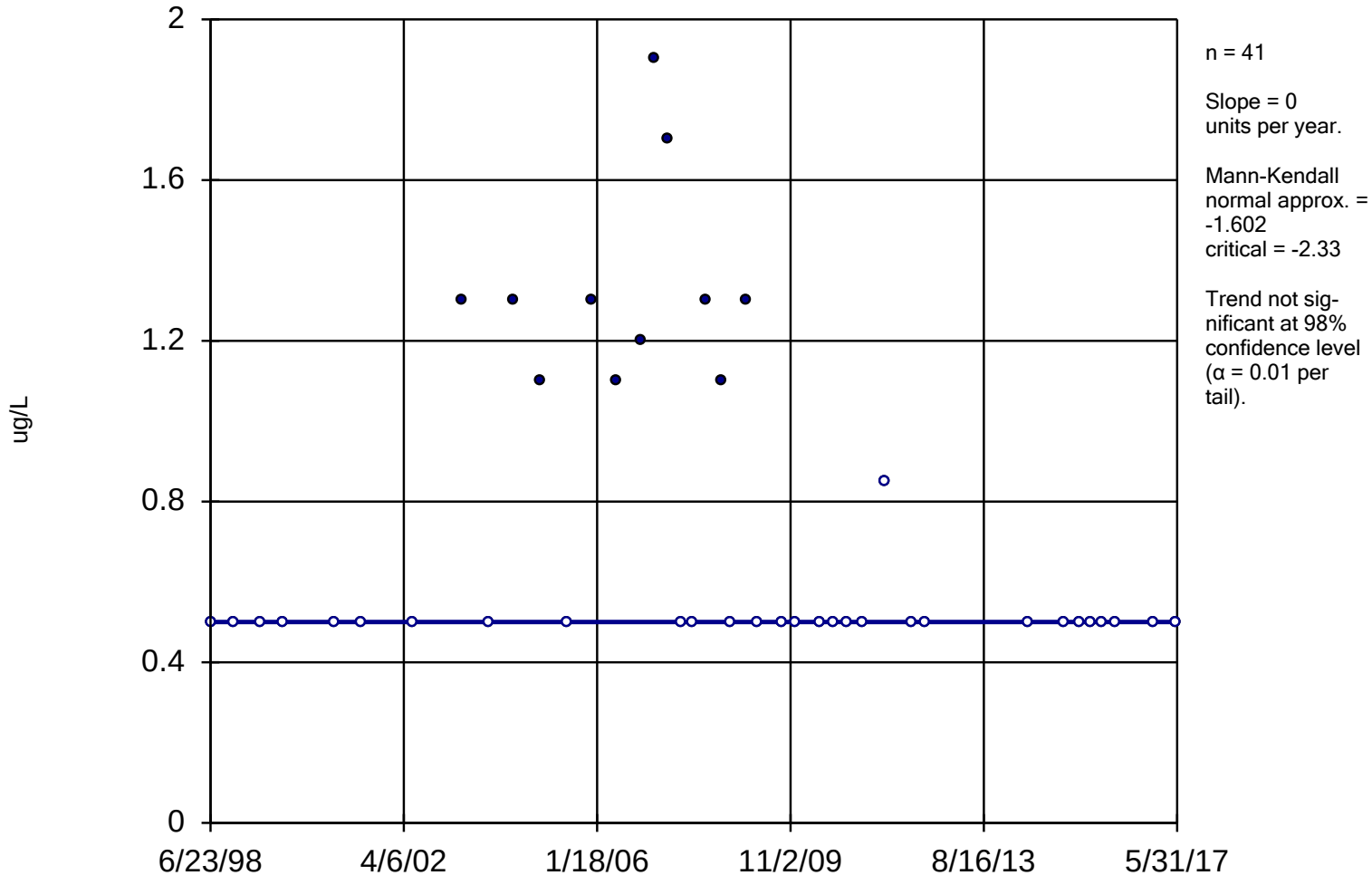
Sen's Slope Estimator

B-2D



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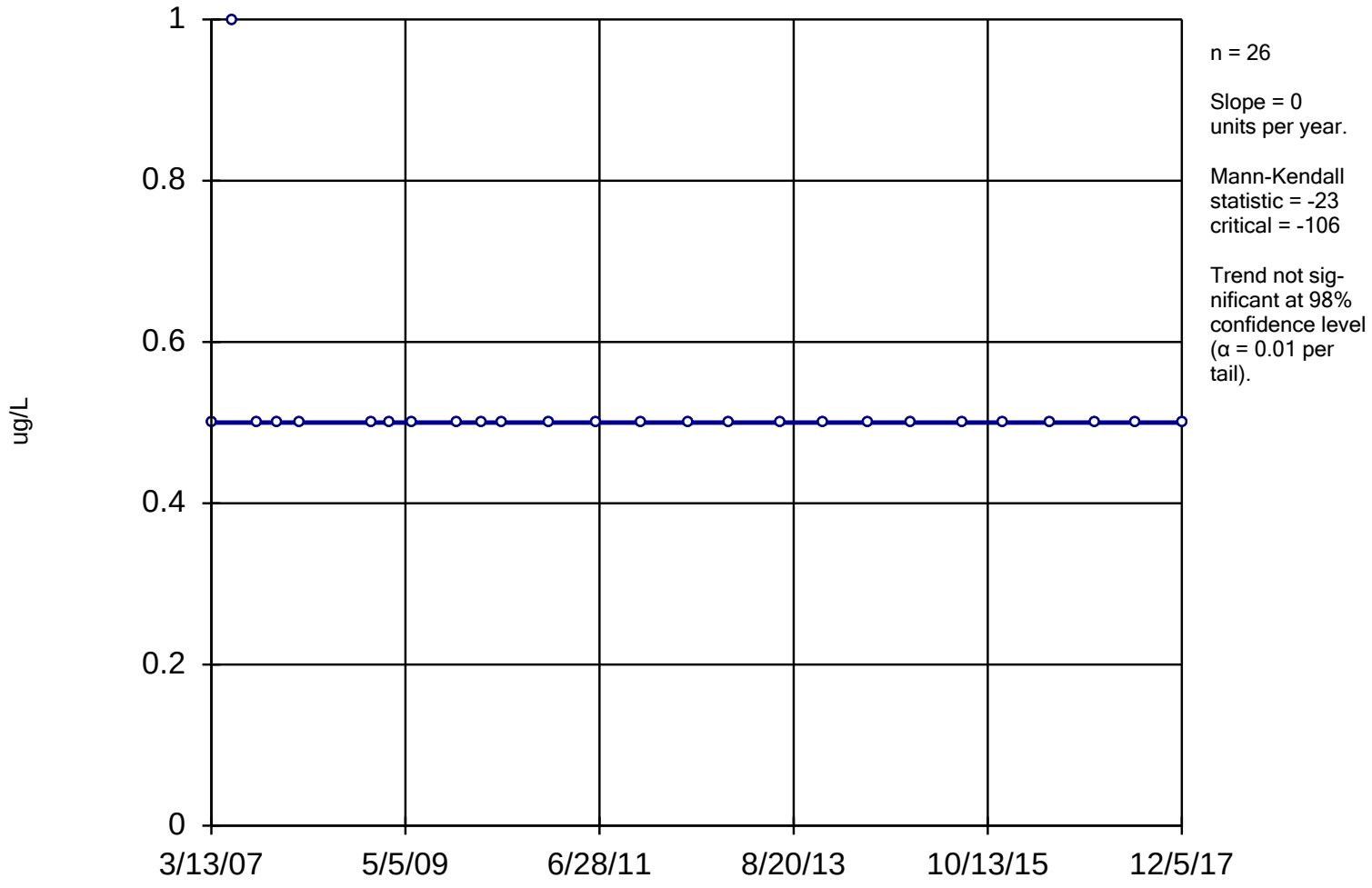
Sen's Slope Estimator

B-2I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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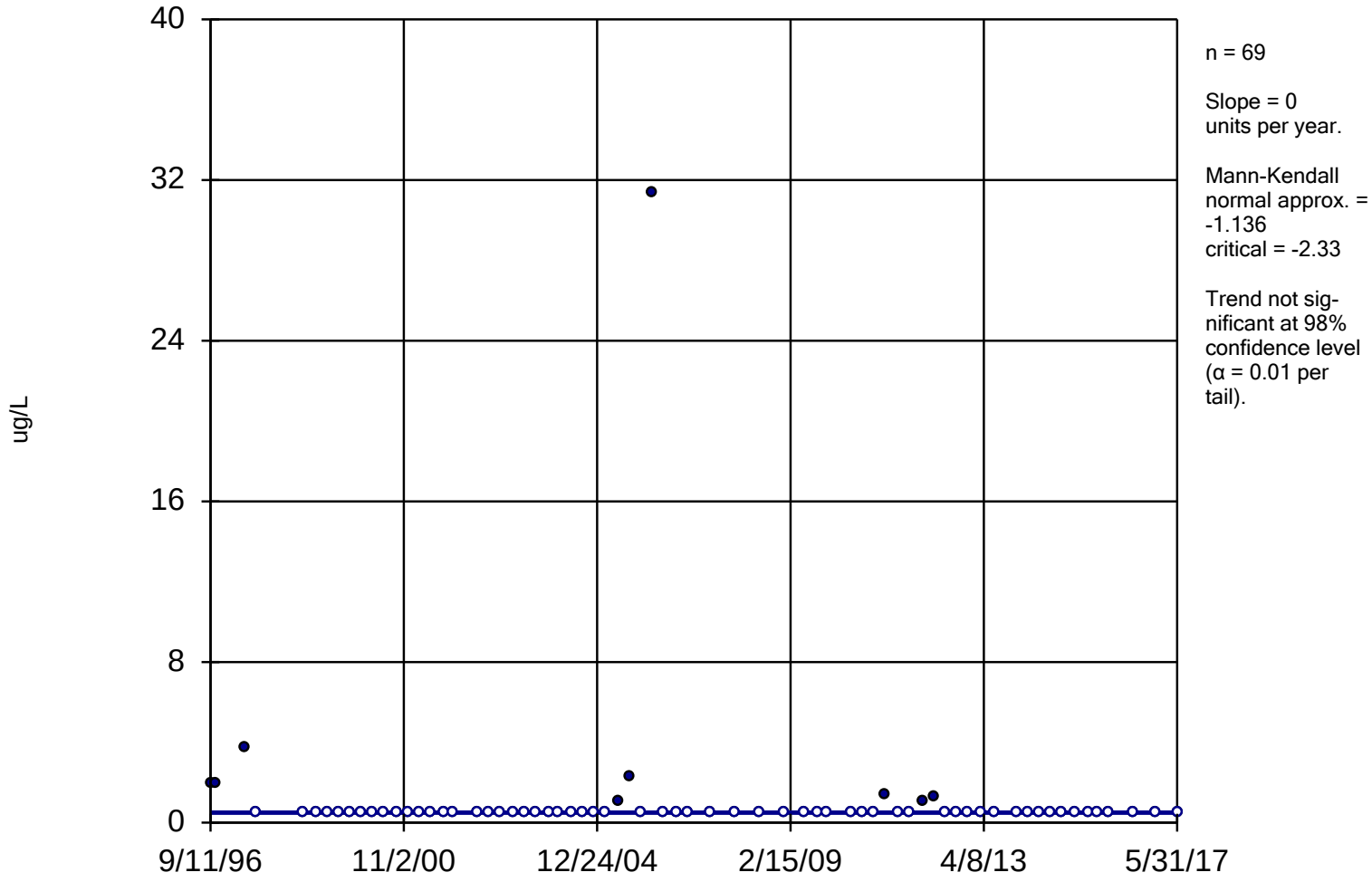
Sen's Slope Estimator

B-2S



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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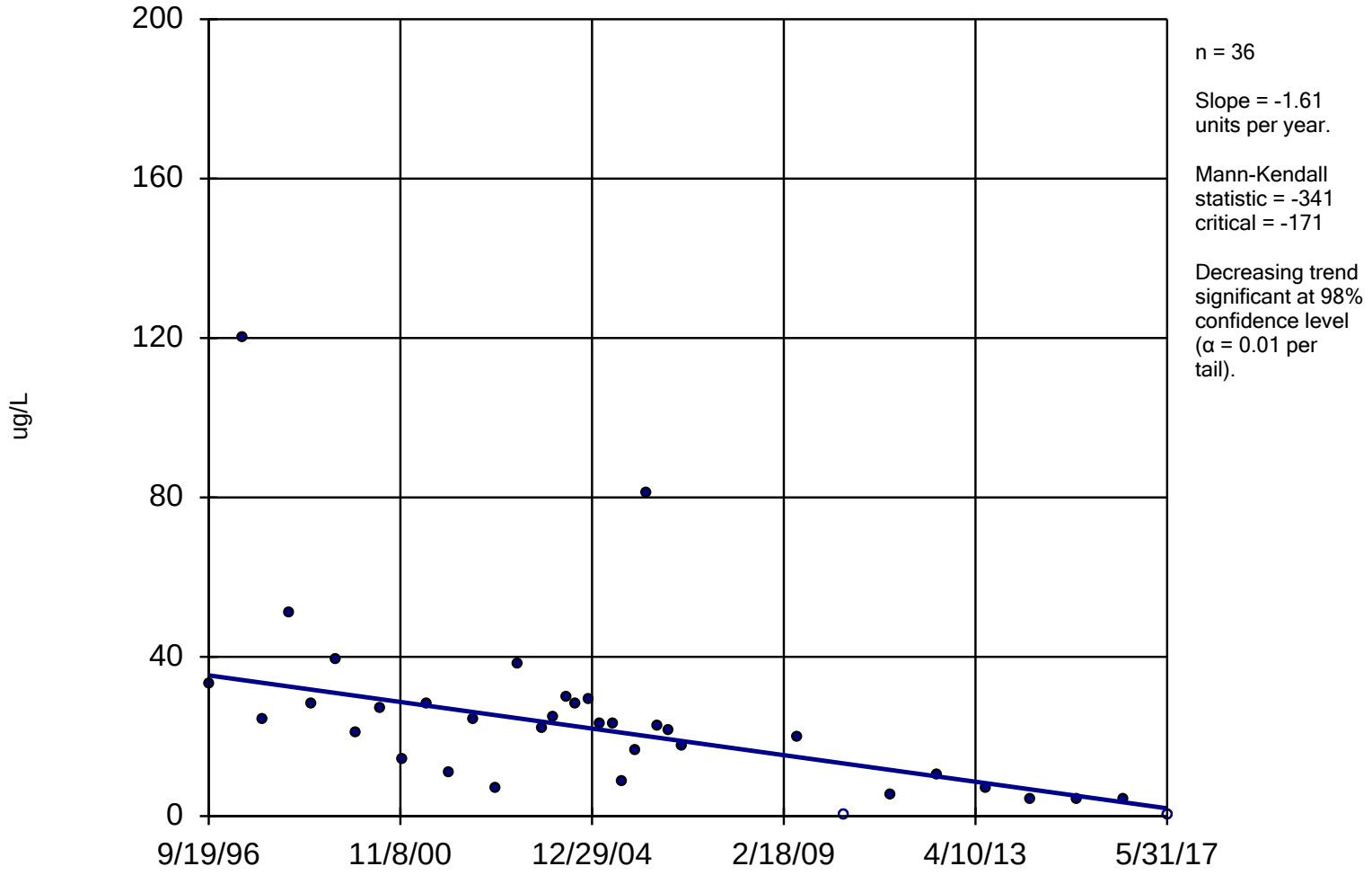
Sen's Slope Estimator

B-3I



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Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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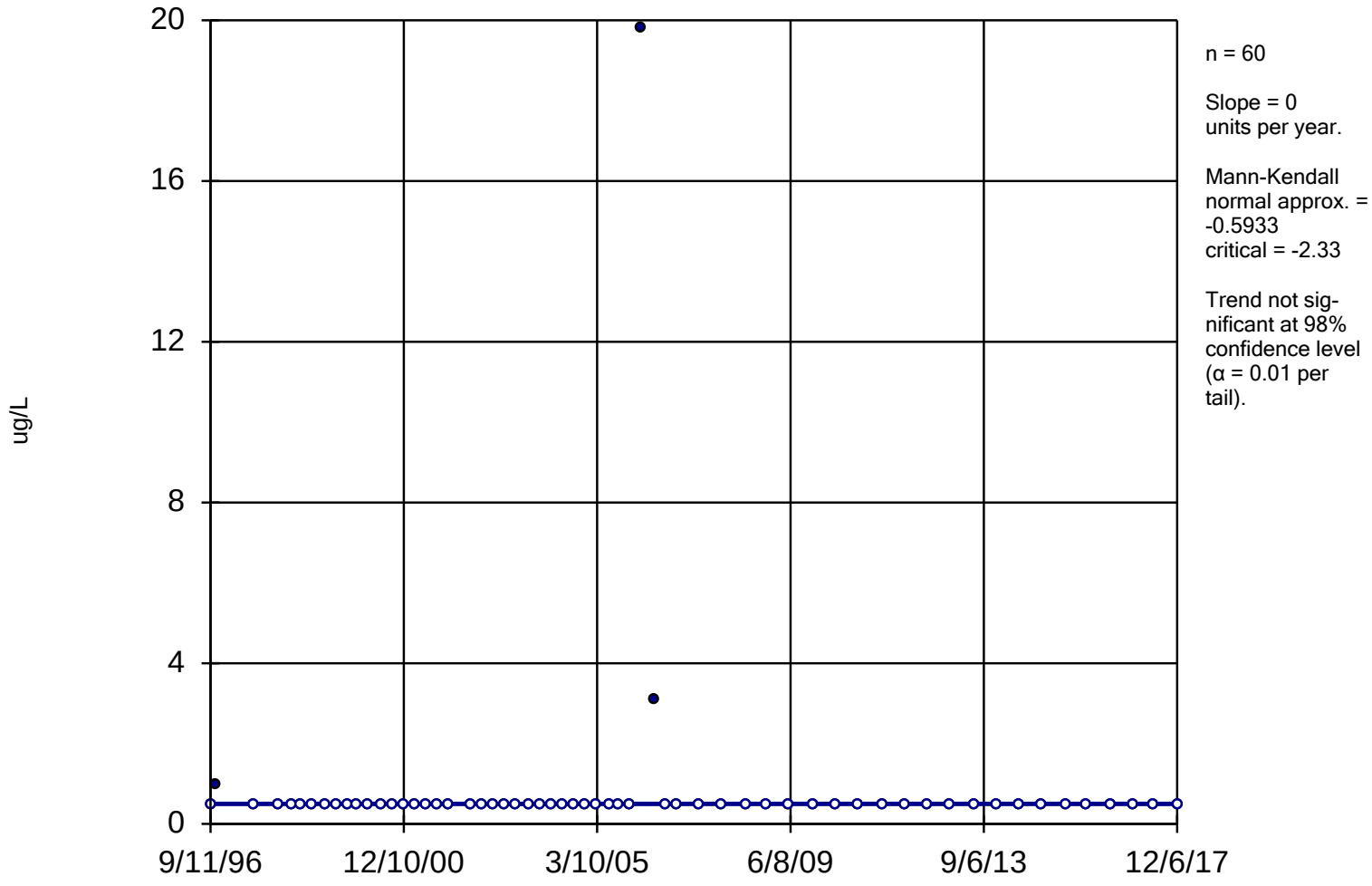
Sen's Slope Estimator

B-4D



Constituent: TCE Analysis Run 12/28/2018 10:49 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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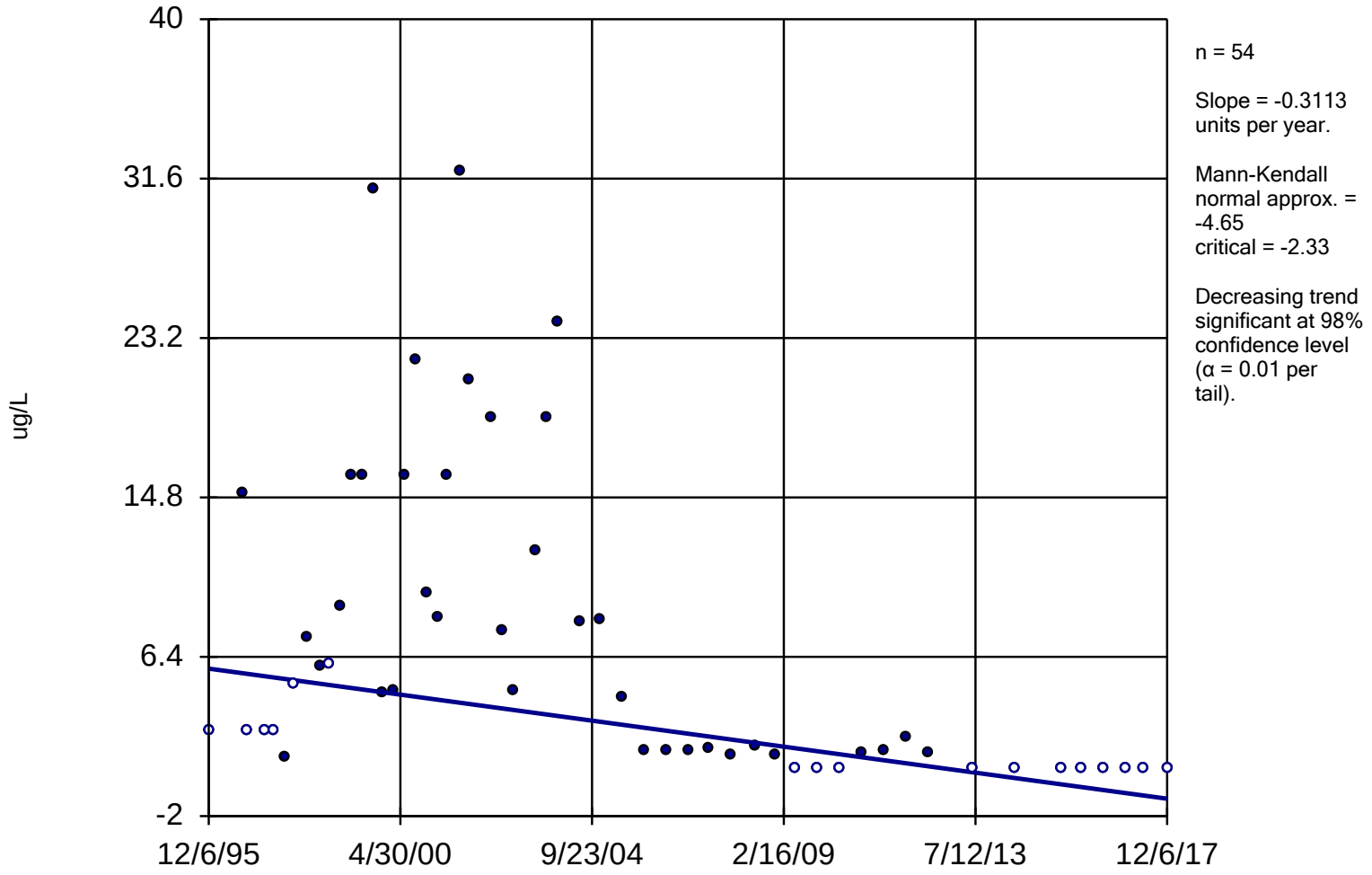
Sen's Slope Estimator

B-4I



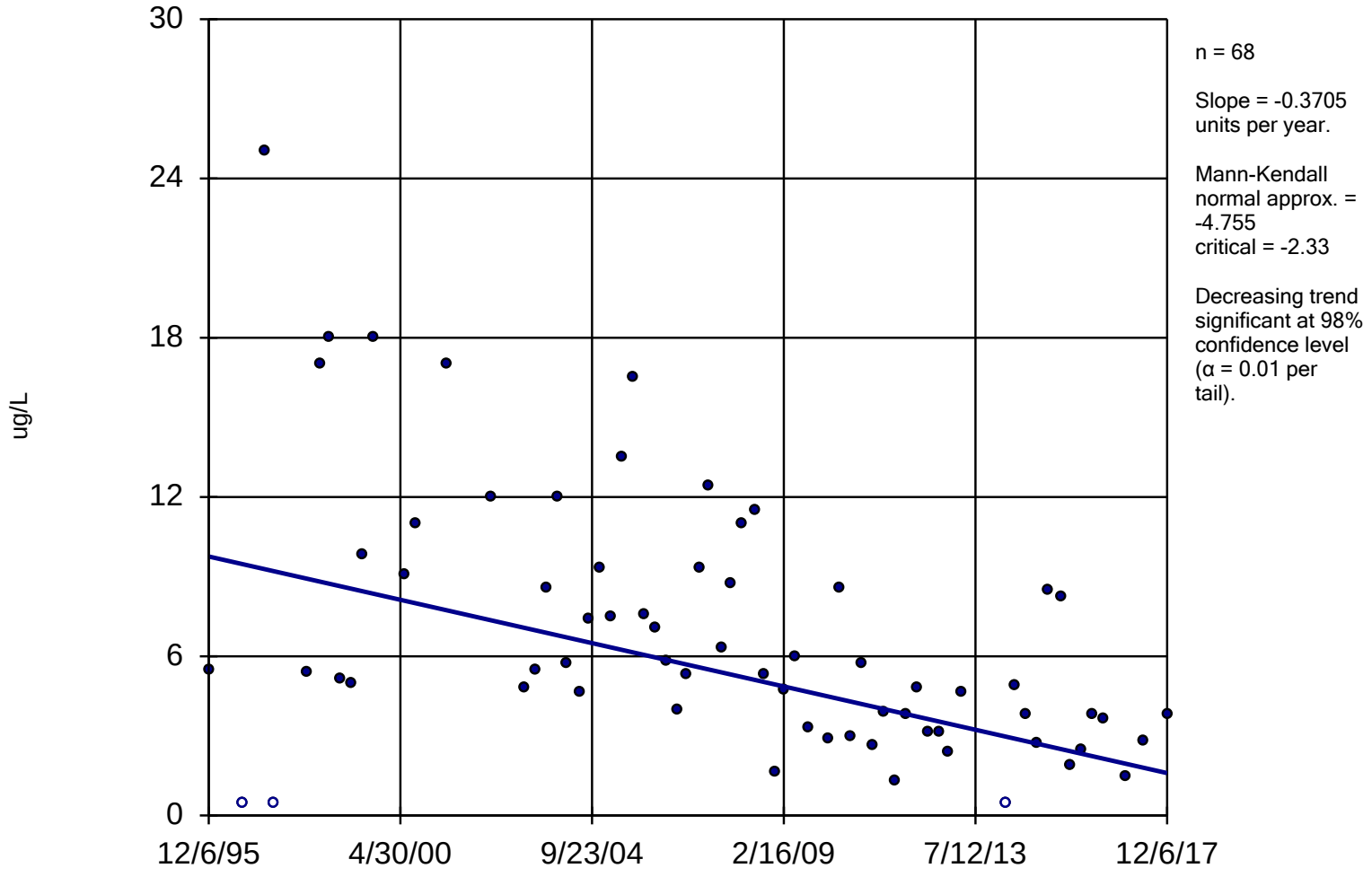
Constituent: TCE Analysis Run 12/28/2018 10:49 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-4S



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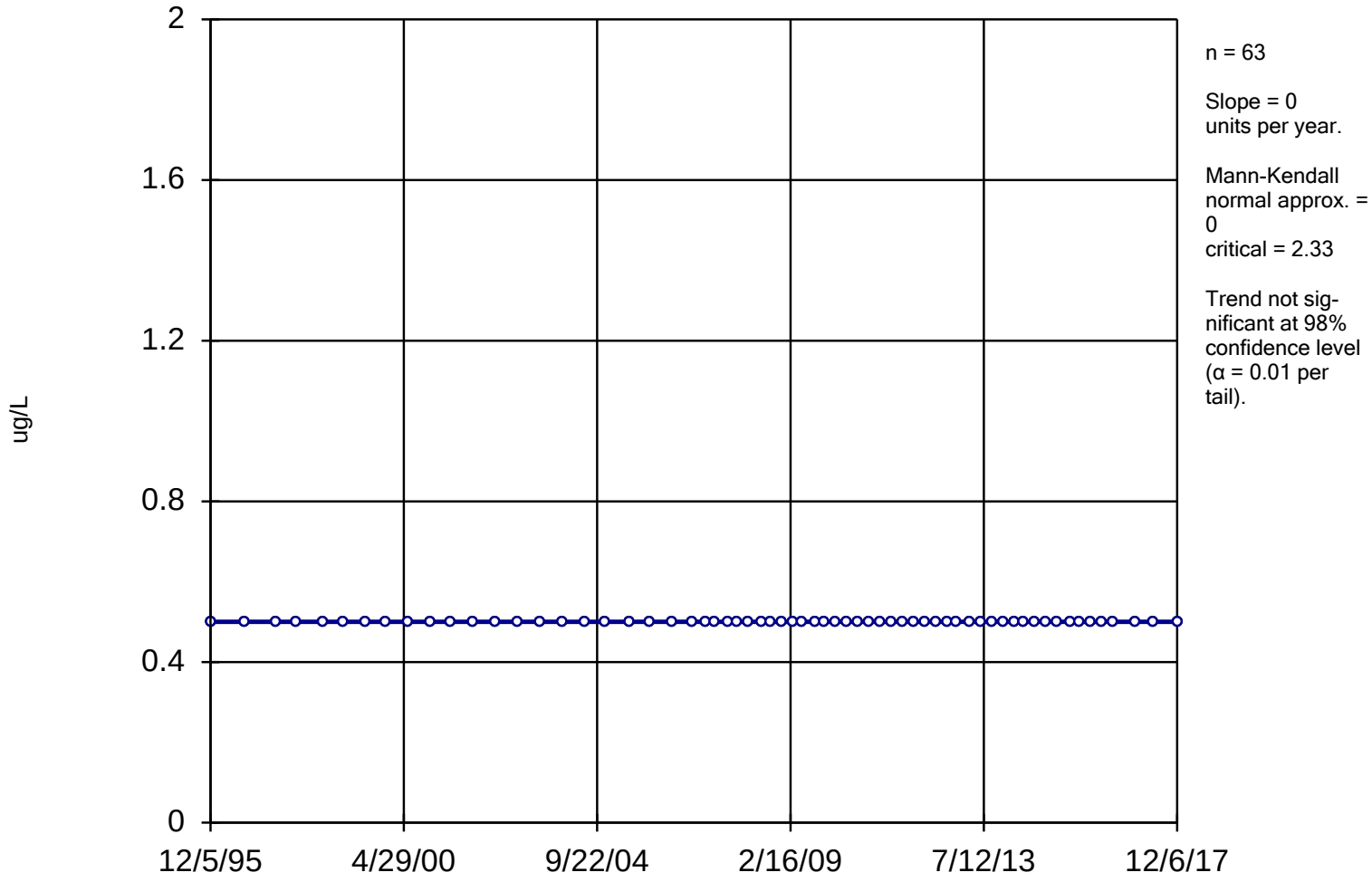
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Hollow symbols indicate censored values.

Sen's Slope Estimator

B-5D



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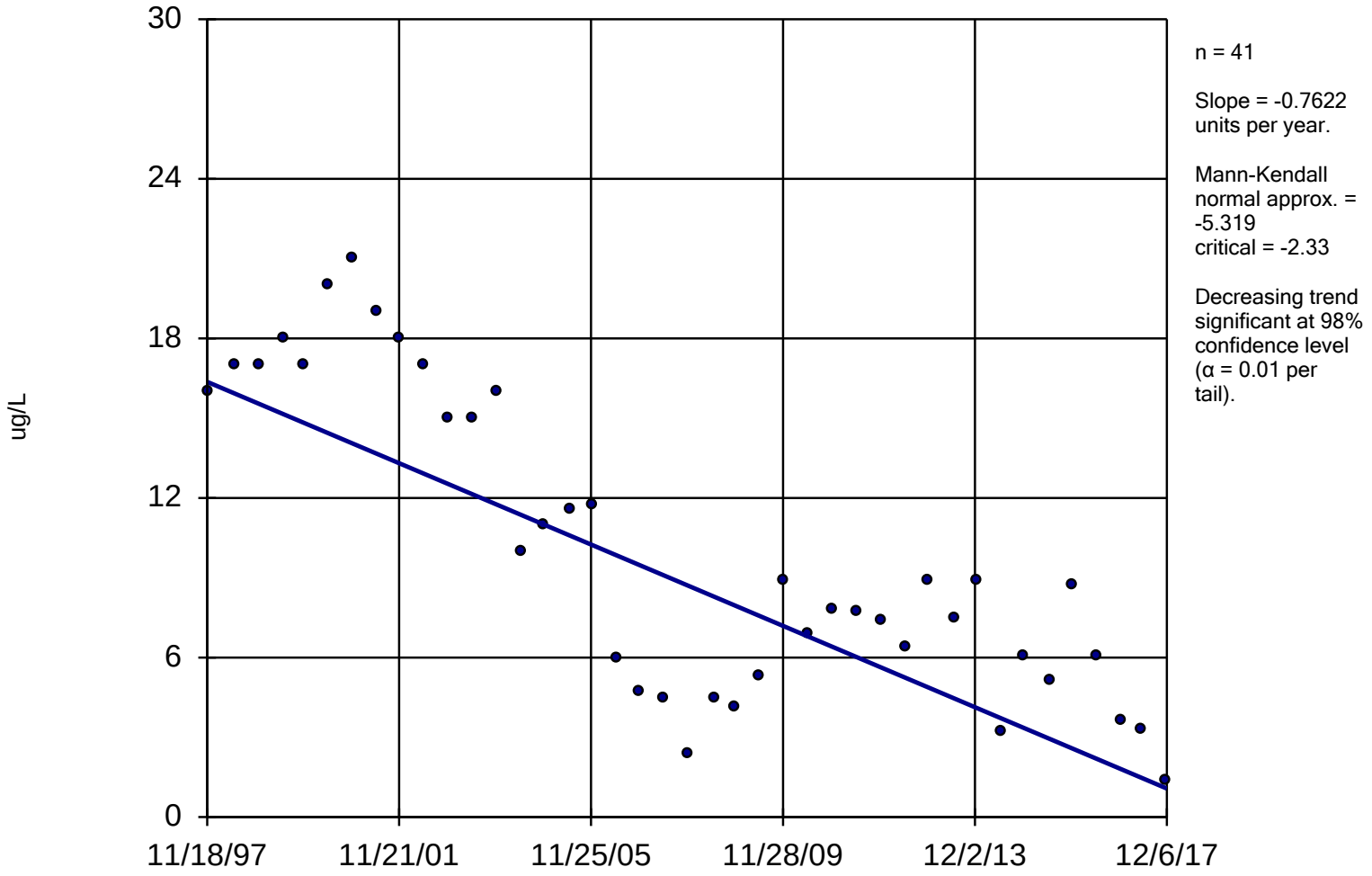
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

B-5I



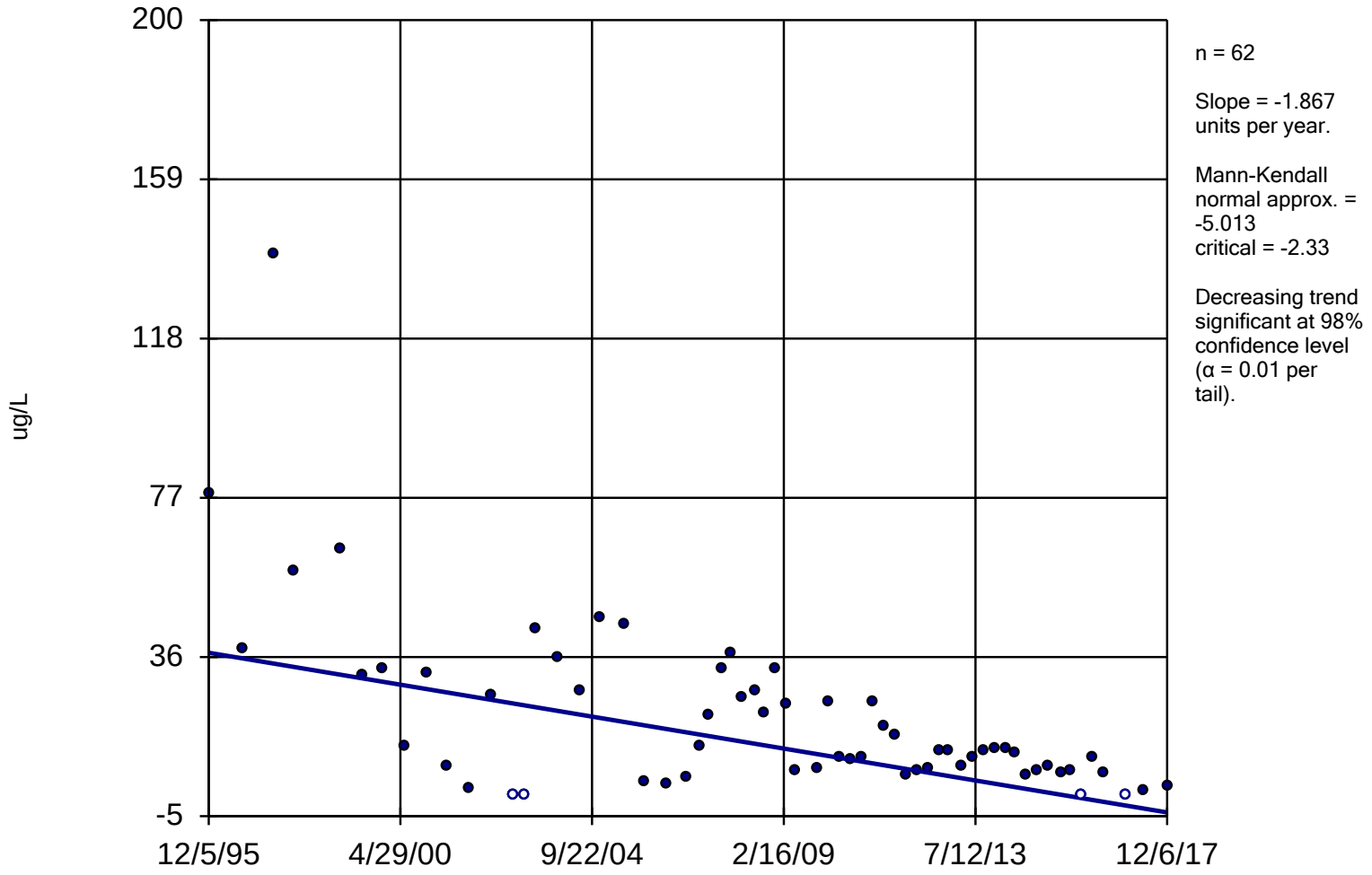
Constituent: TCE Analysis Run 12/28/2018 10:50 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-6I



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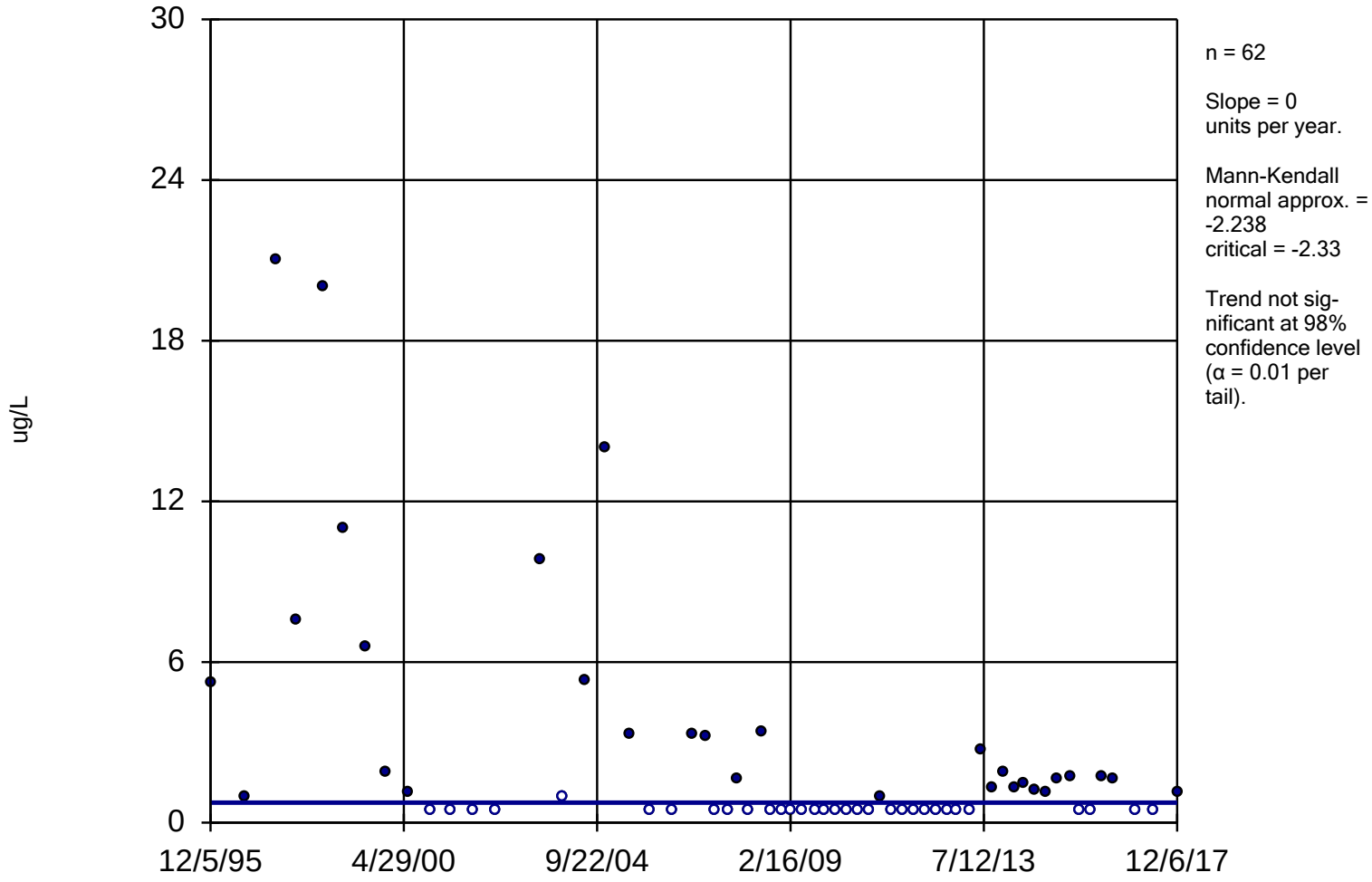
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-6S



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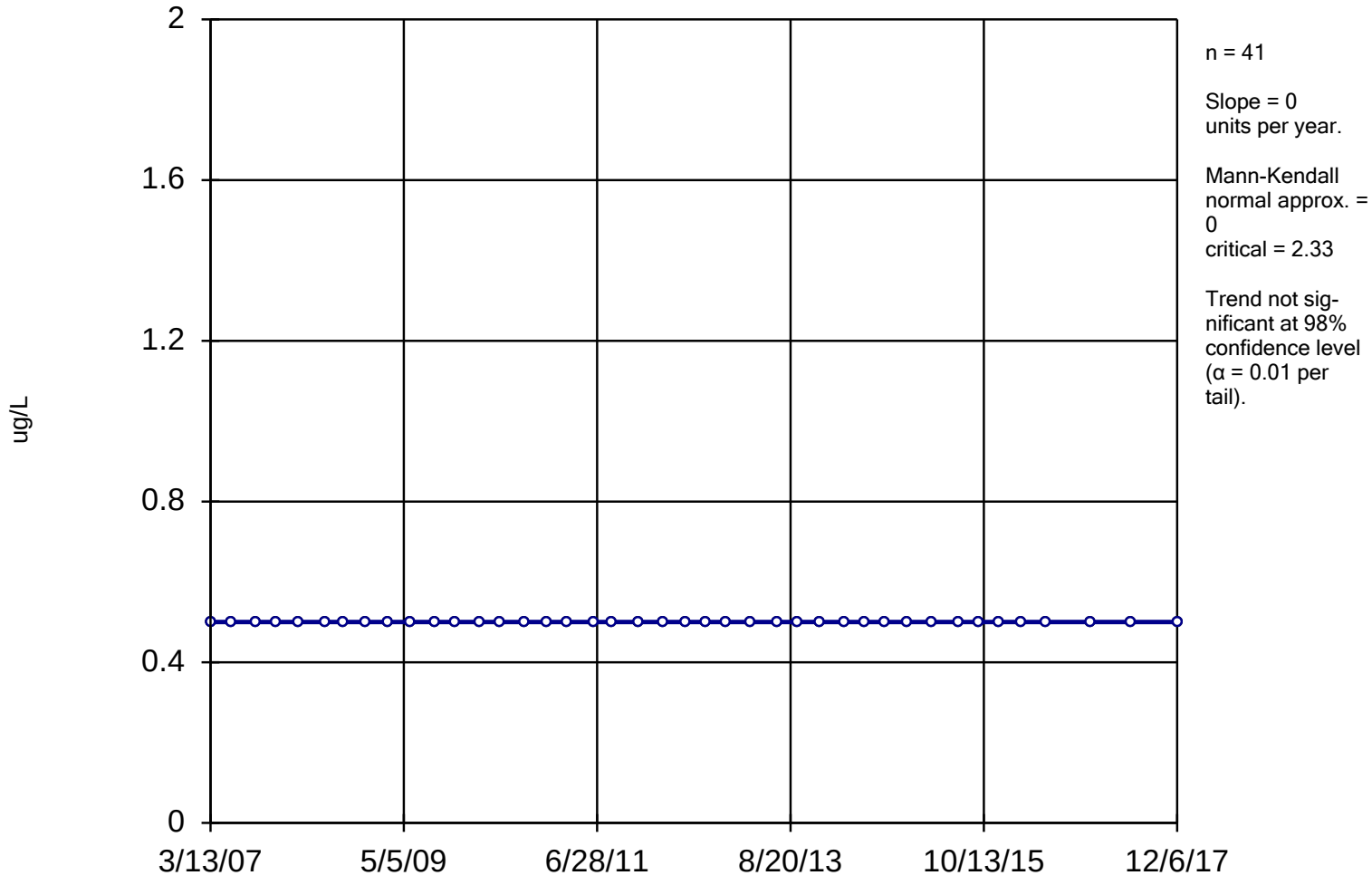
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-8D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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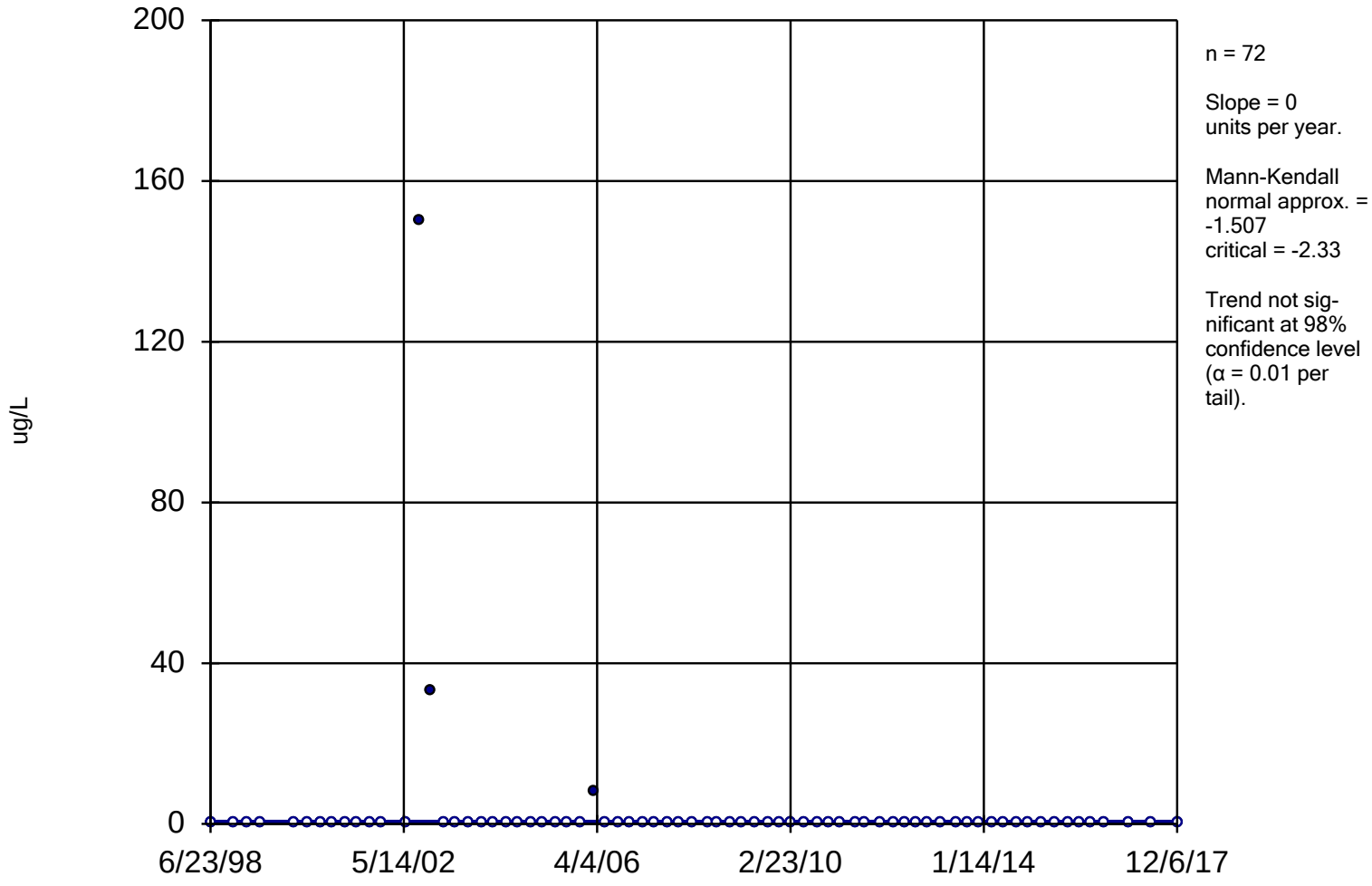
Sen's Slope Estimator

B-8I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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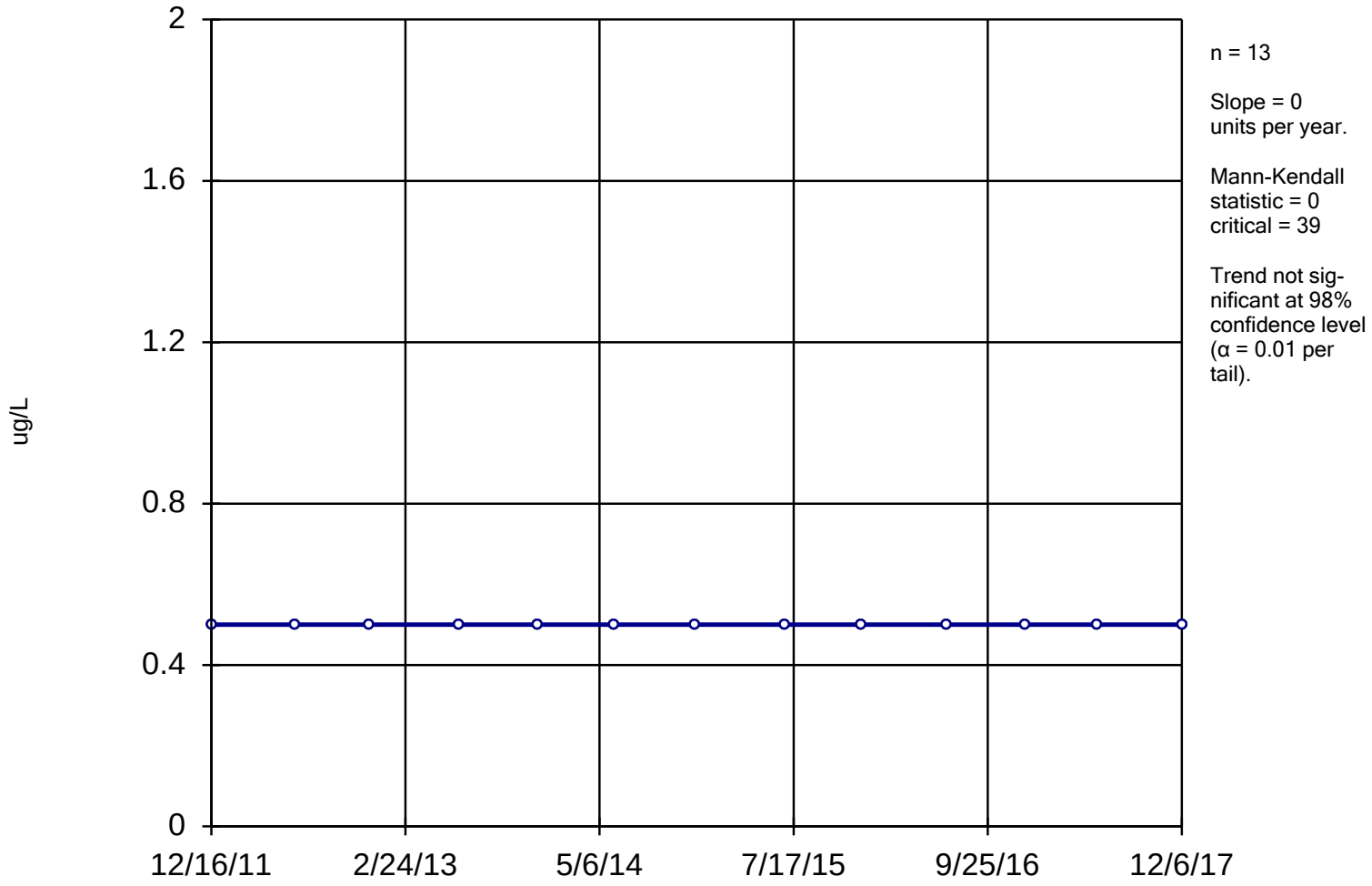
Sen's Slope Estimator

B-8S



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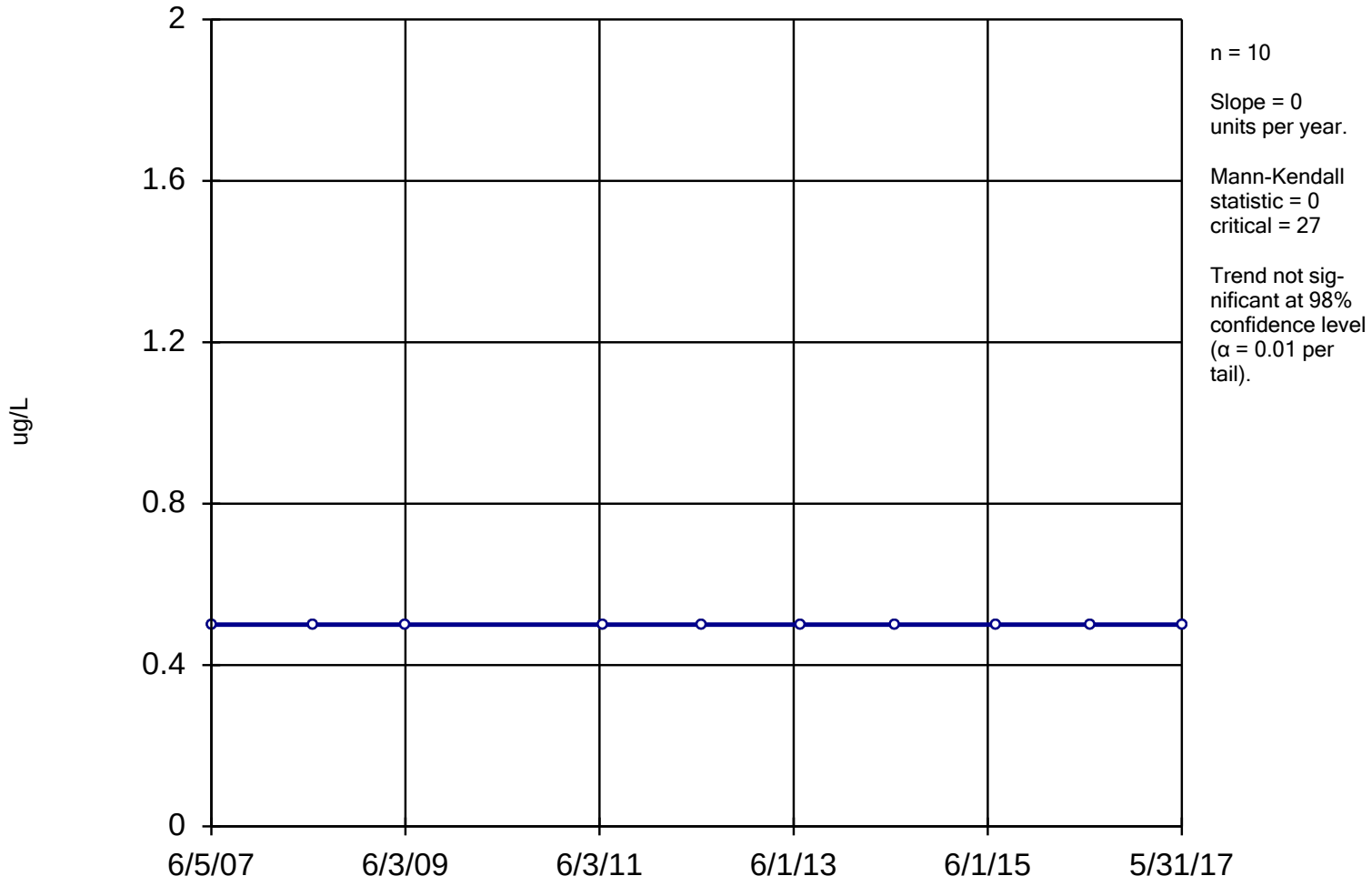
Sen's Slope Estimator

B-9D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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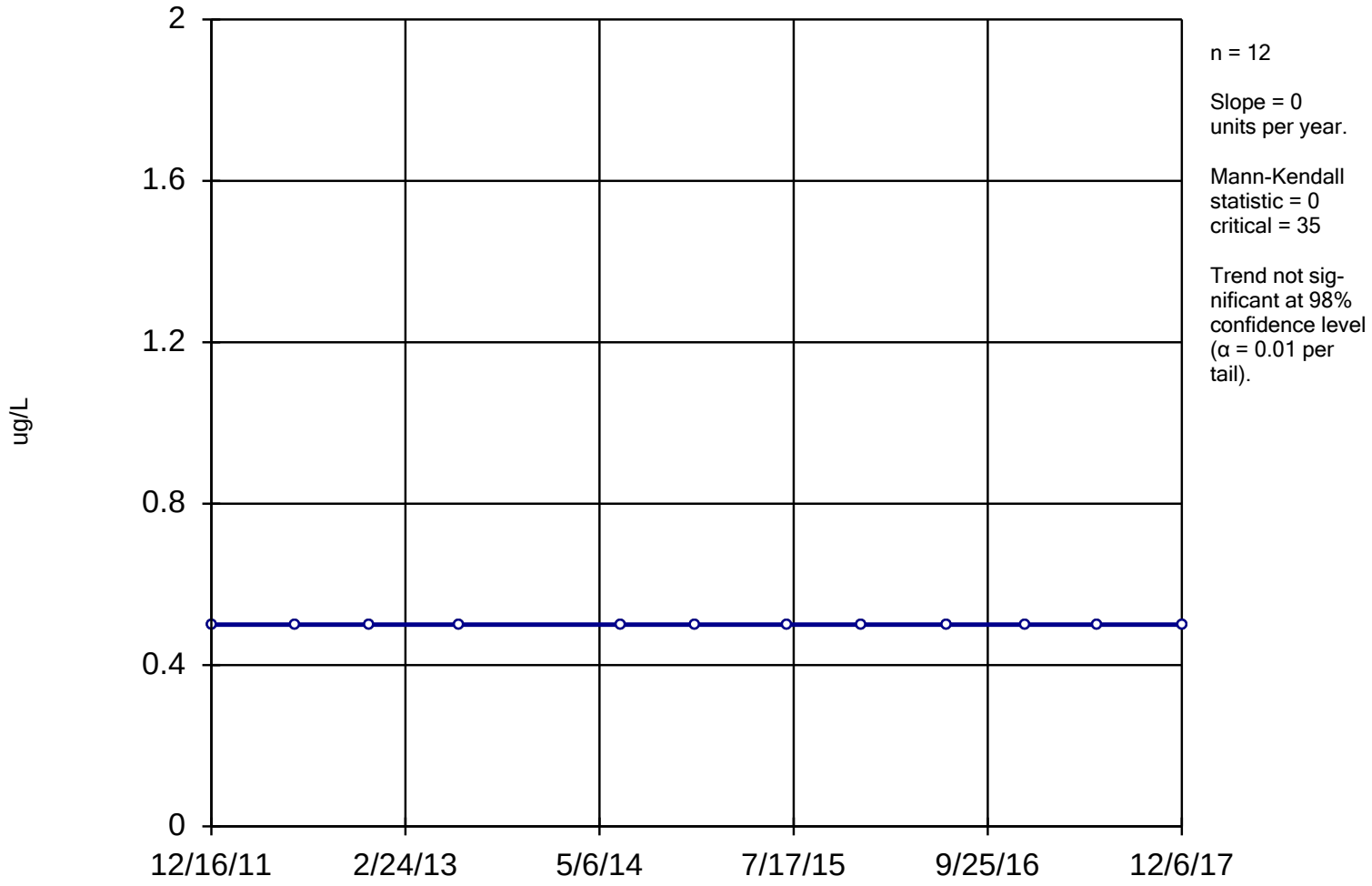
Sen's Slope Estimator

B-9S



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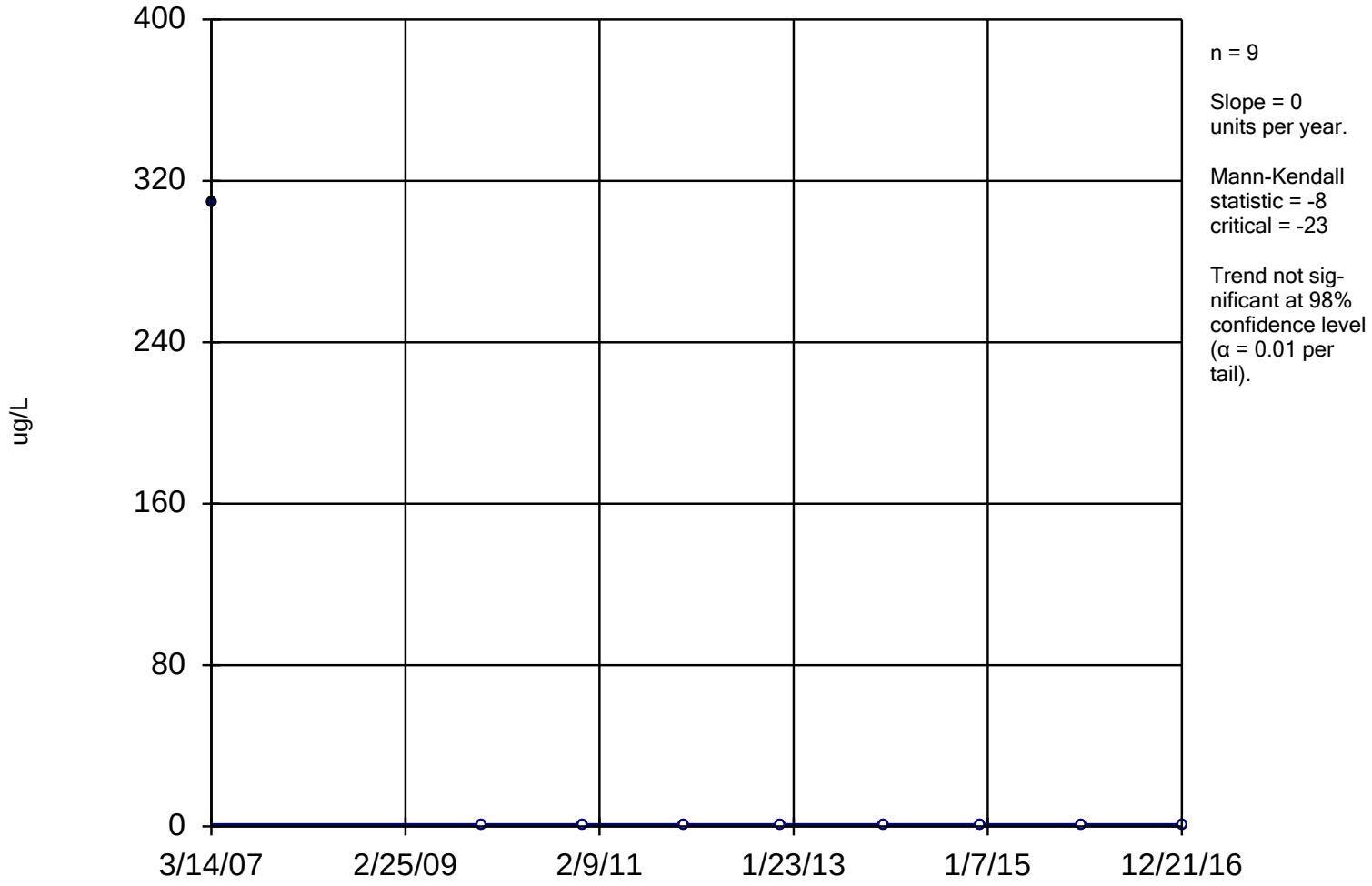
Sen's Slope Estimator

B-10S



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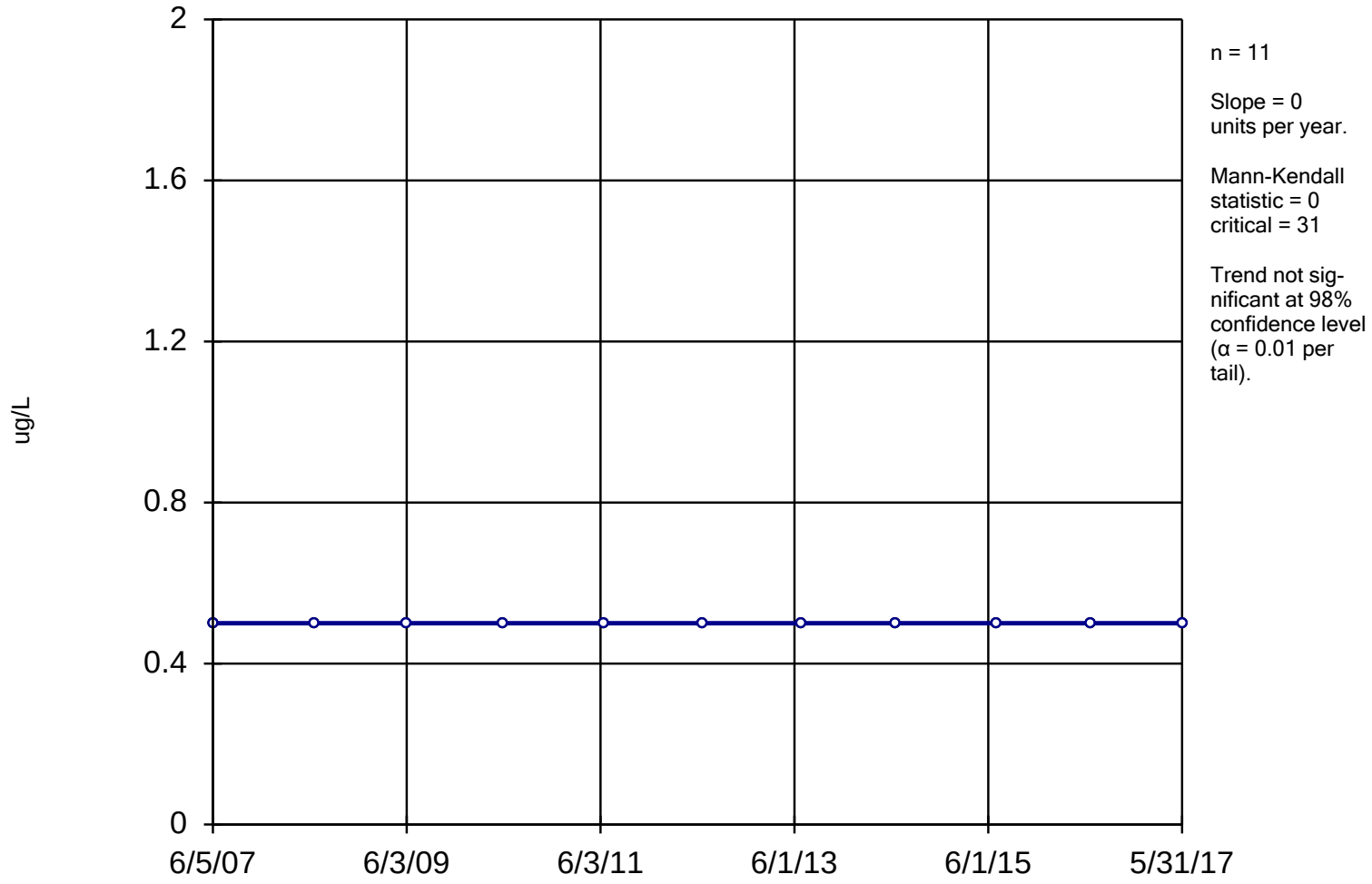
Sen's Slope Estimator

B-11D



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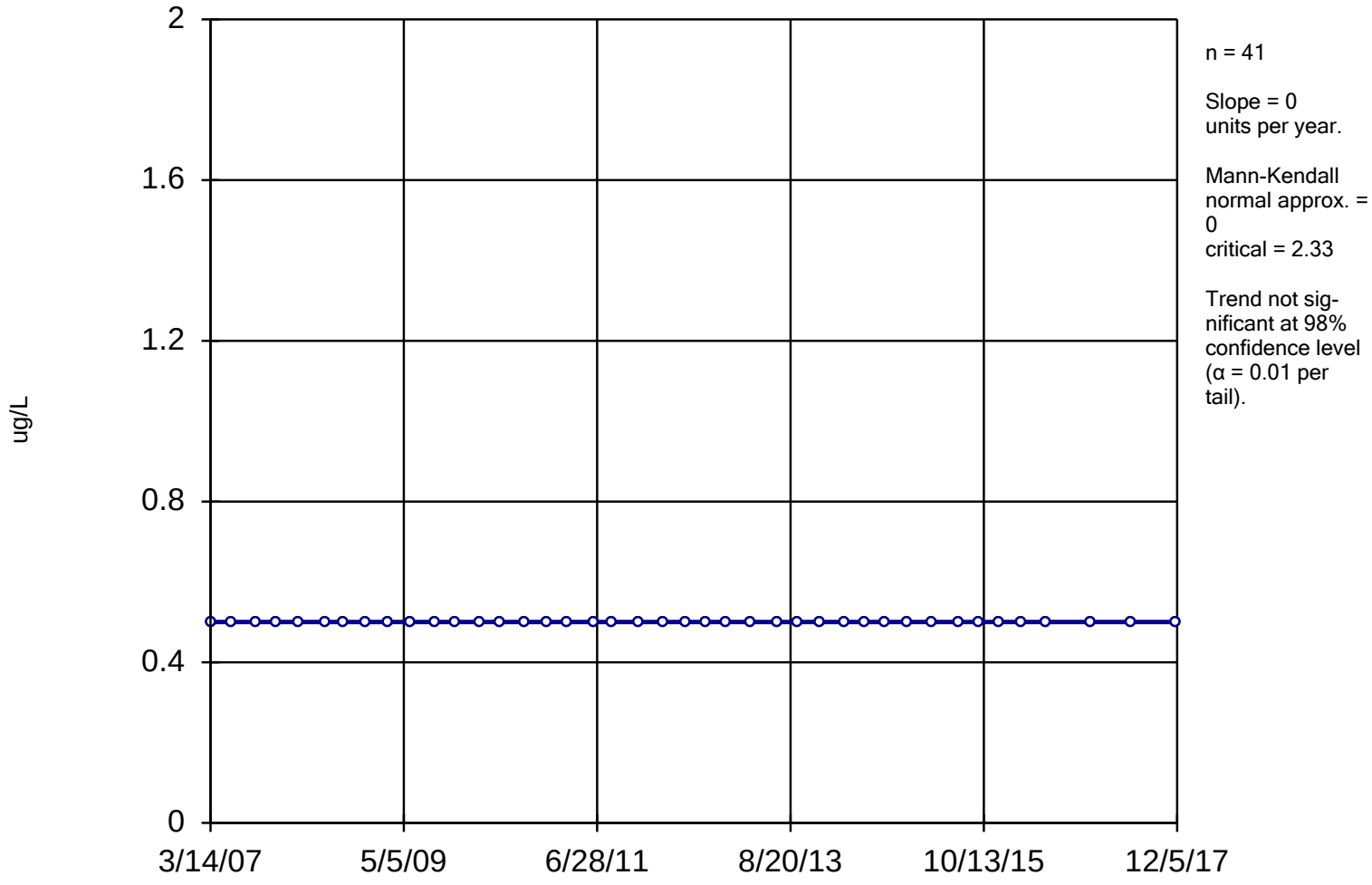
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-13D



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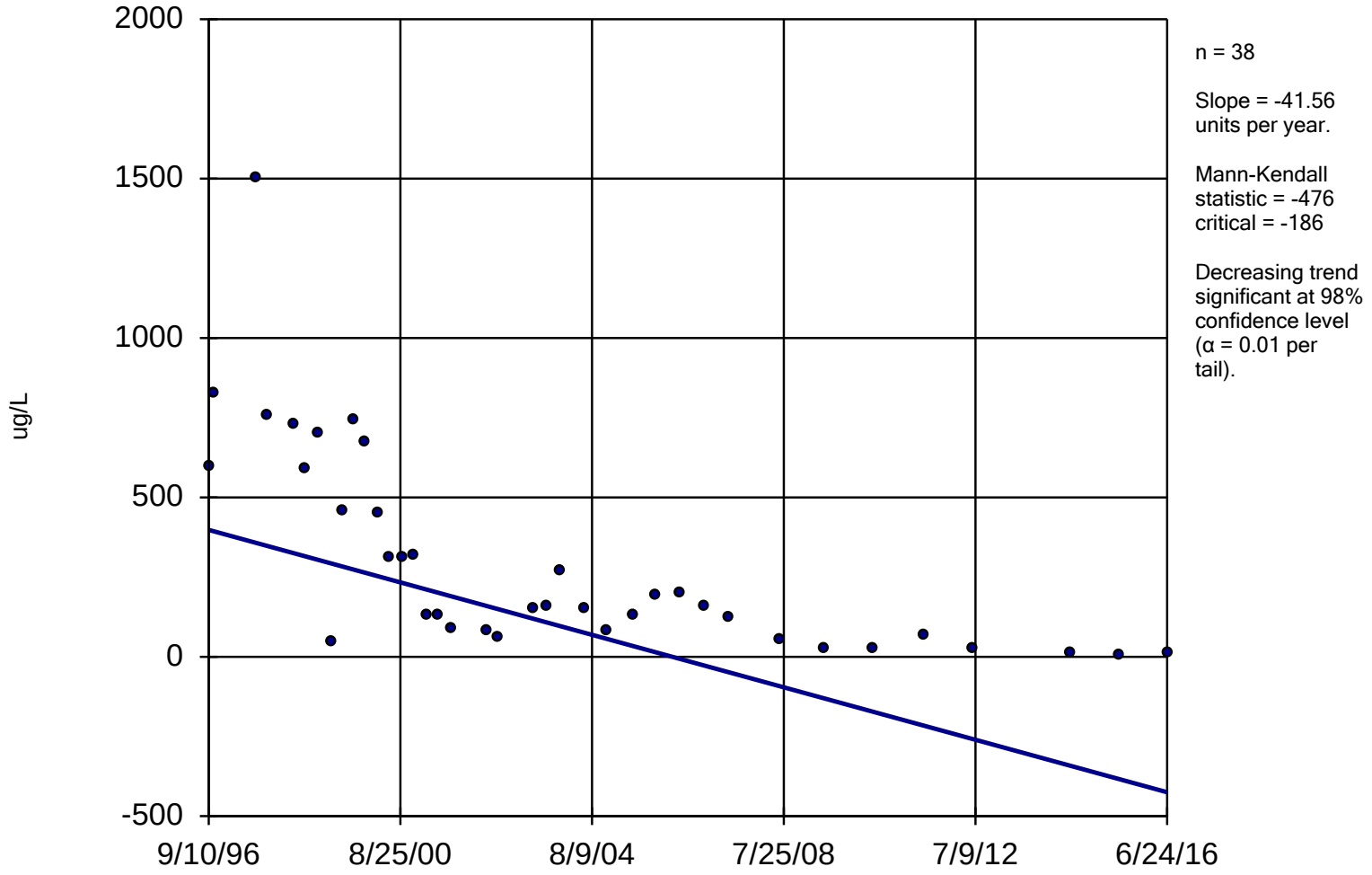
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

B-15



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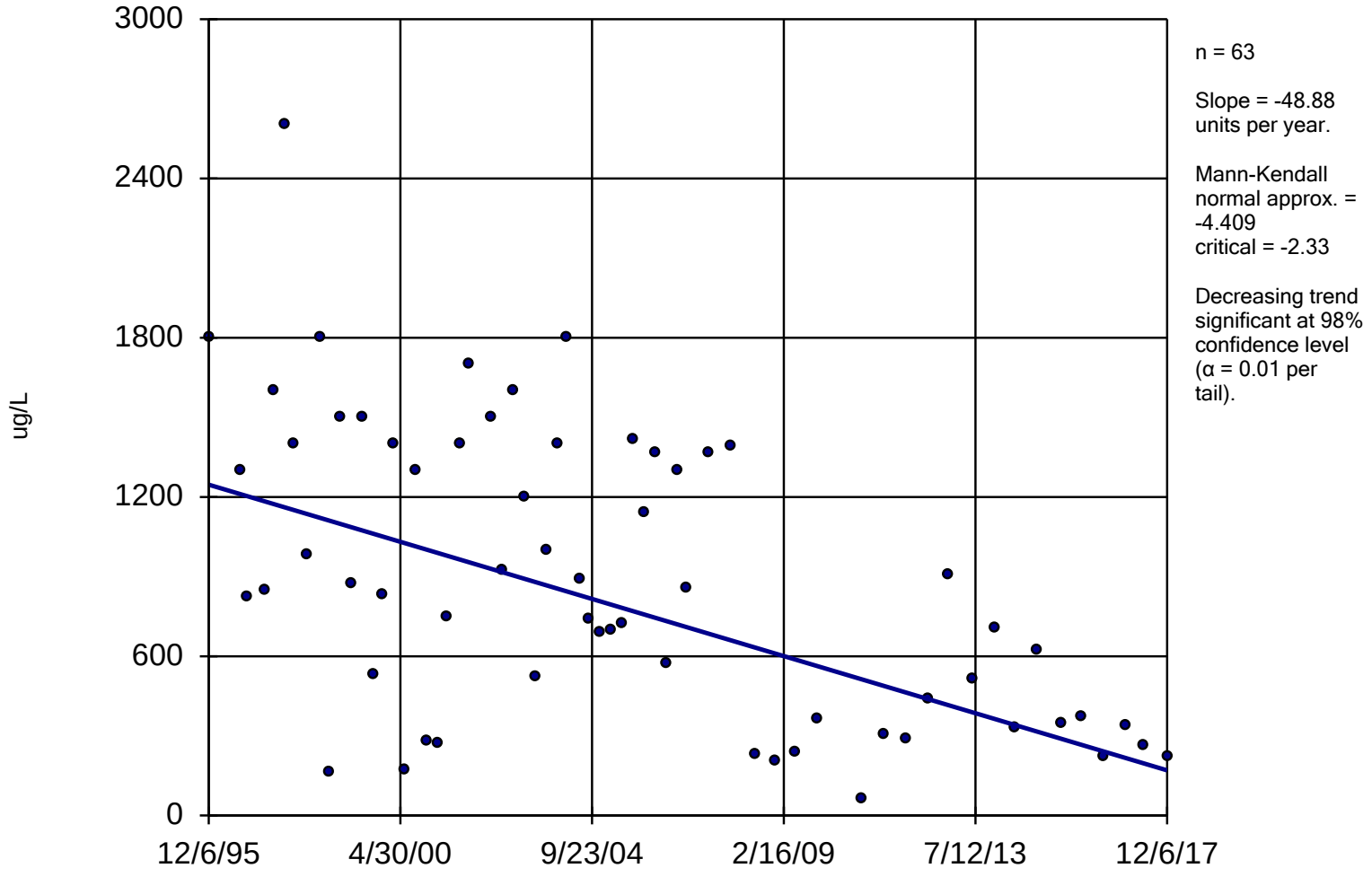
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

B-16



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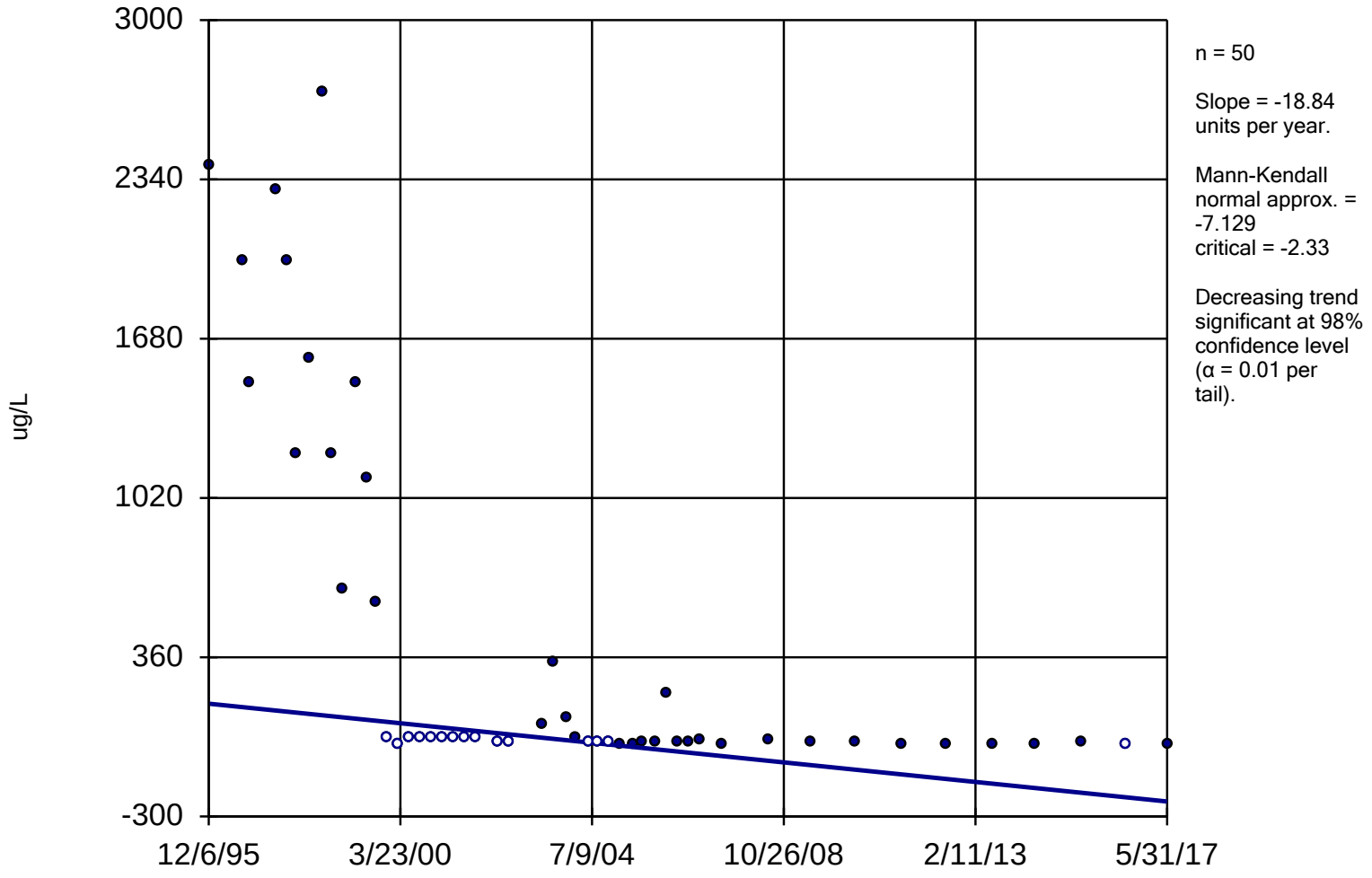
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-17



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Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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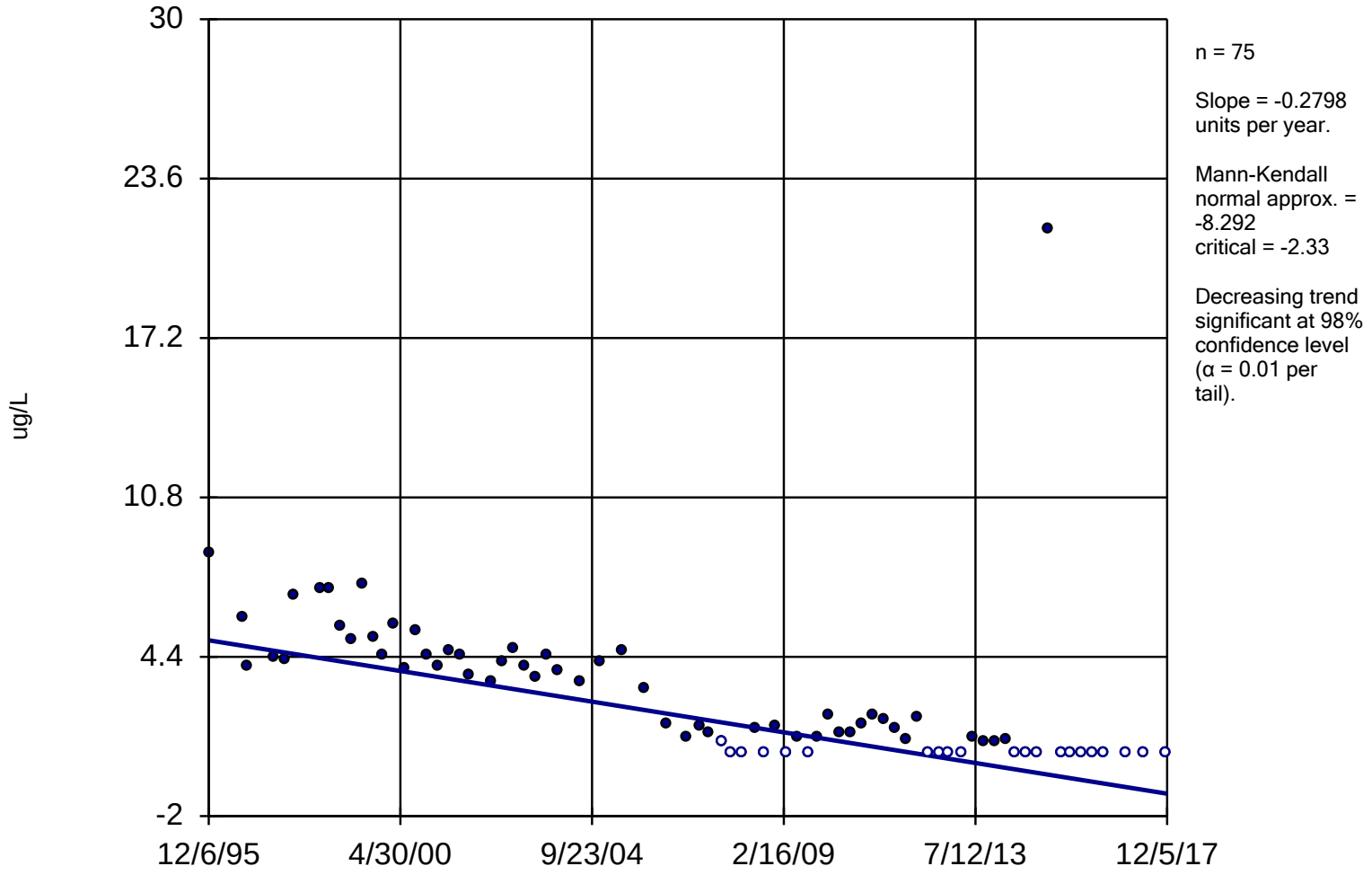
Sen's Slope Estimator

B-18



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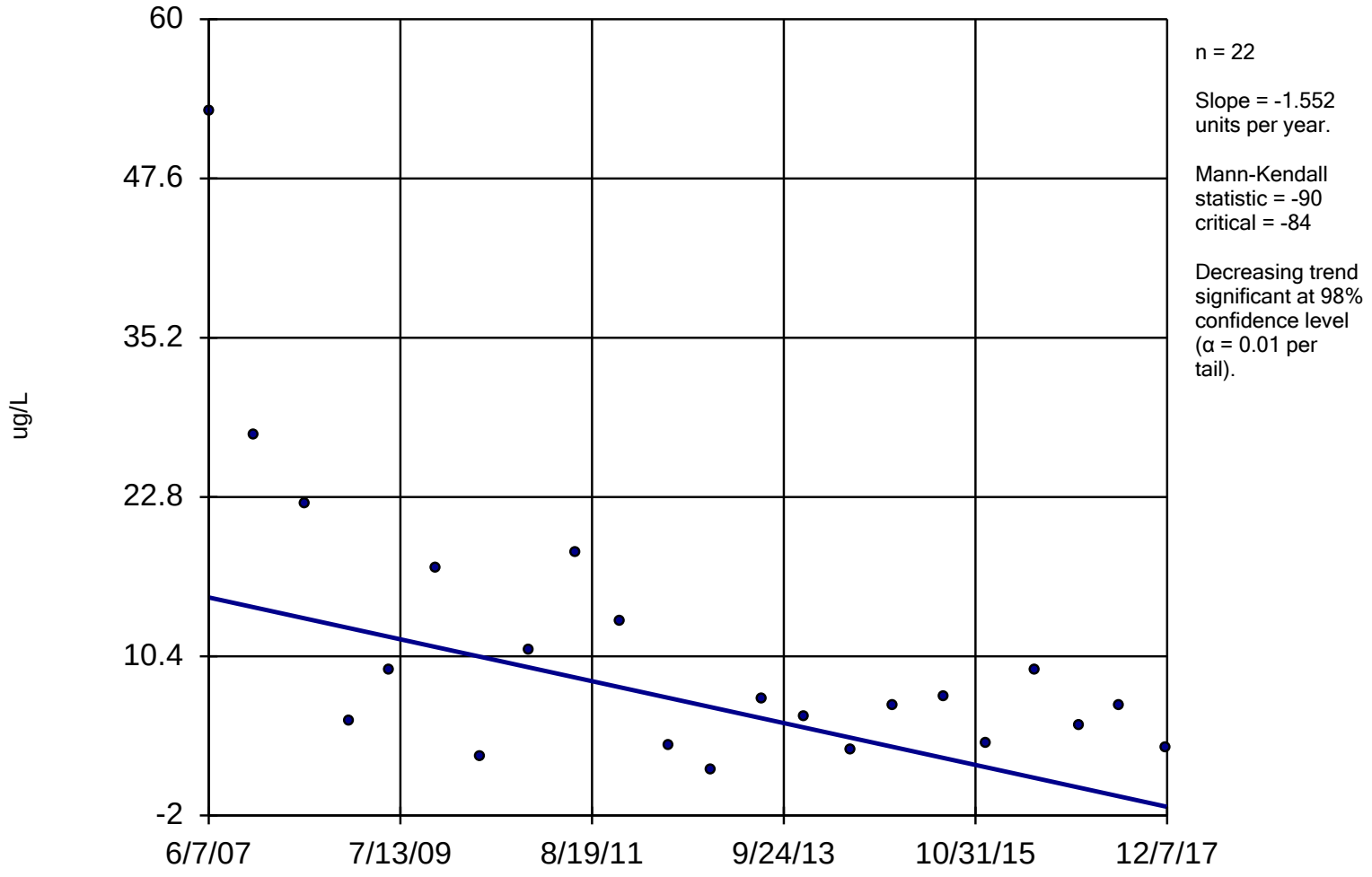
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

B-23I/D



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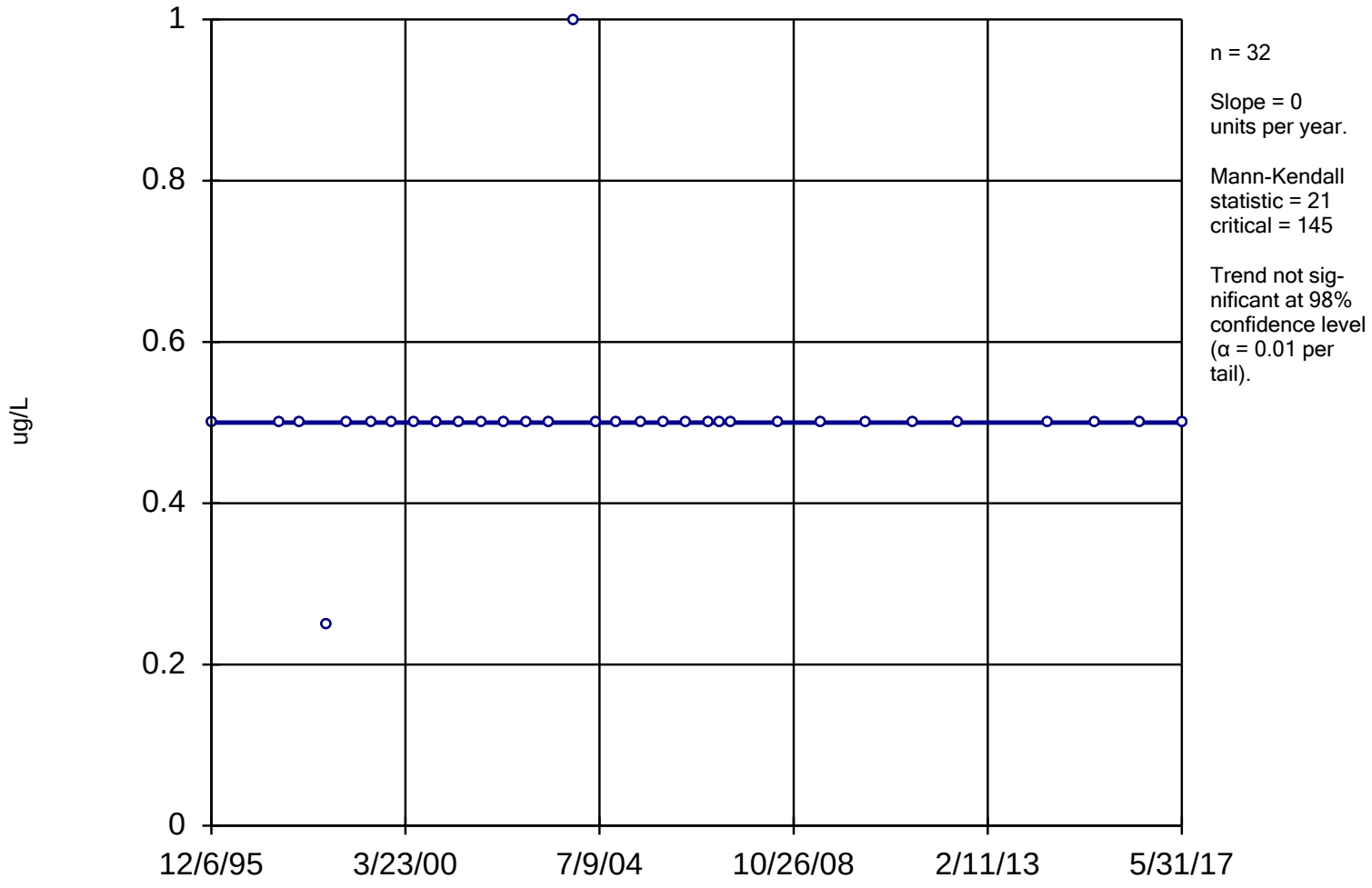
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-24D



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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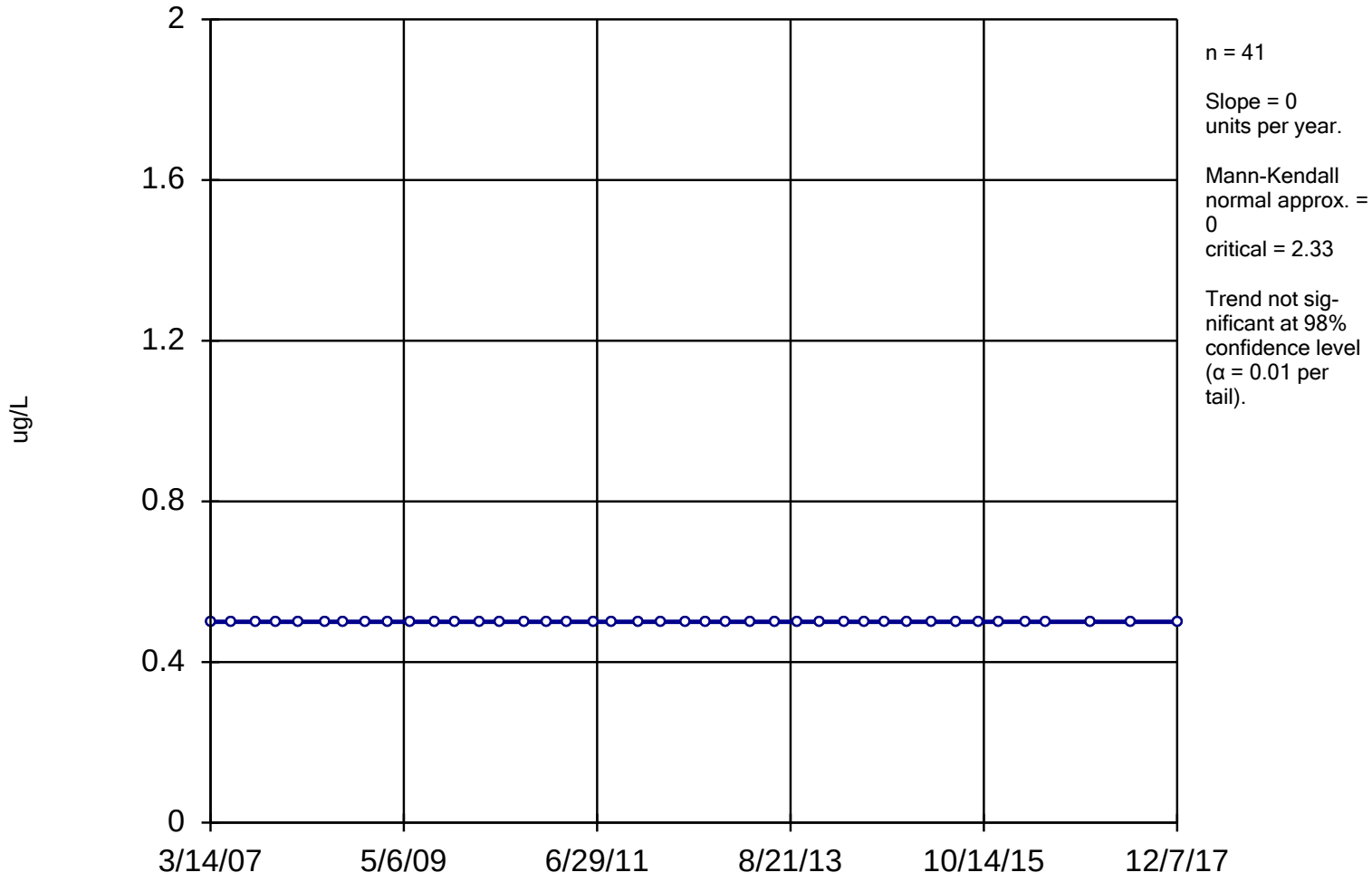
Sen's Slope Estimator

C-1D



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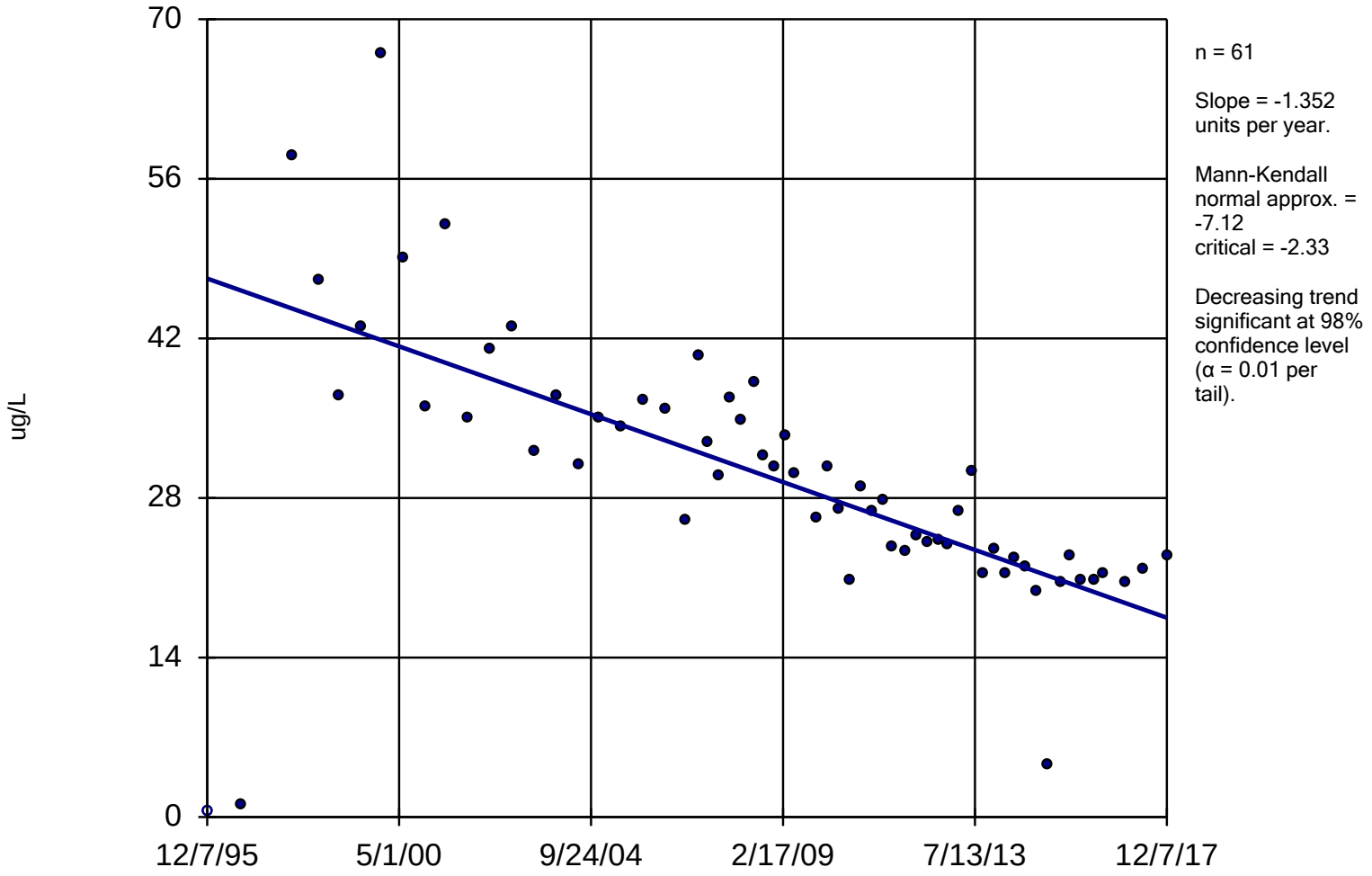
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-1I



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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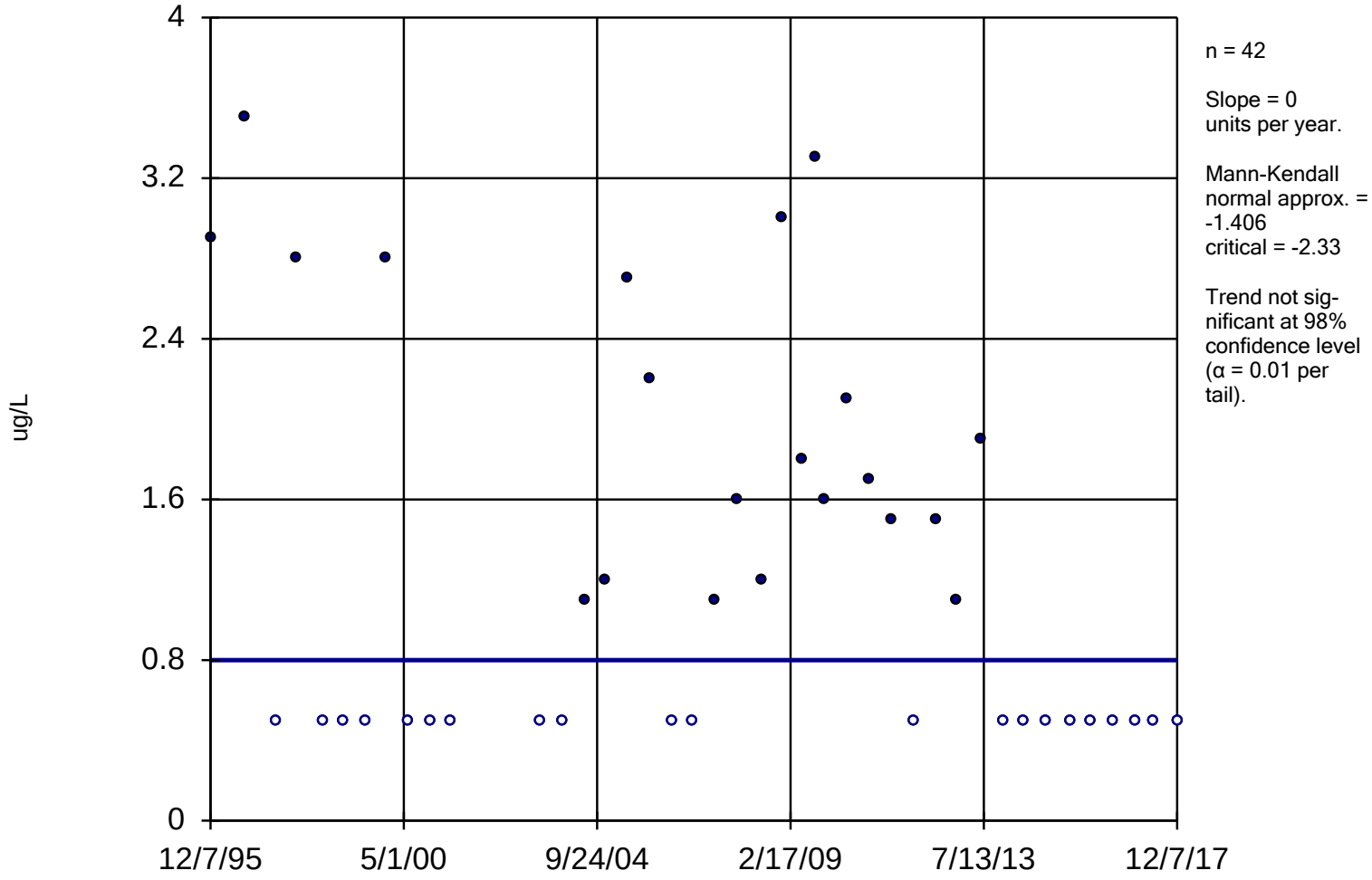
Sen's Slope Estimator

C-1S



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Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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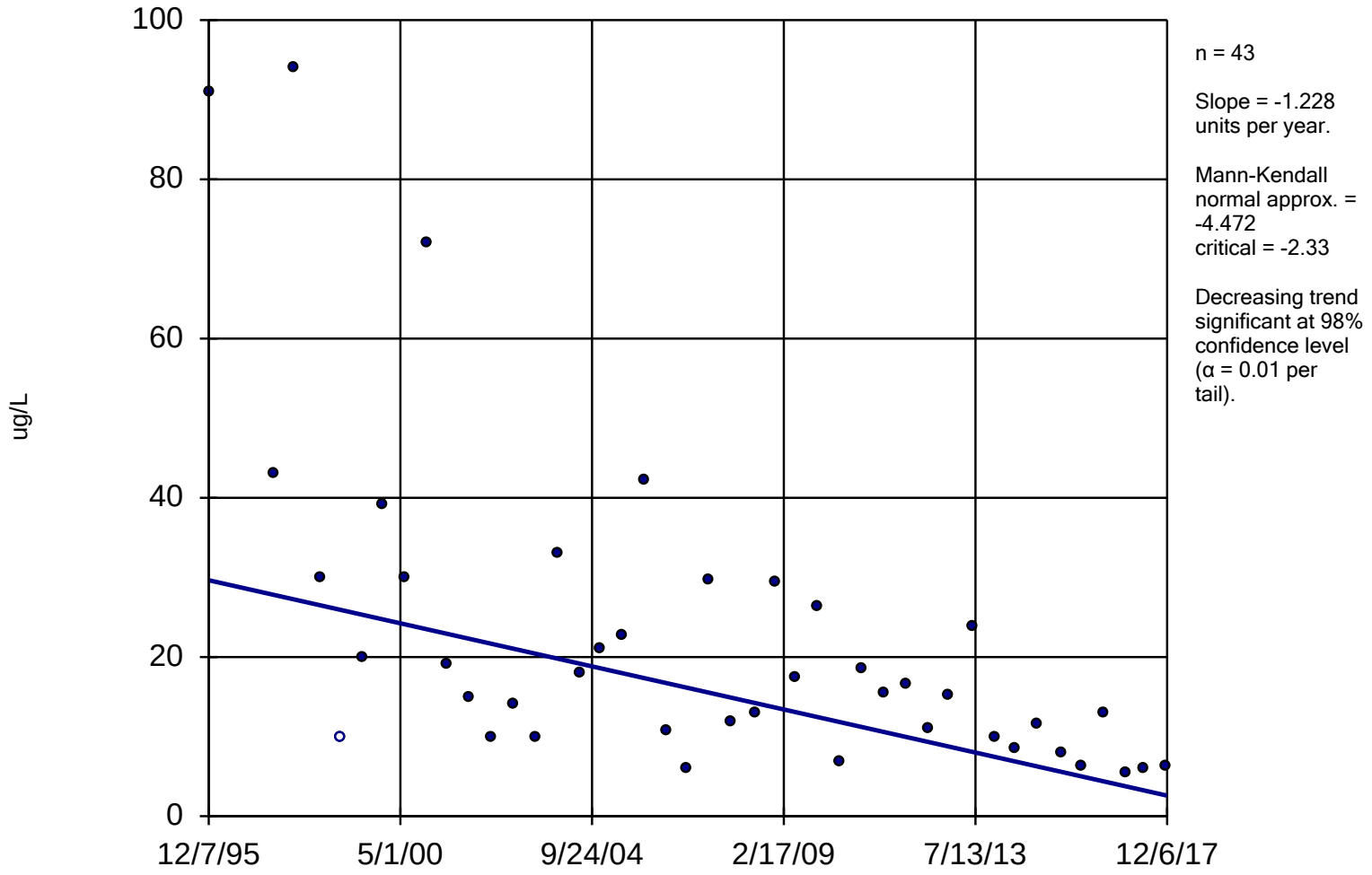
Sen's Slope Estimator

C-2D



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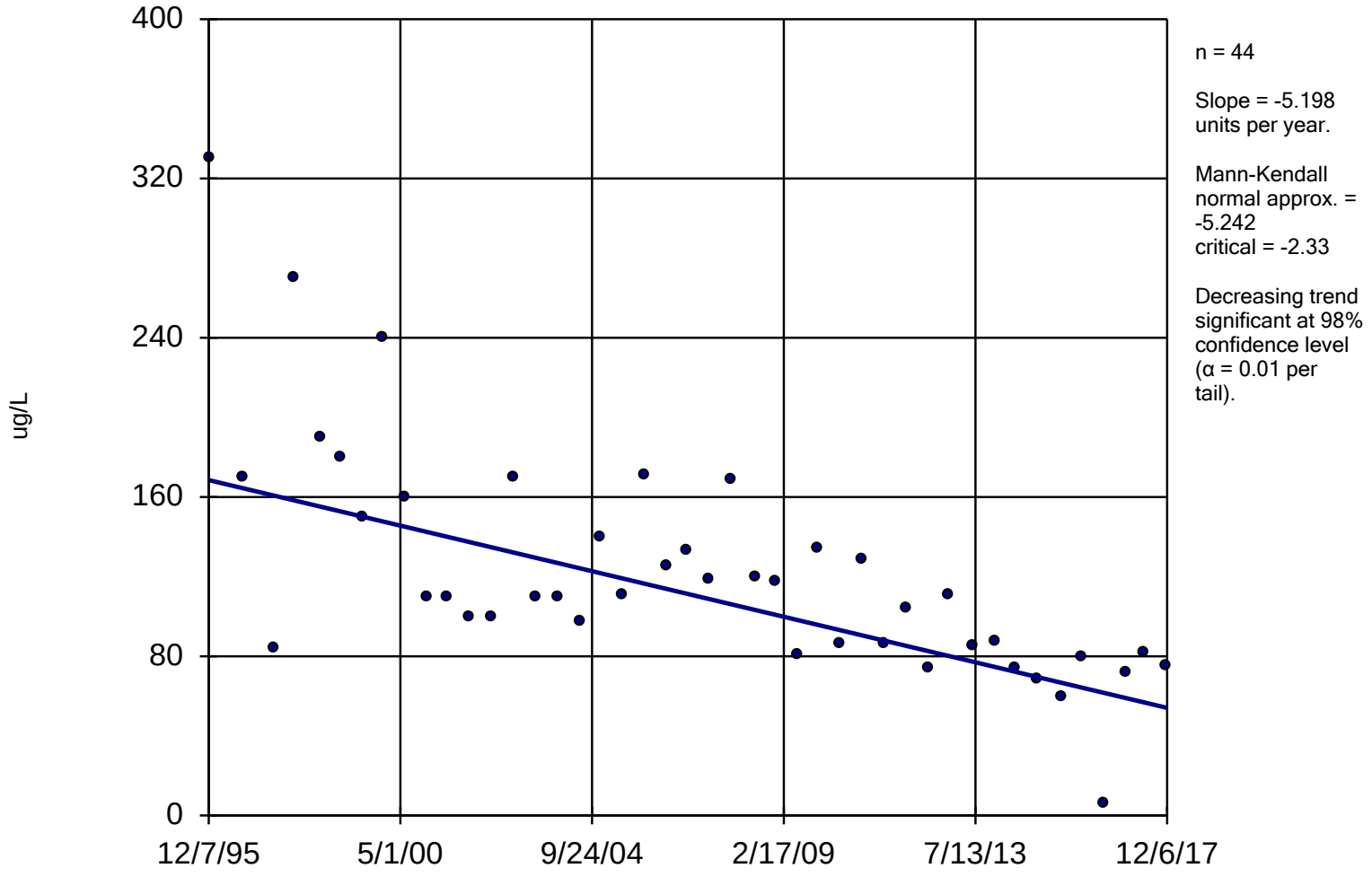
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

C-2I



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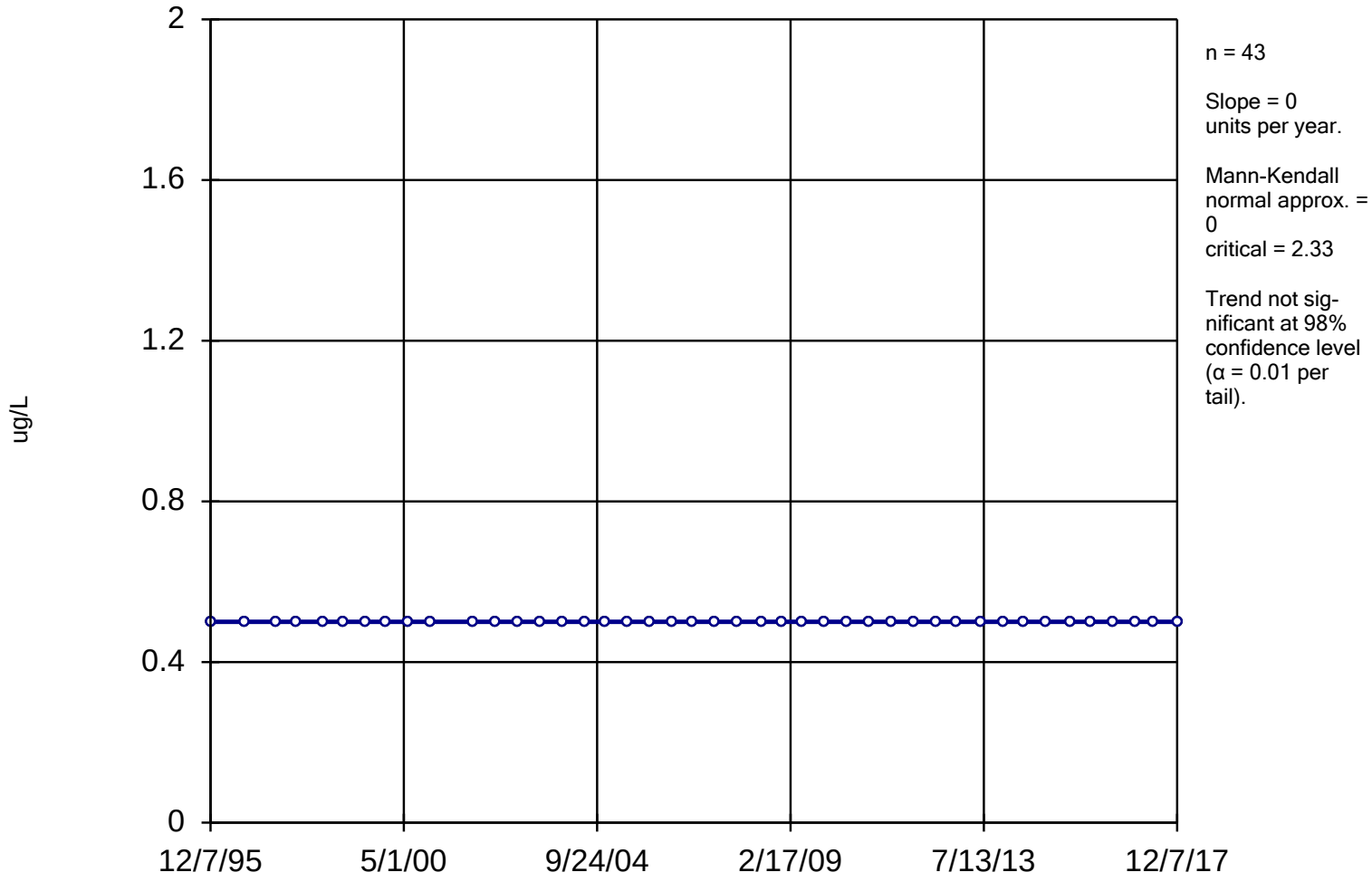
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-2S



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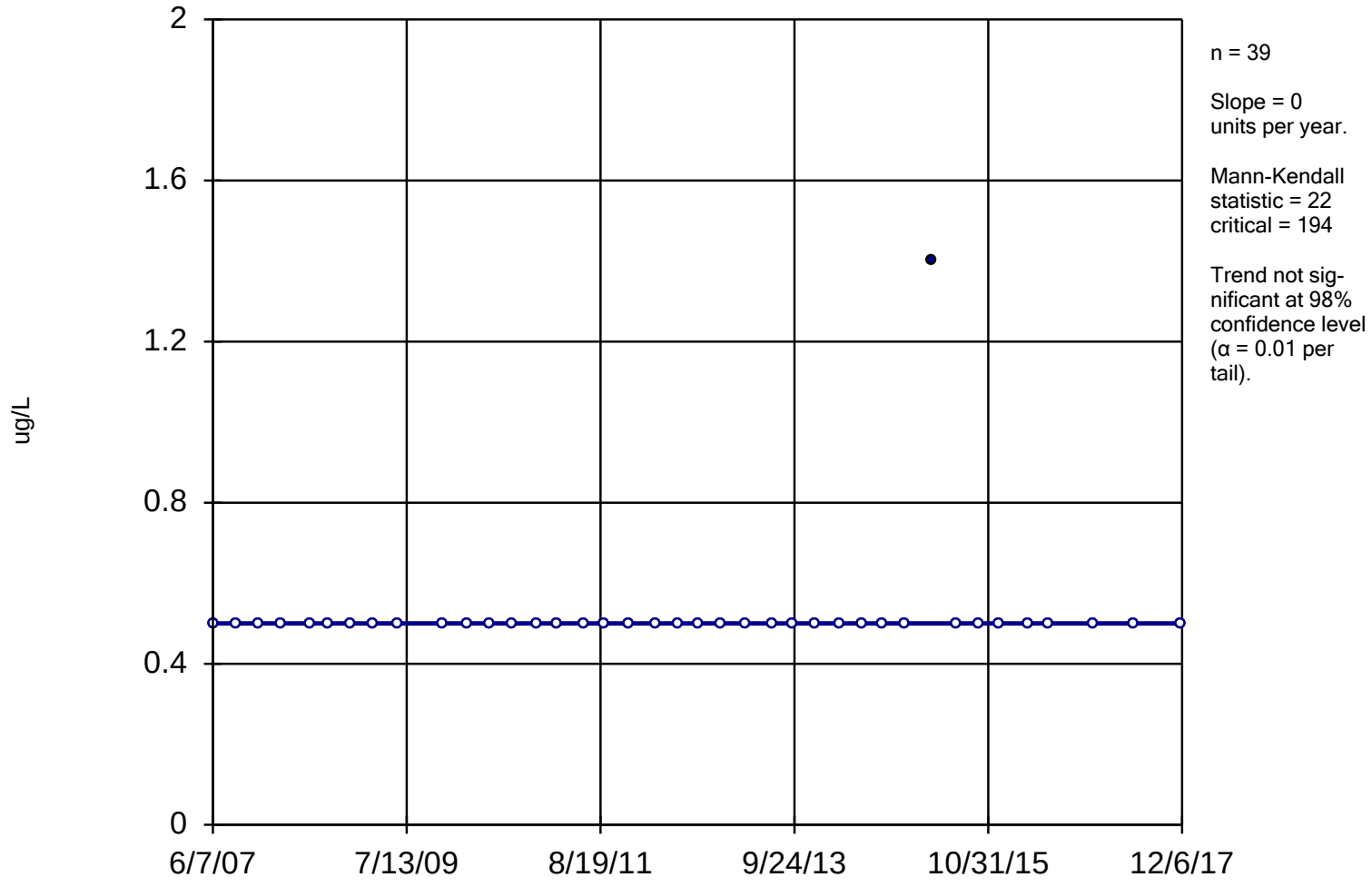
Sen's Slope Estimator

C-3D



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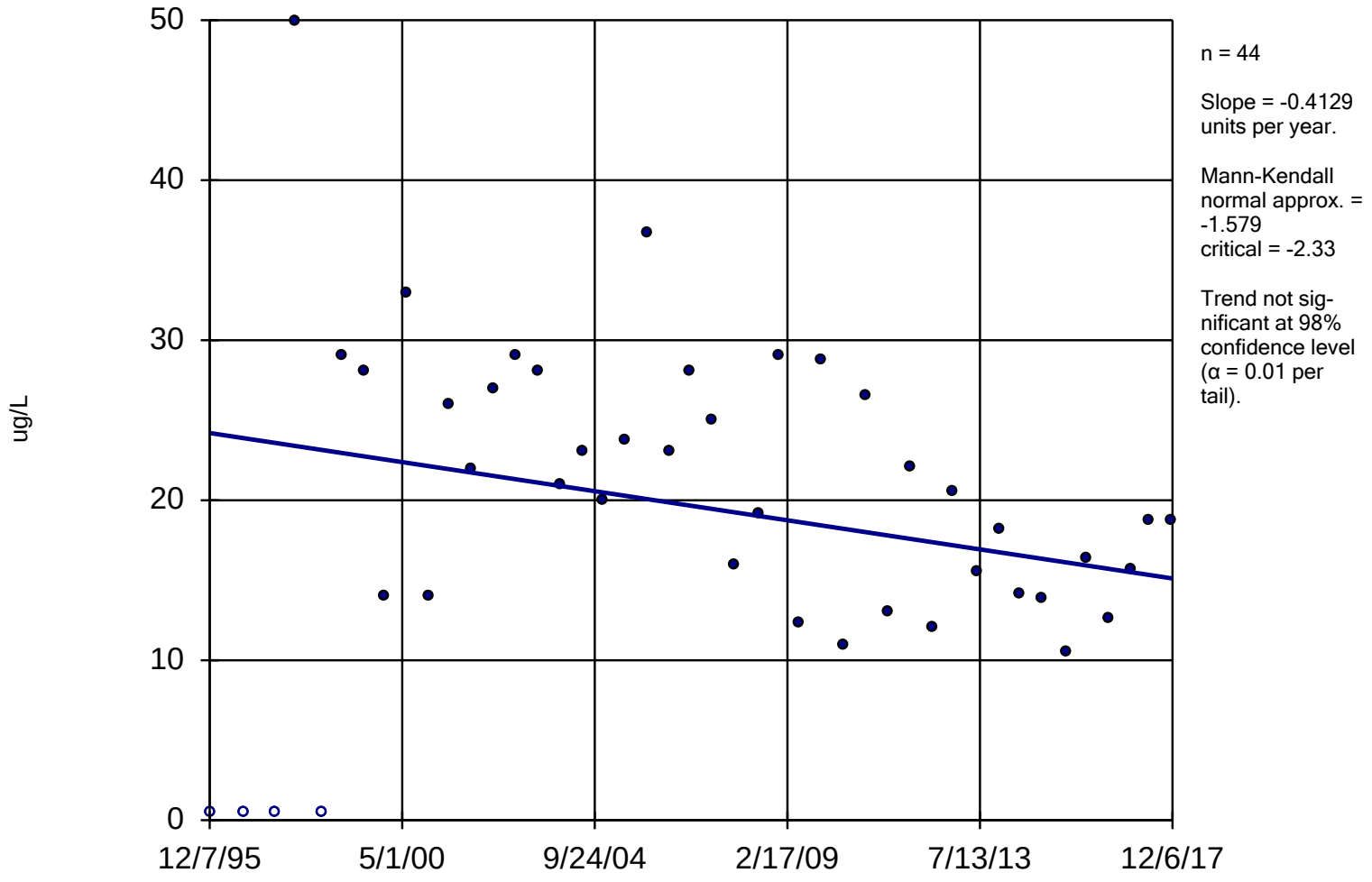
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-3I



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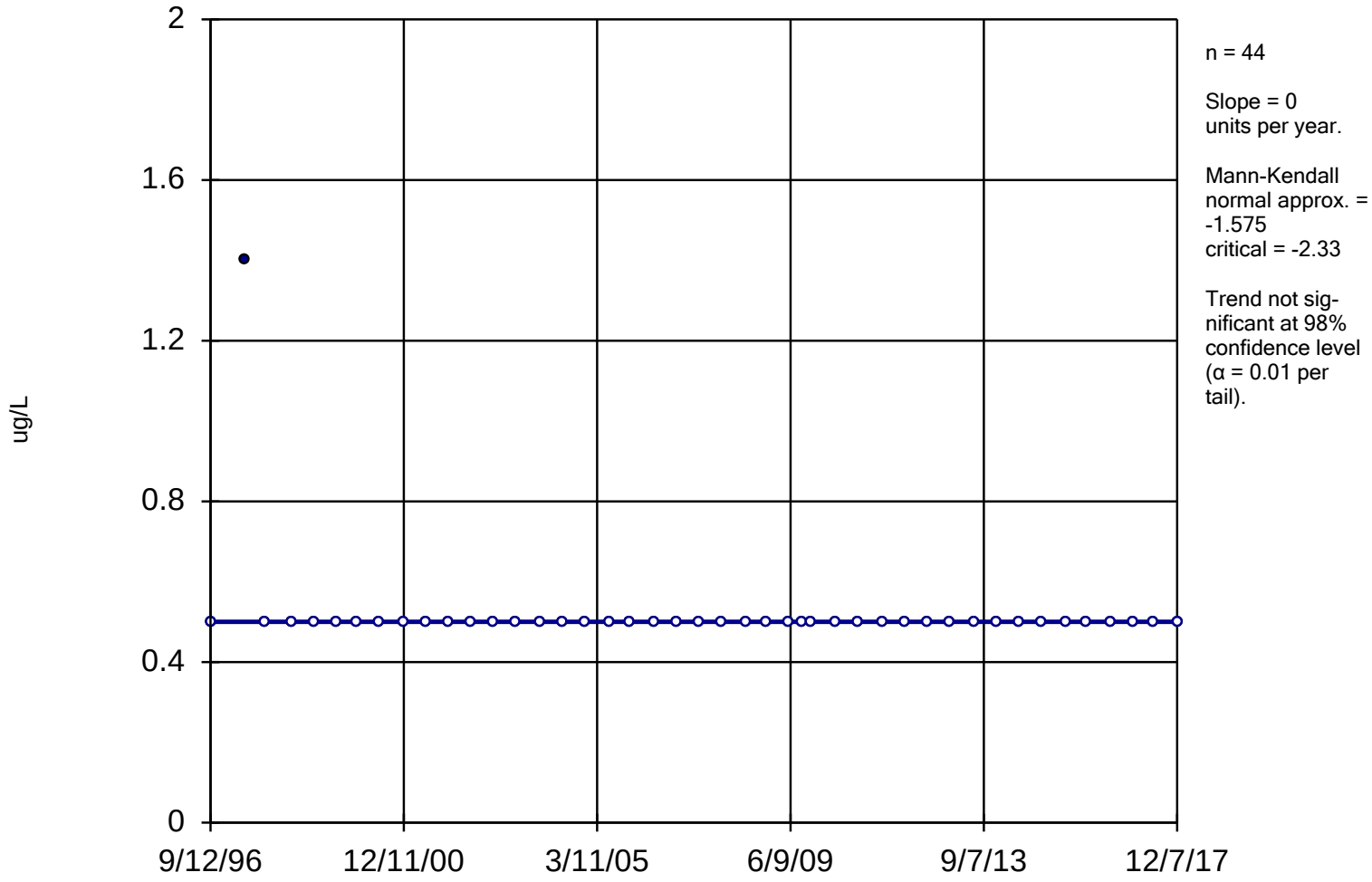
Sen's Slope Estimator

C-3S



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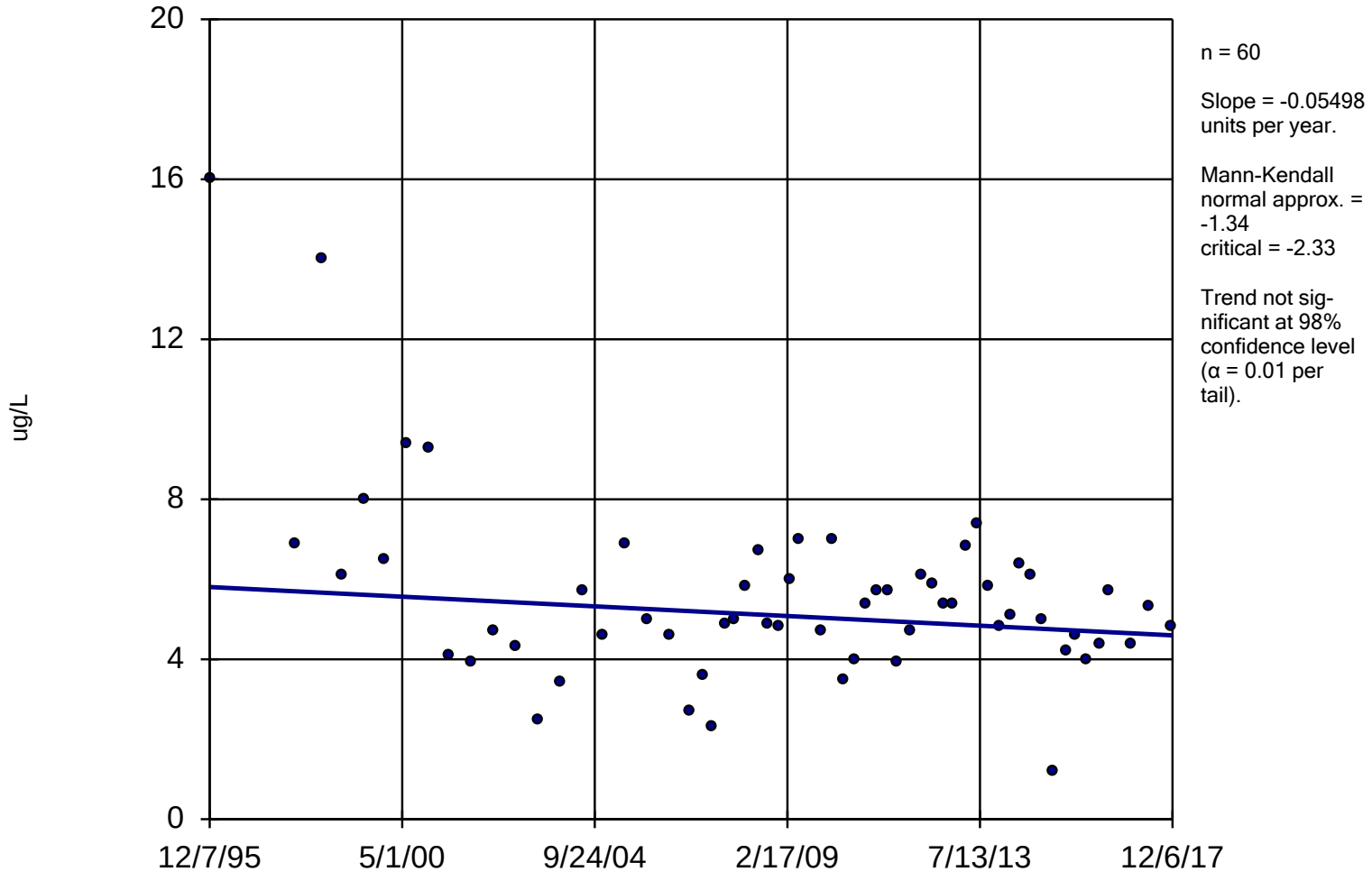
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

C-6



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Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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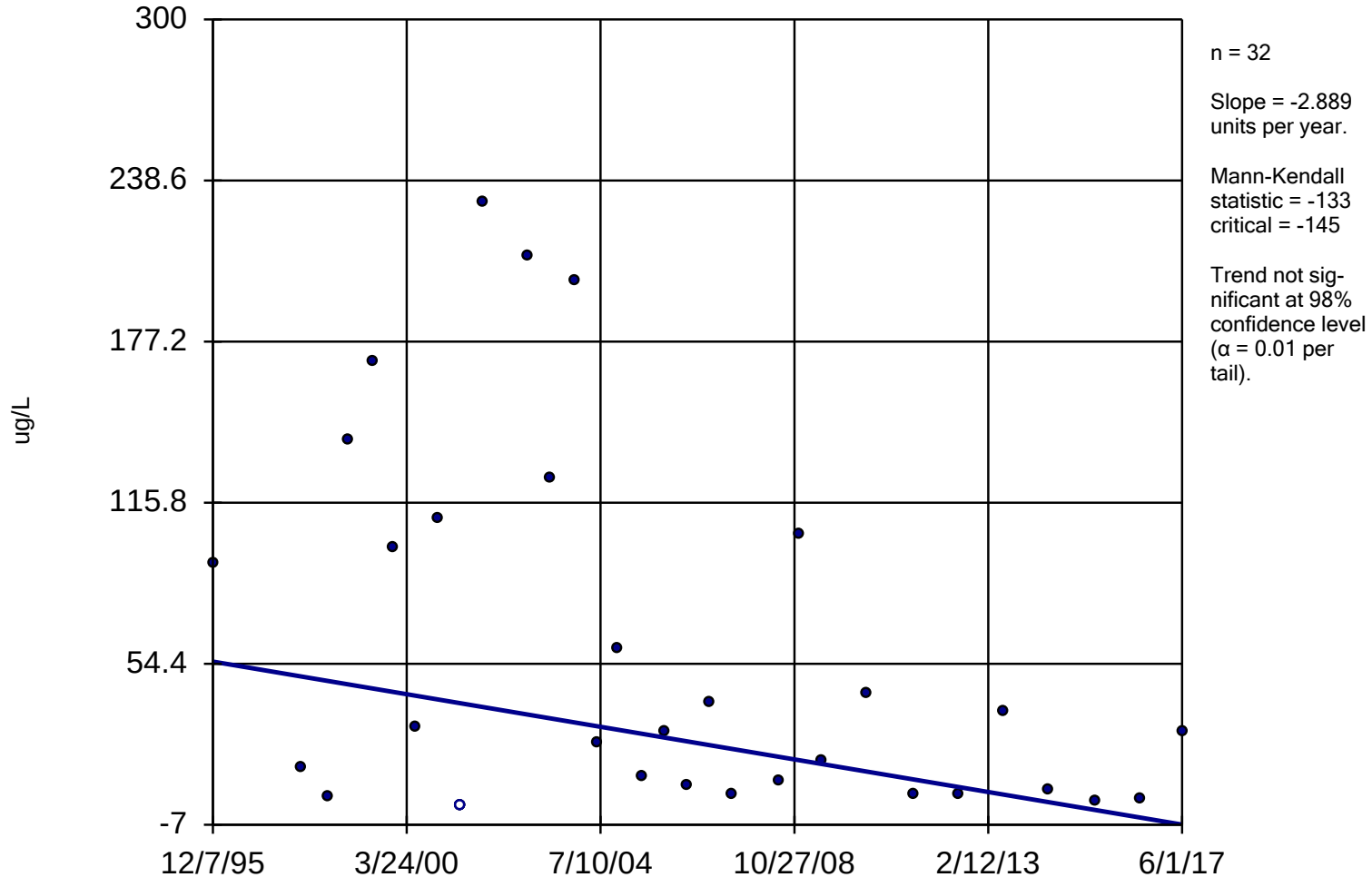
Sen's Slope Estimator

C-7



Constituent: TCE Analysis Run 12/28/2018 10:51 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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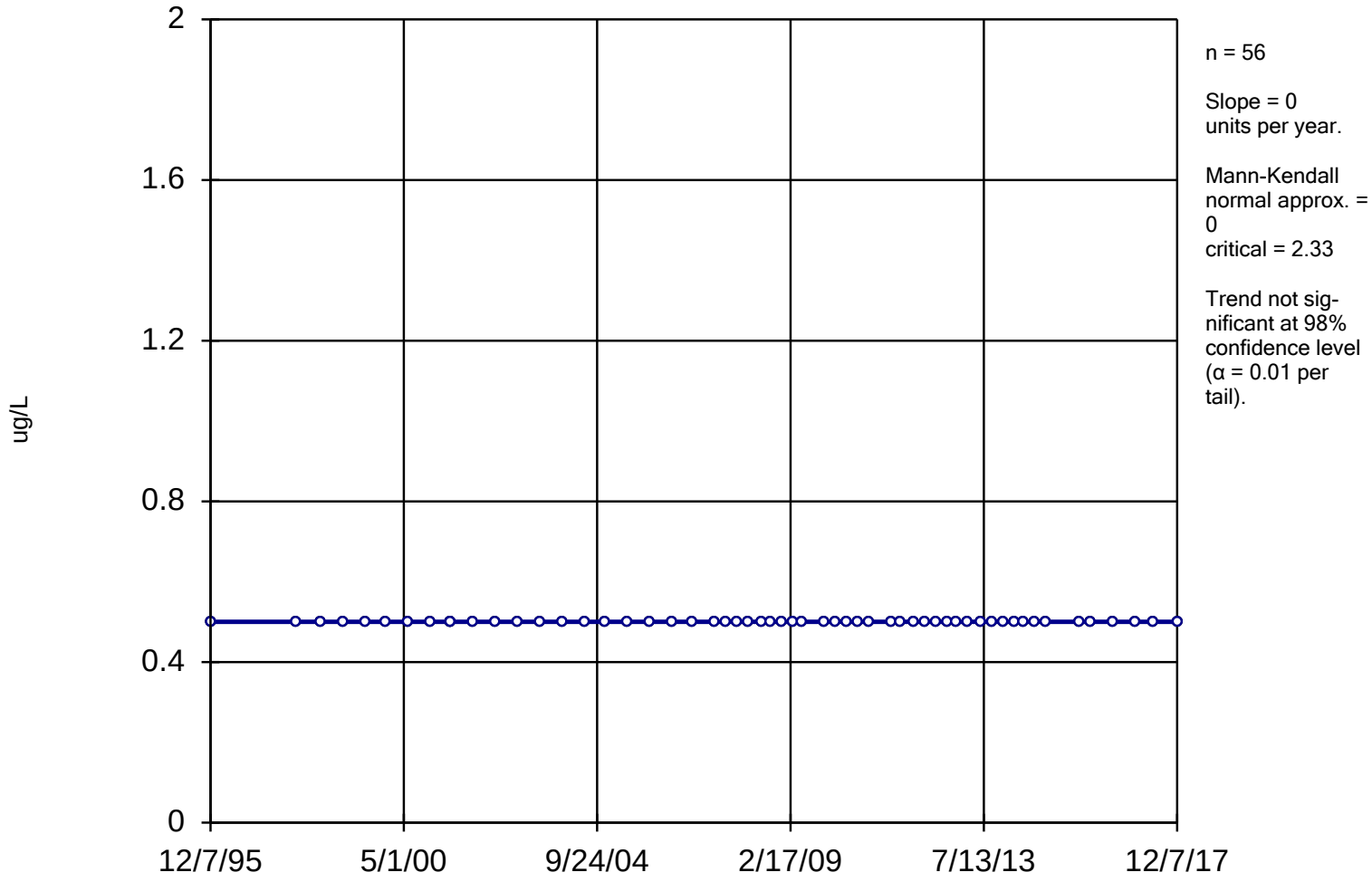
Sen's Slope Estimator

C-8



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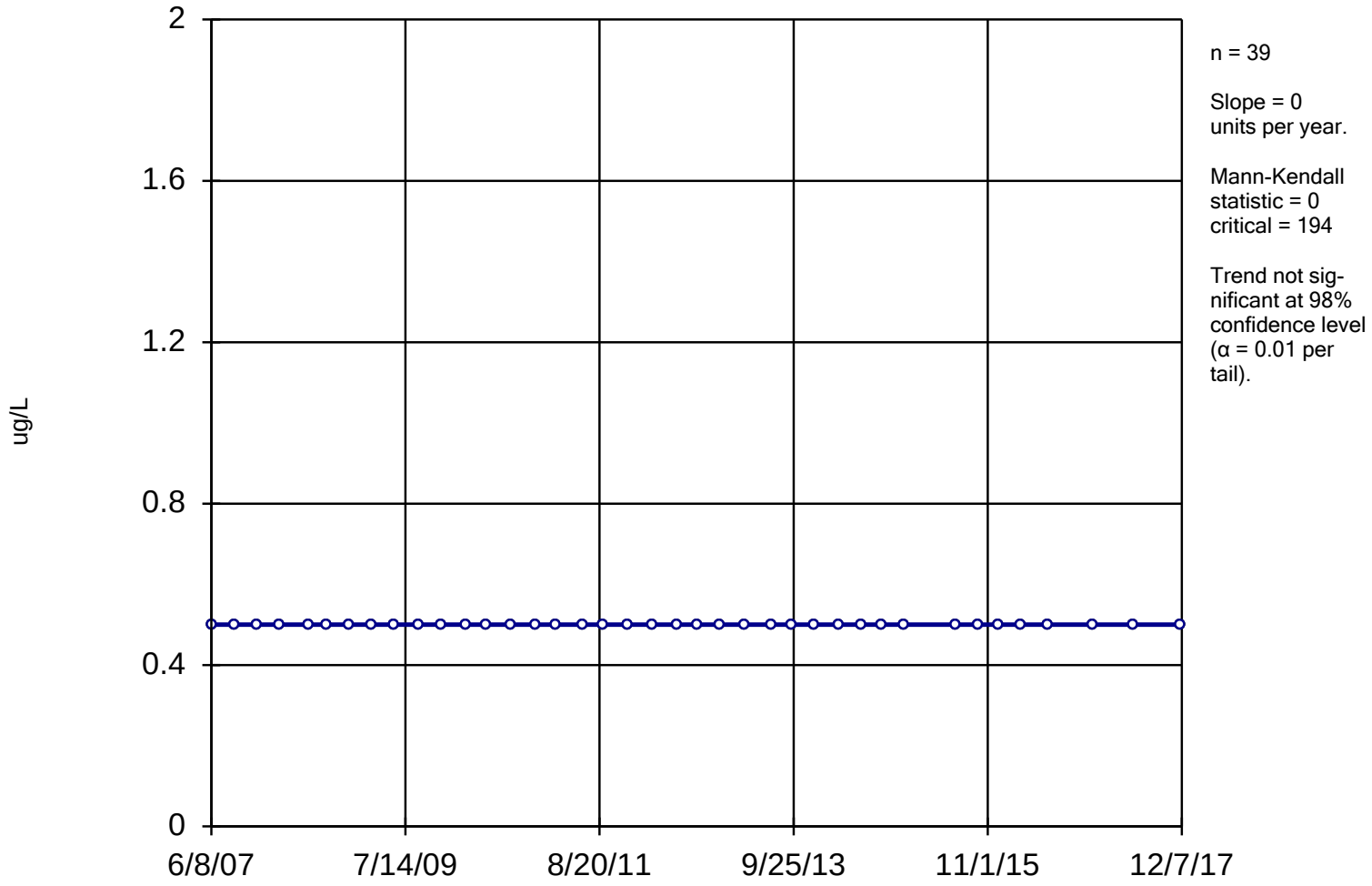
Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

C-9



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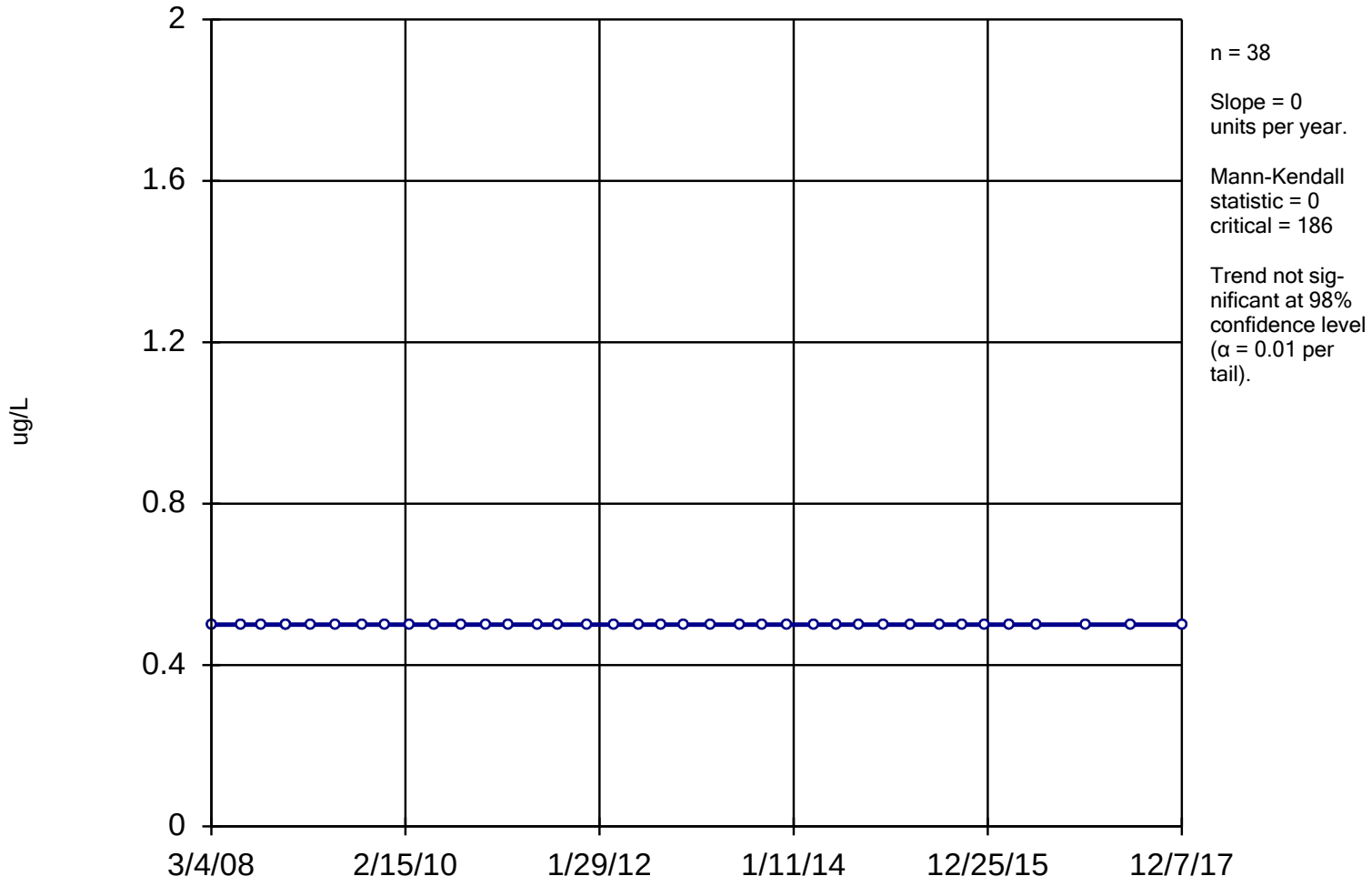
Sen's Slope Estimator

C-10D



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Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
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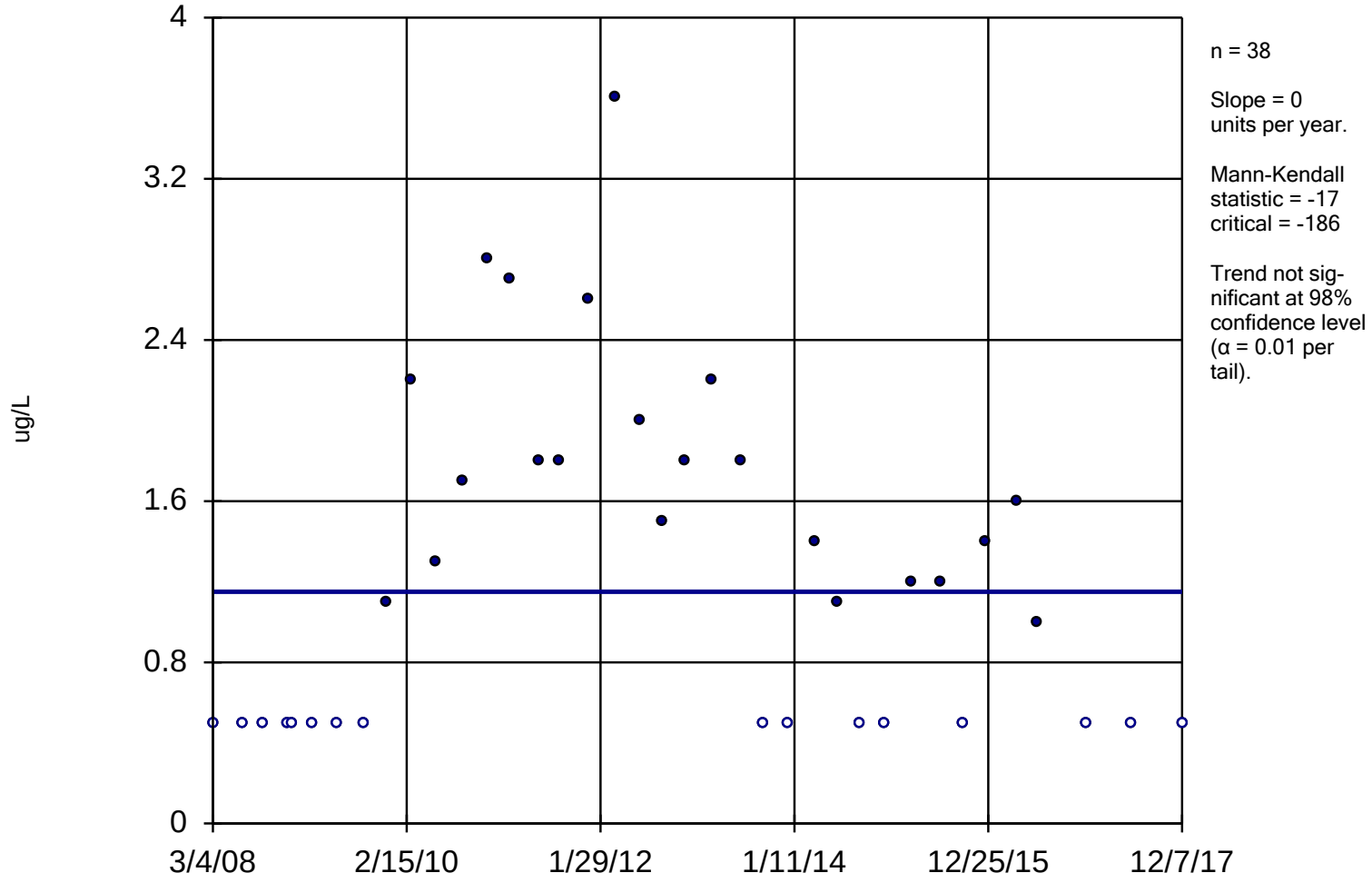
Sen's Slope Estimator

C-11I



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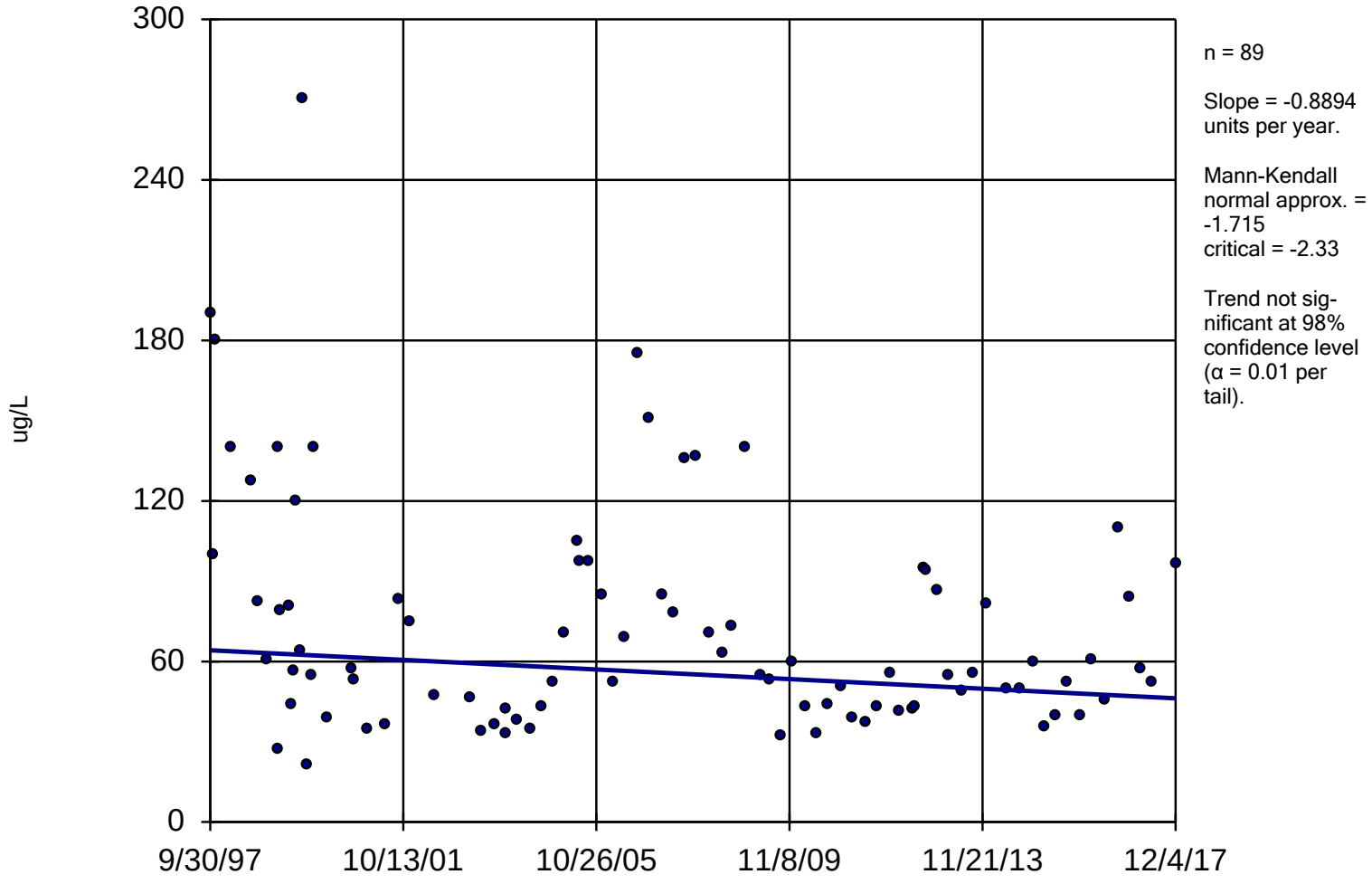
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

I-1



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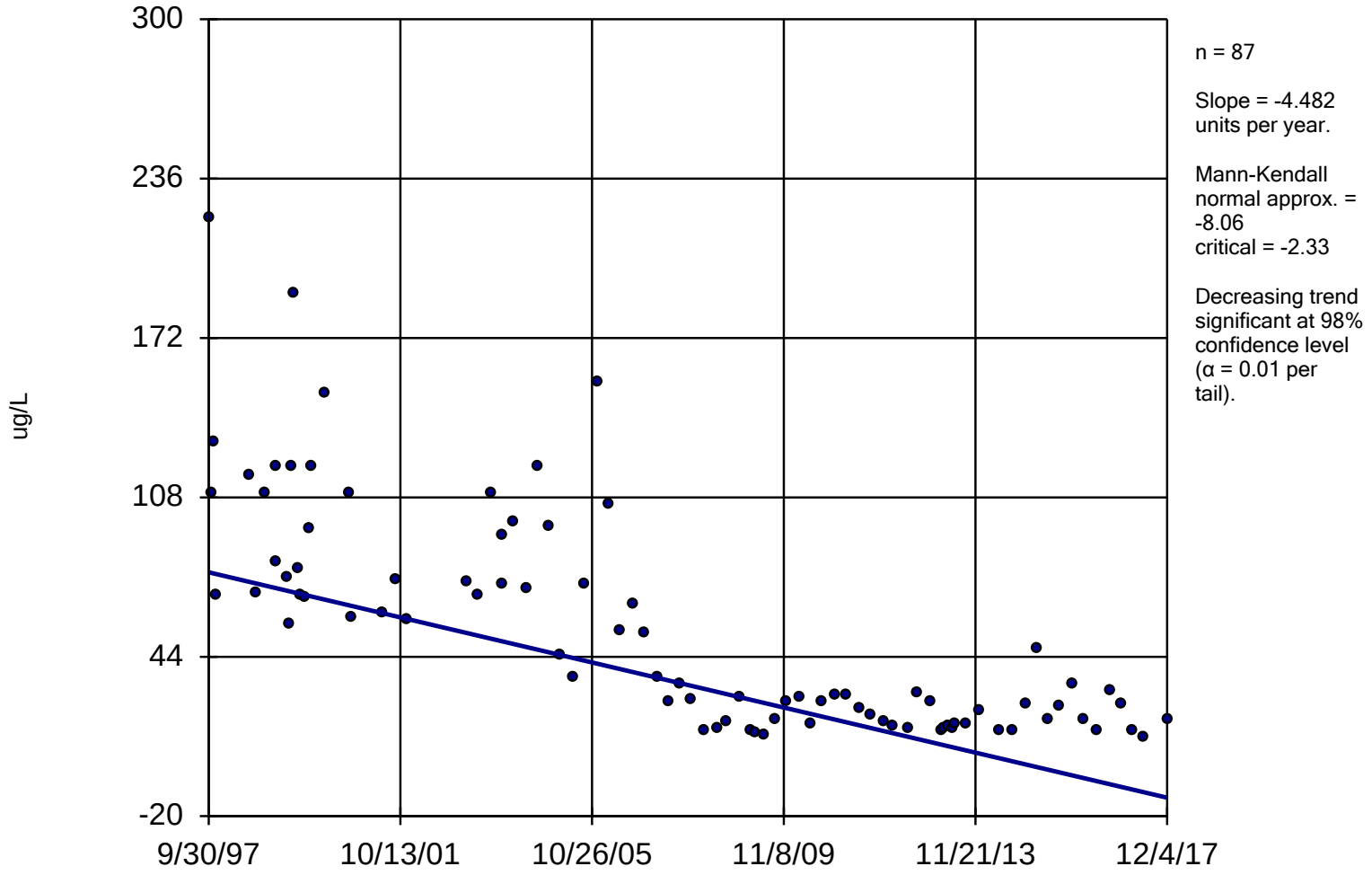
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

I-2



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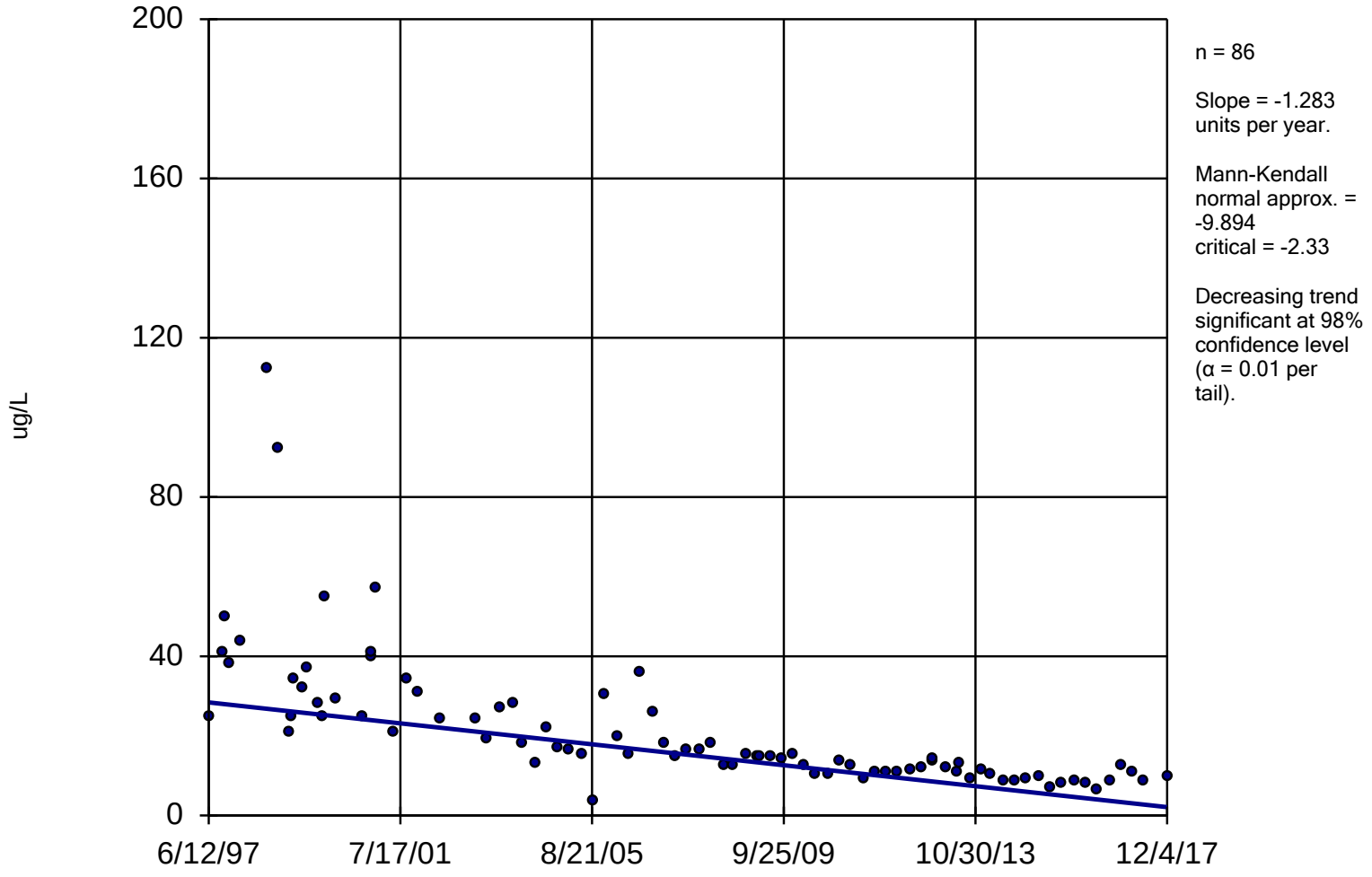
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

I-3



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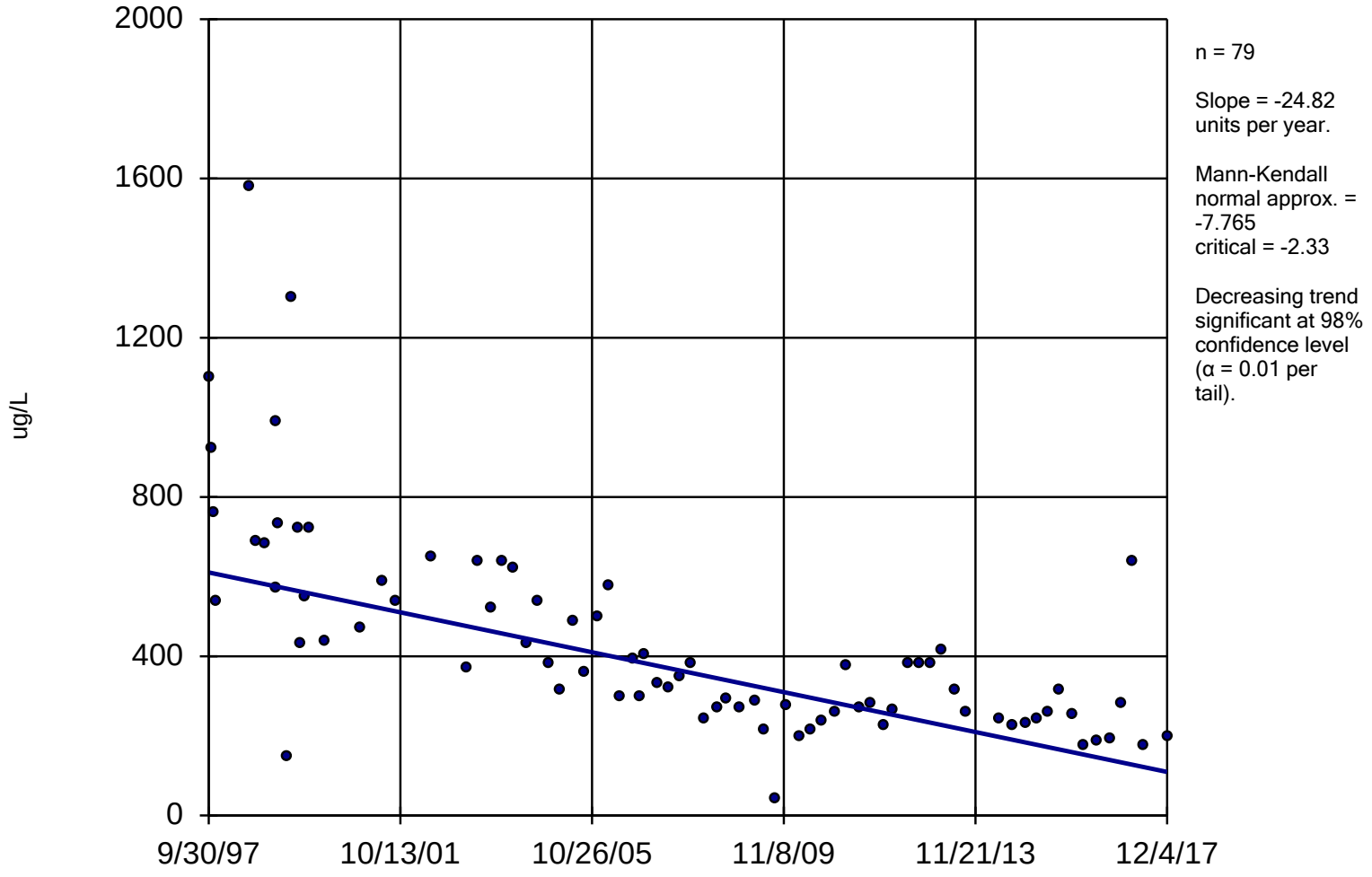
Sen's Slope Estimator

I-4



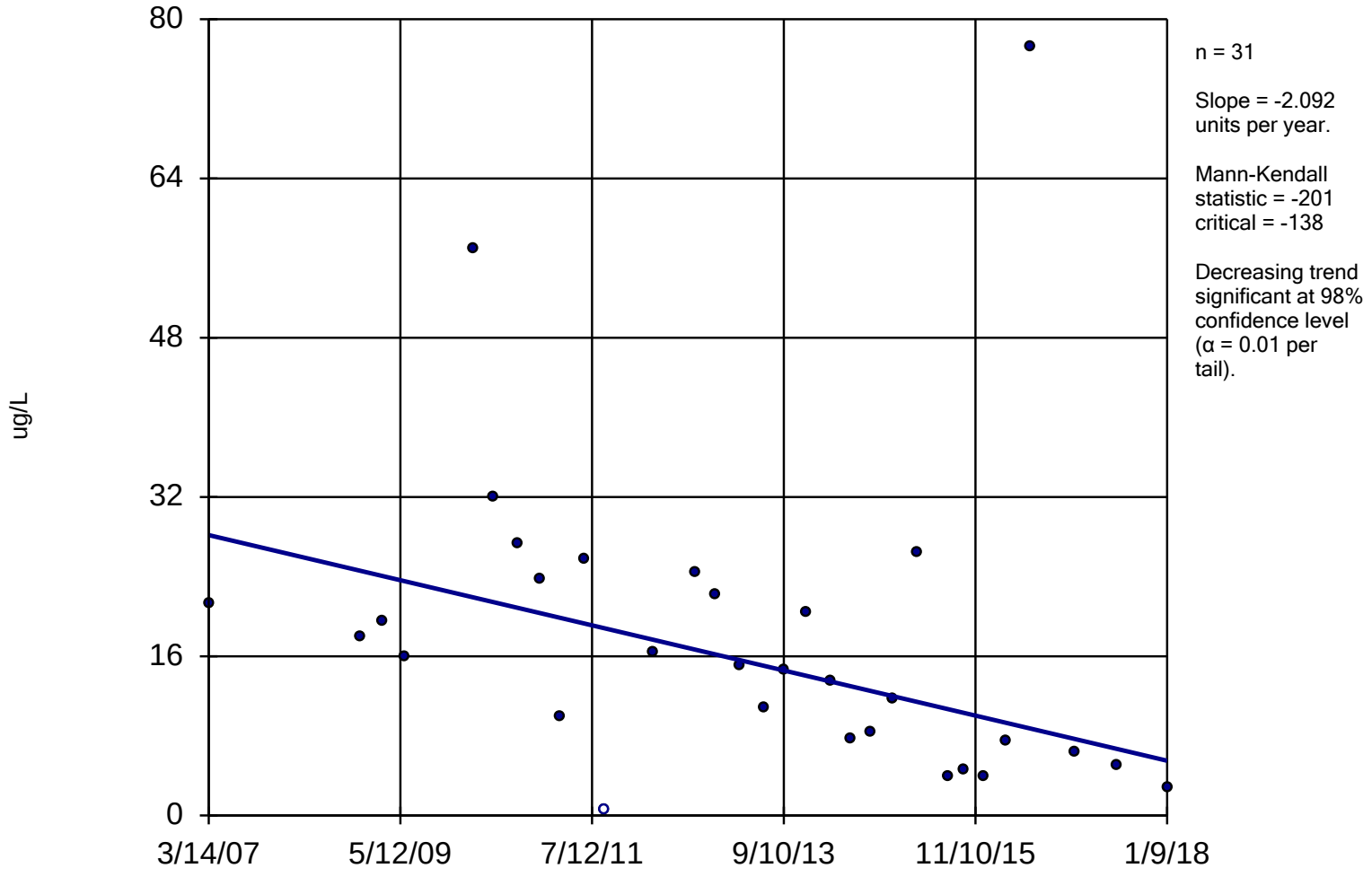
Constituent: TCE Analysis Run 12/28/2018 10:51 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

S-2DB



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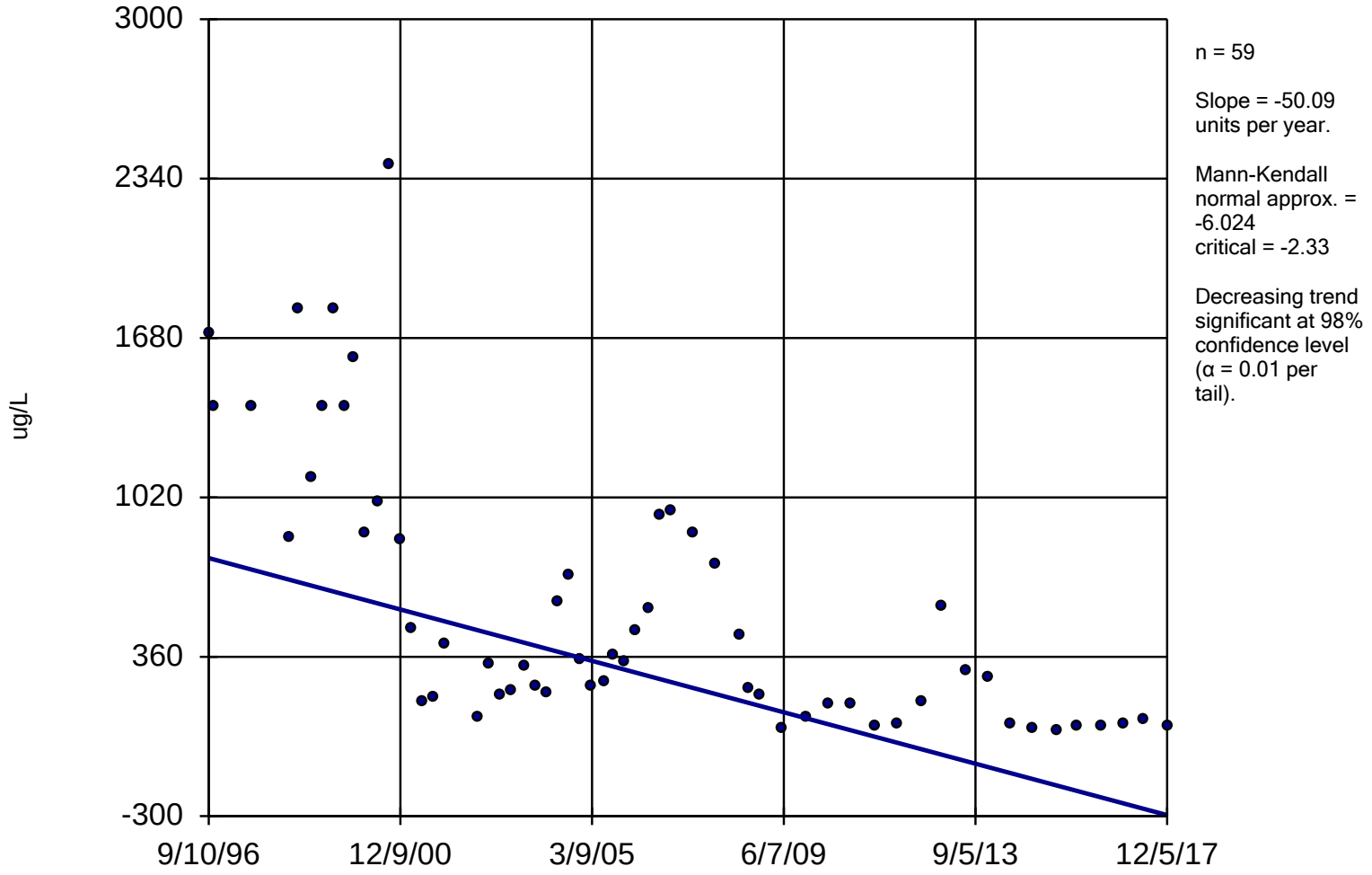
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

SM-1



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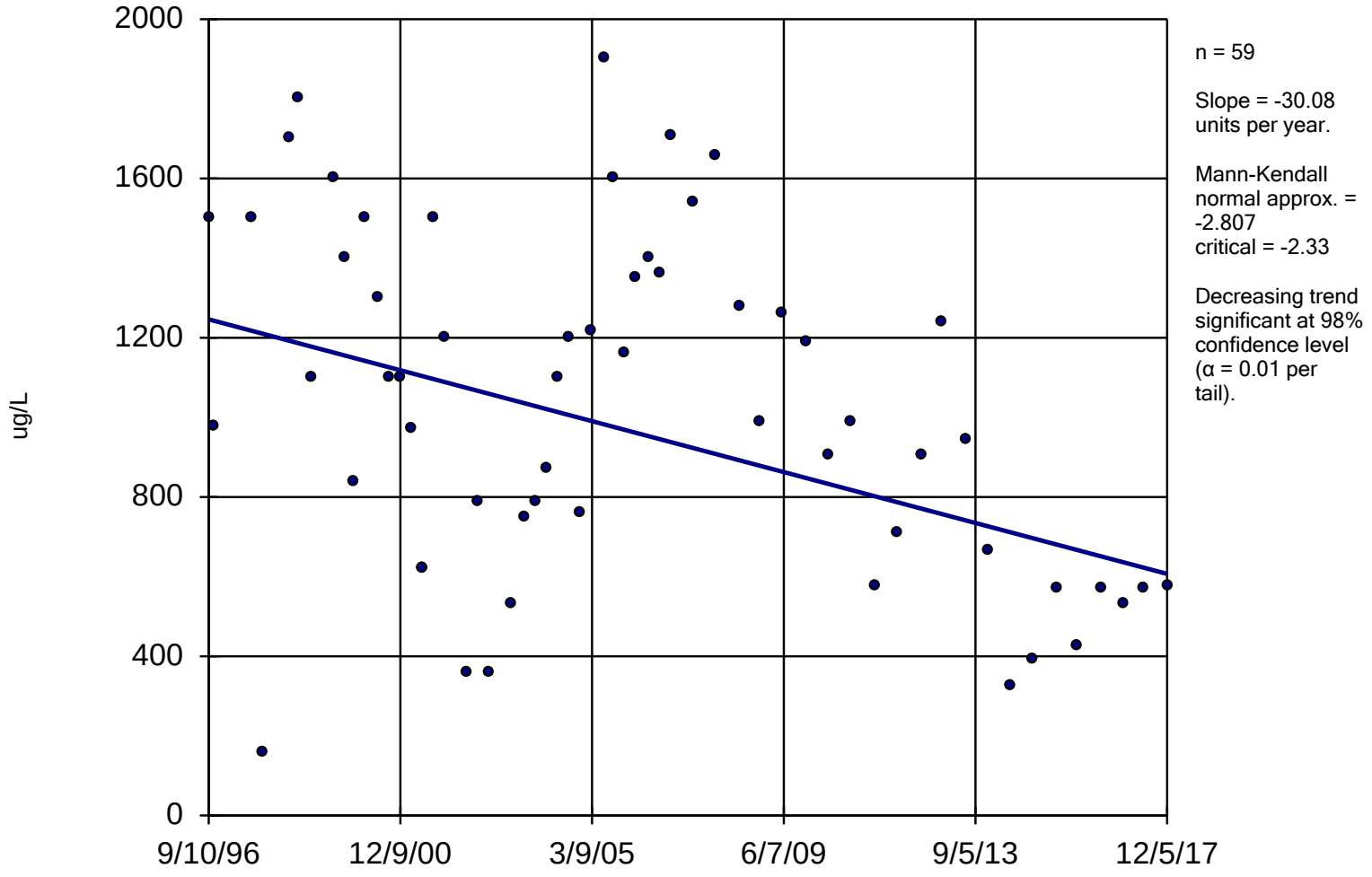
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

SM-2



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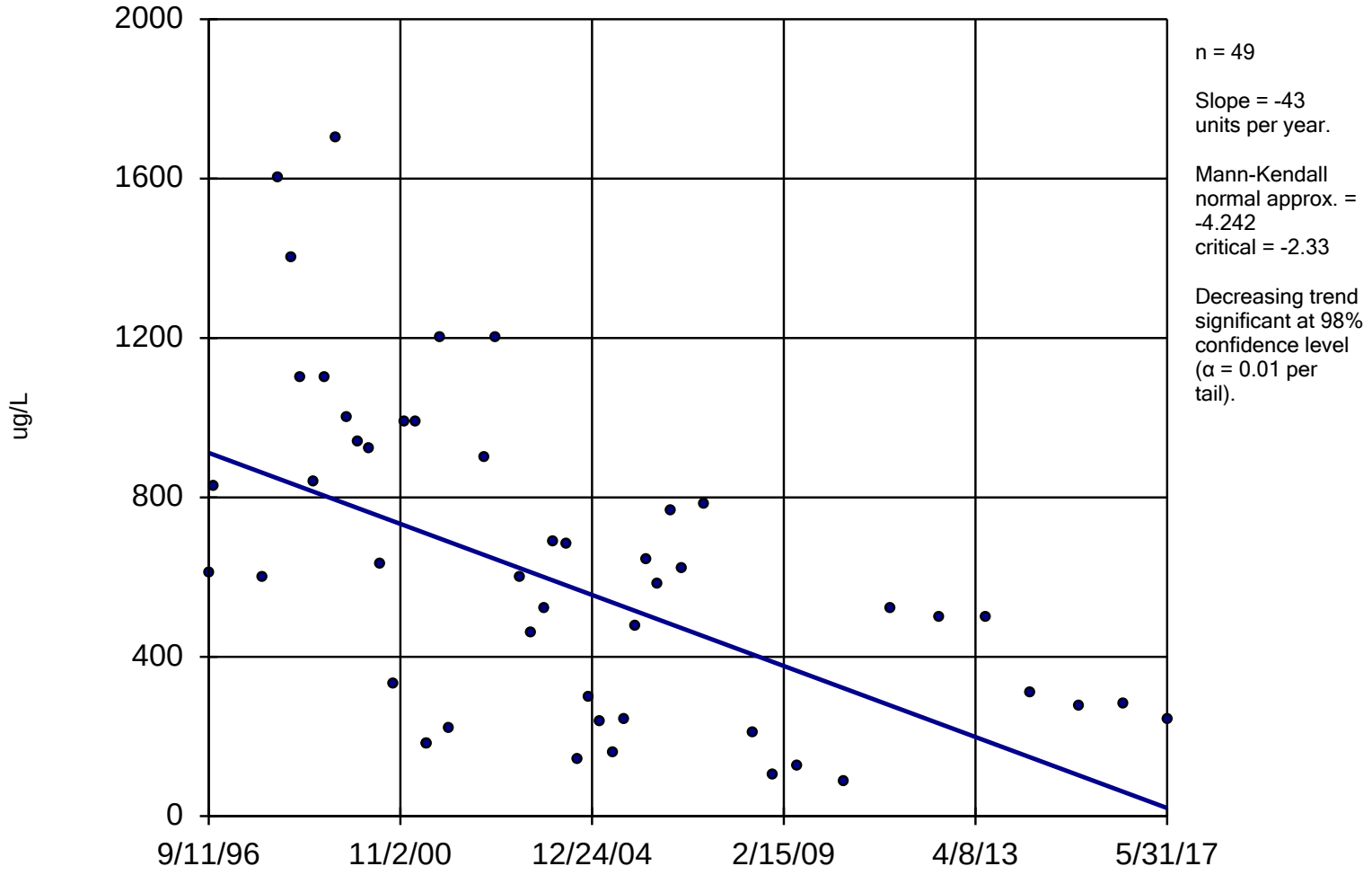
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sen's Slope Estimator

SM-3



Constituent: TCE Analysis Run 12/28/2018 10:51 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

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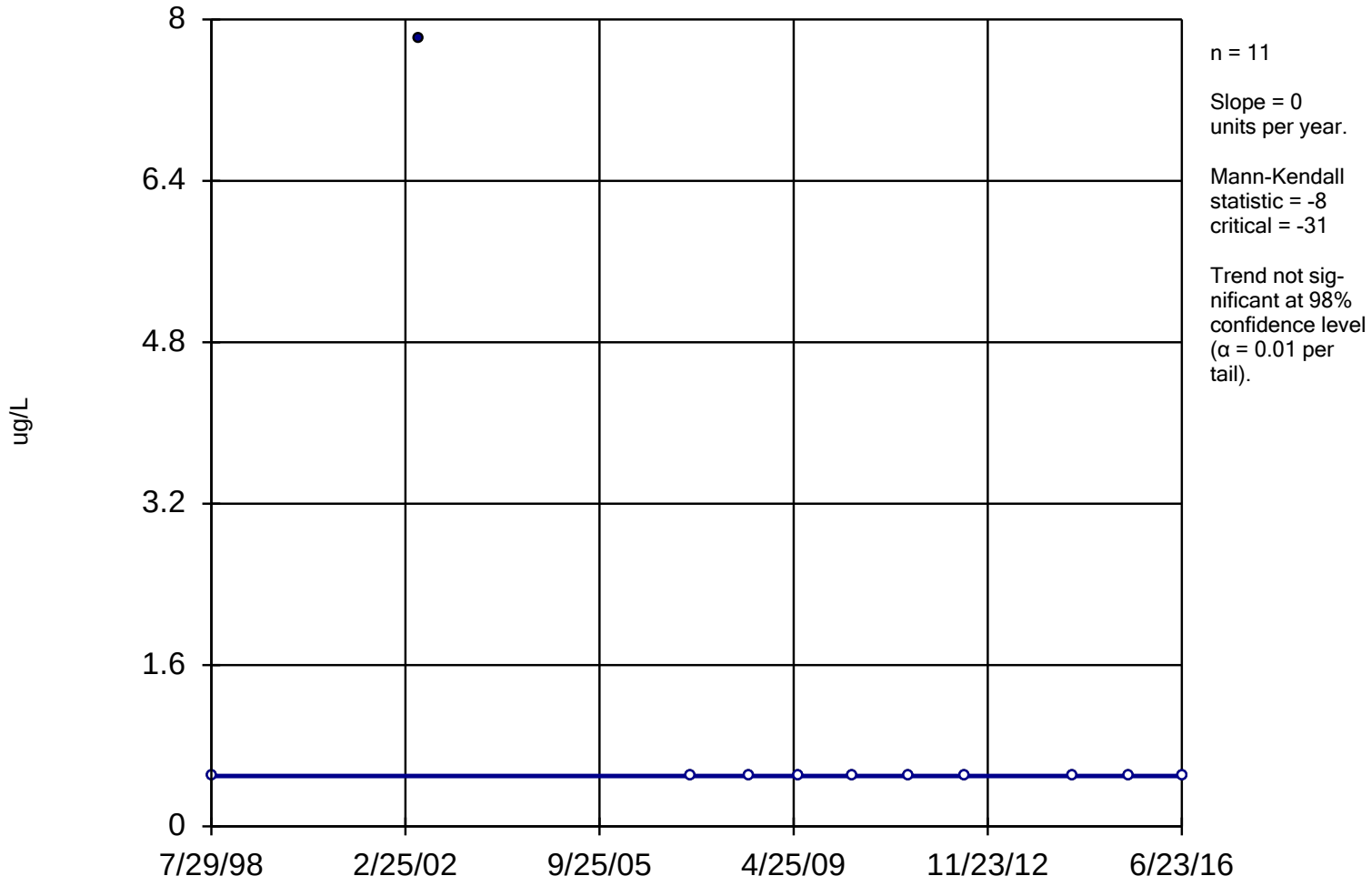
Hollow symbols indicate censored values.

Sen's Slope Estimator

W-1



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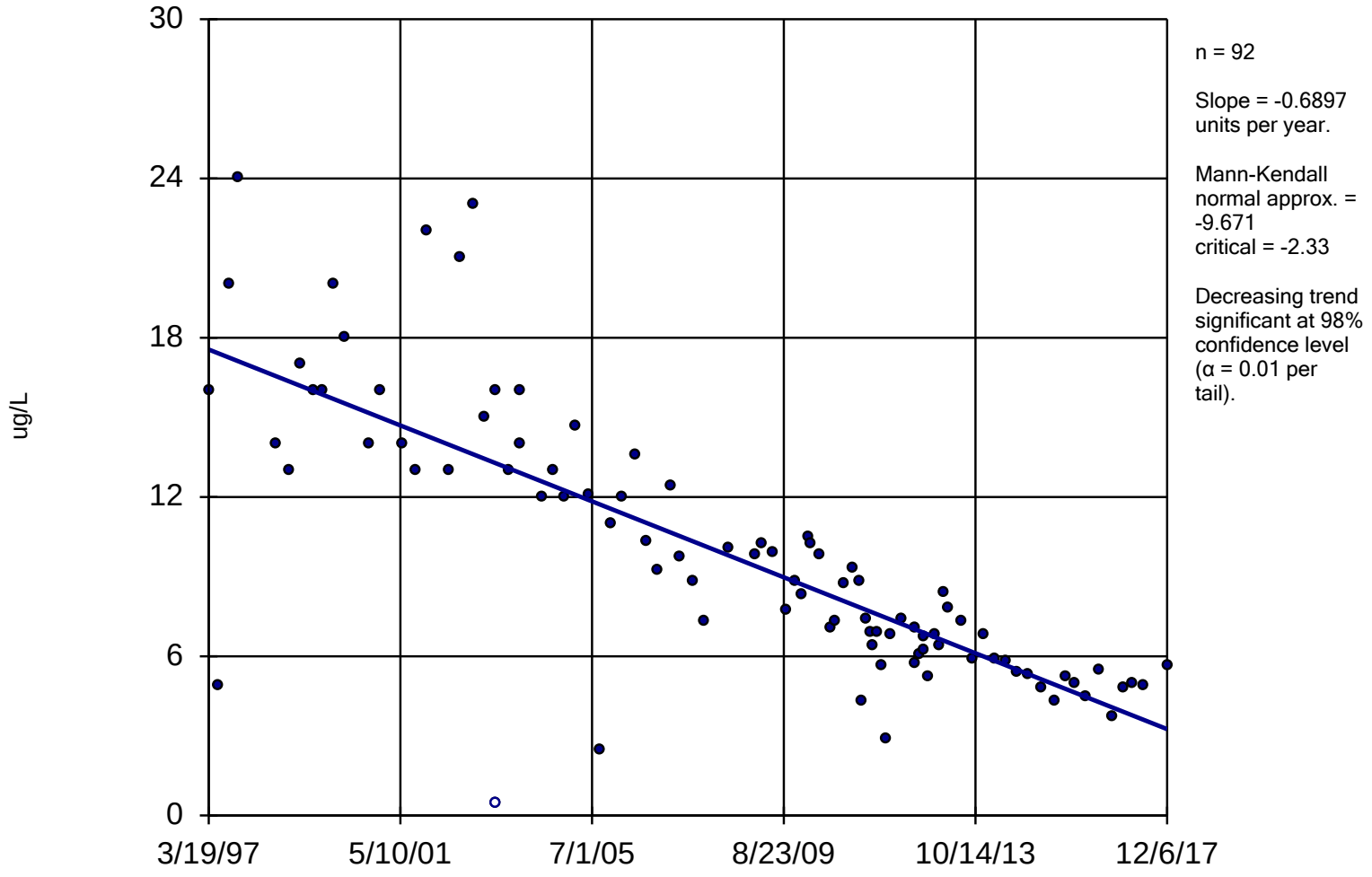
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

W-6



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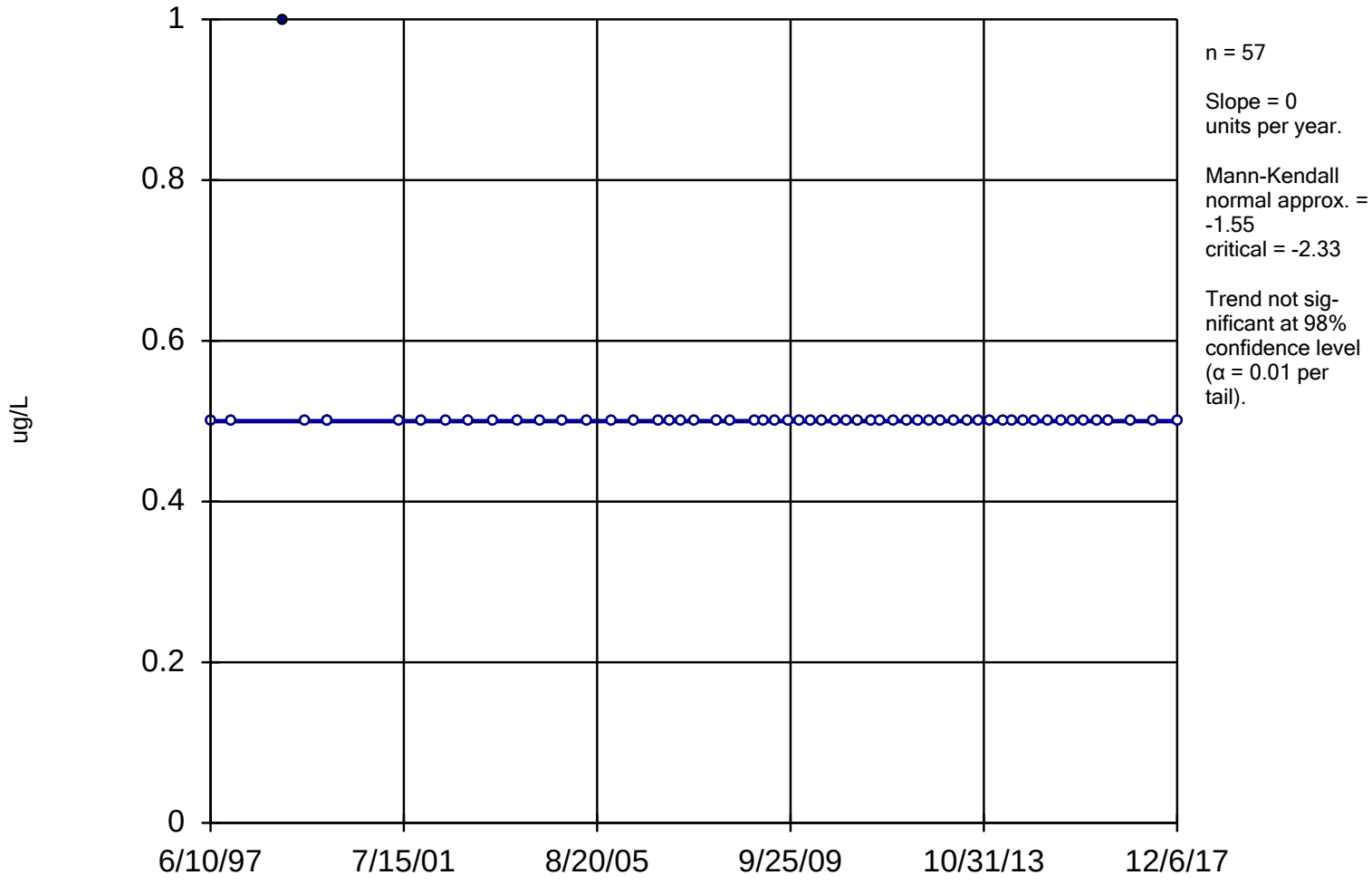
Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

W-7



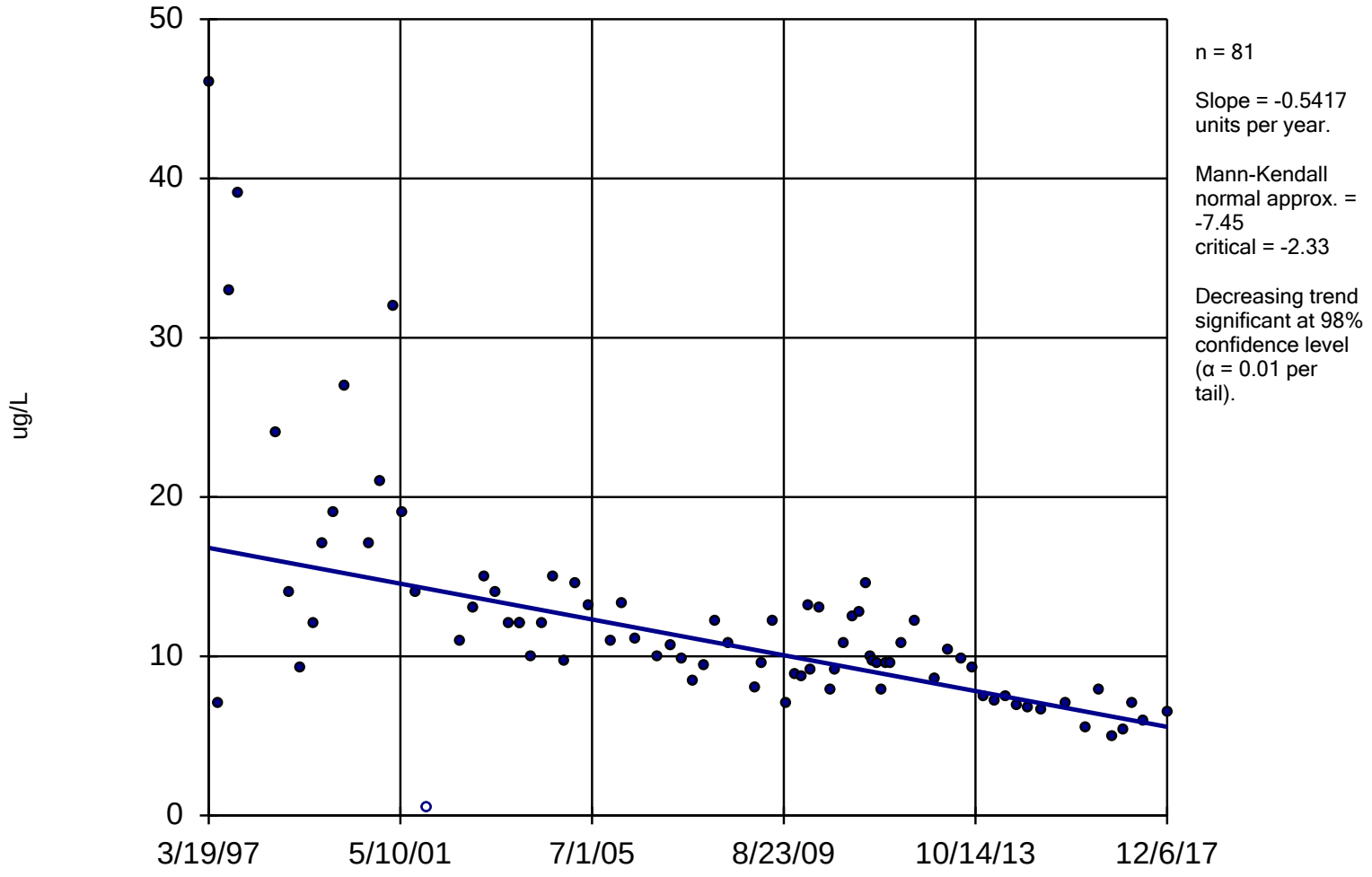
Constituent: TCE Analysis Run 12/28/2018 10:51 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Sanitas™ v.9.4.41 Sanitas software licensed to Stantec. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

W-12



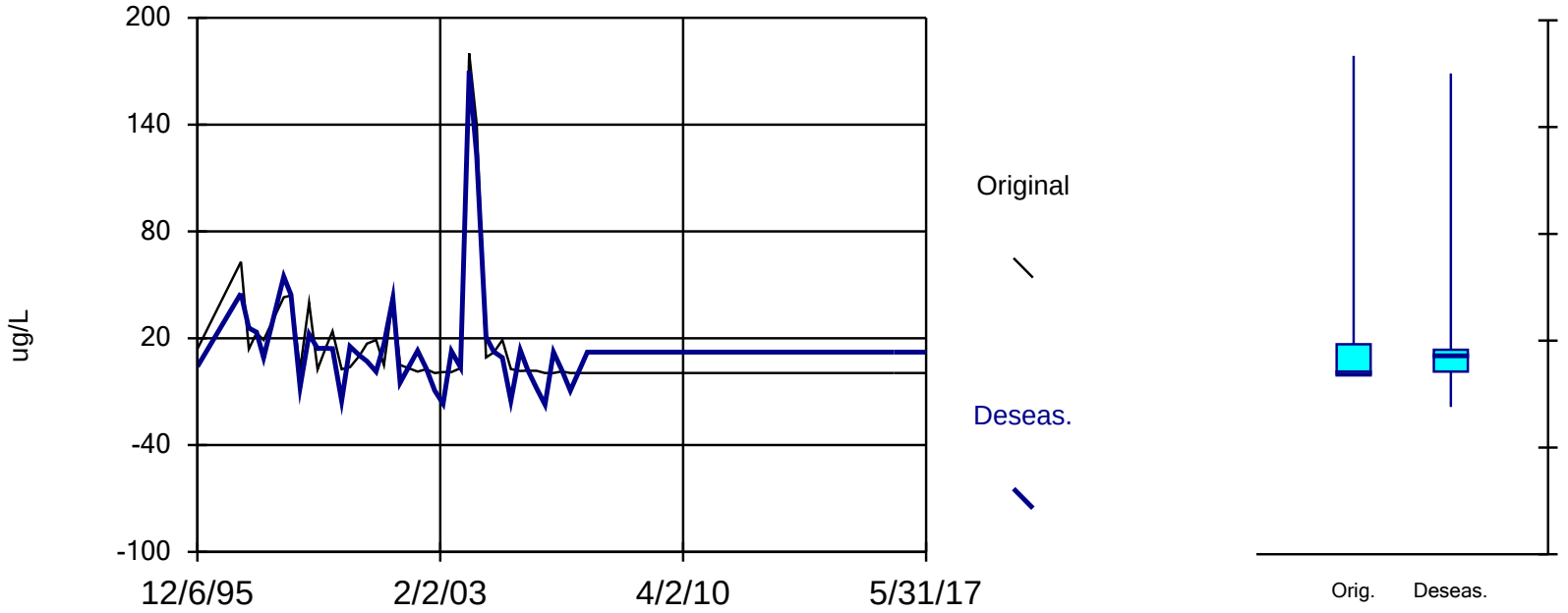
Constituent: TCE Analysis Run 12/28/2018 10:51 AM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Appendix K SEASONALITY ANALYSIS

Seasonality: B-1I

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 14.19
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 7 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 13.8
Adjusted Kruskal-Wallis statistic (H') = 14.19

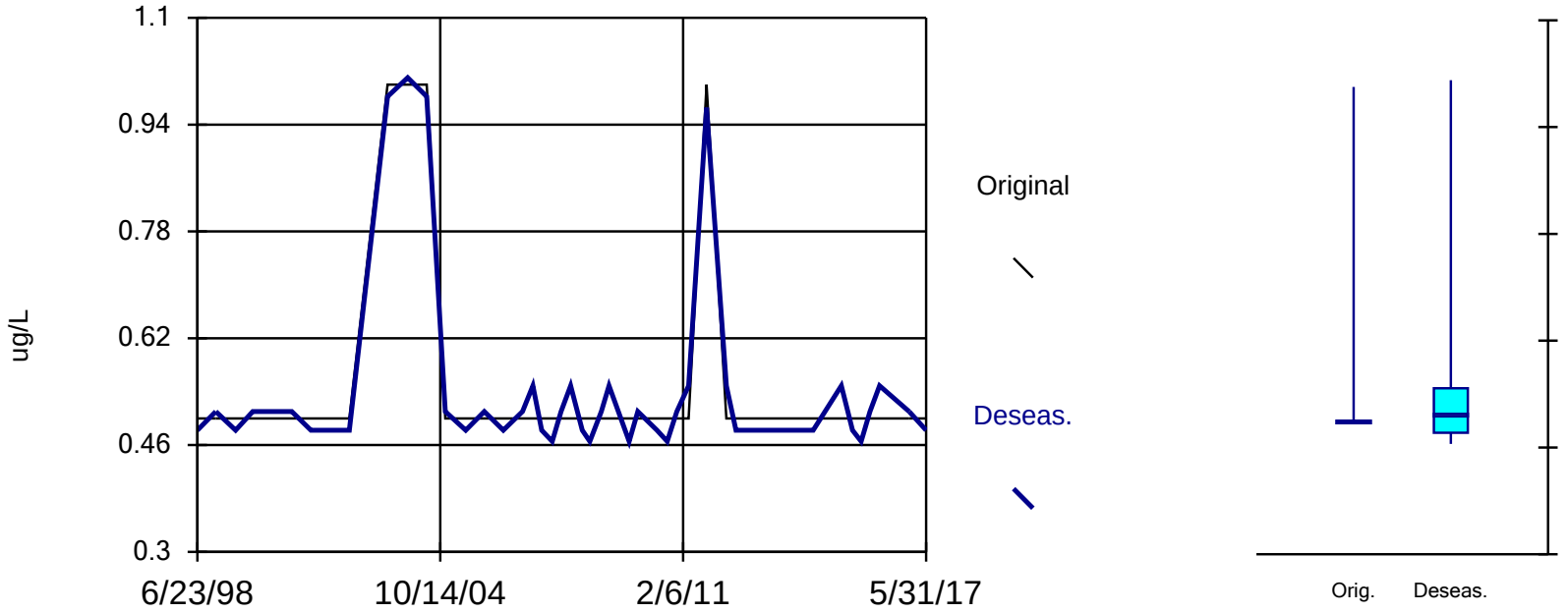


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-2D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.33
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.3515
Adjusted Kruskal-Wallis statistic (H') = 1.33

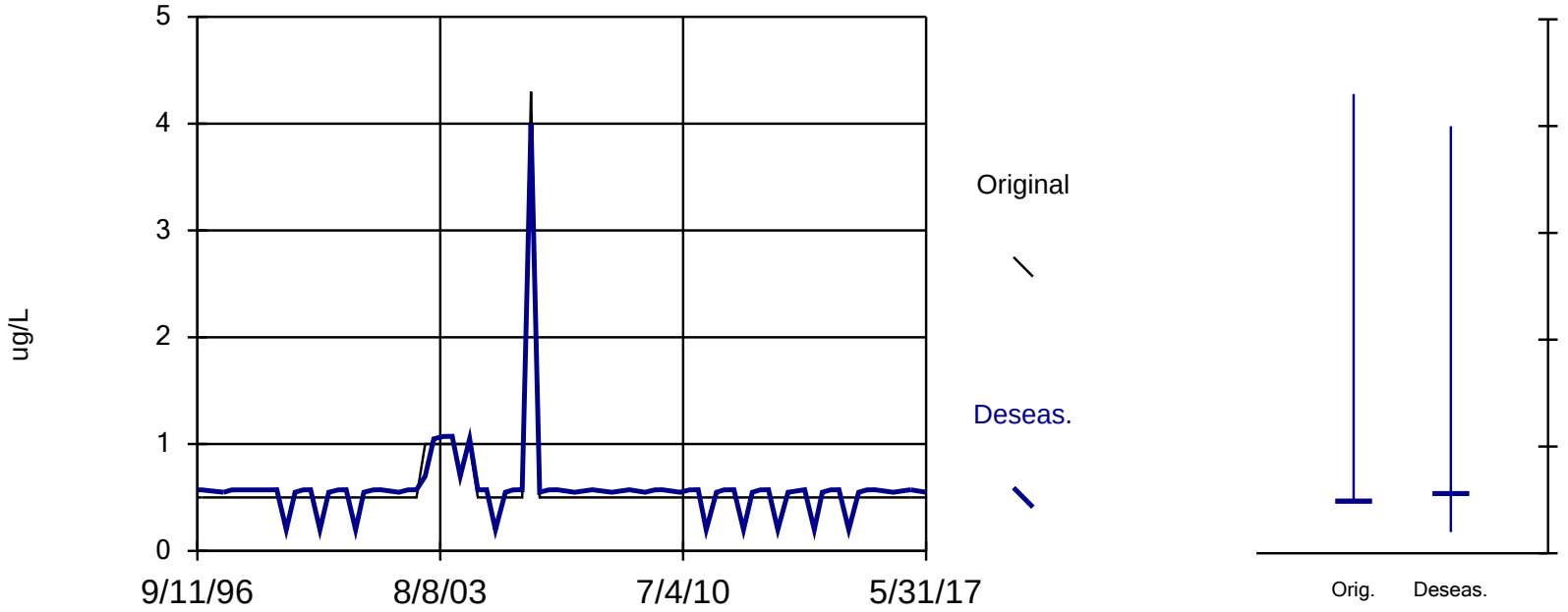


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-2S

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 3.978
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.09
Adjusted Kruskal-Wallis statistic (H') = 3.978

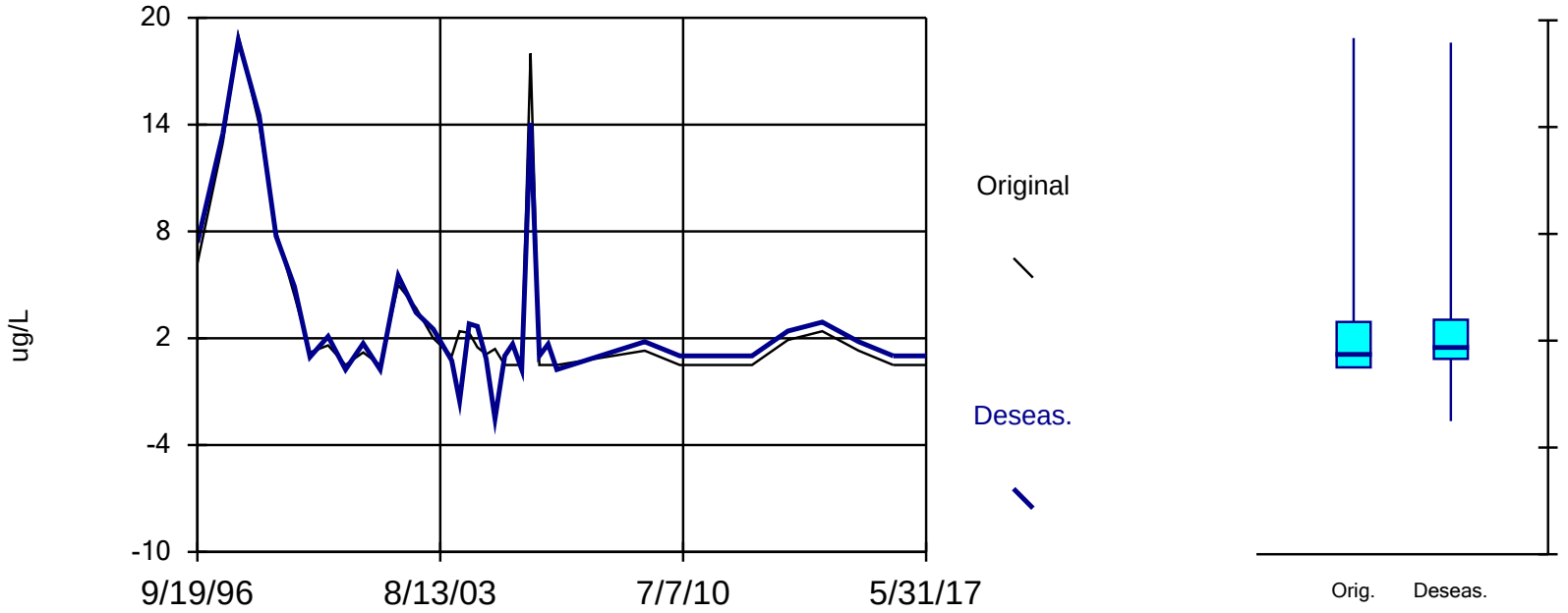


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-3I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.512
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 4 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.394
Adjusted Kruskal-Wallis statistic (H') = 2.512

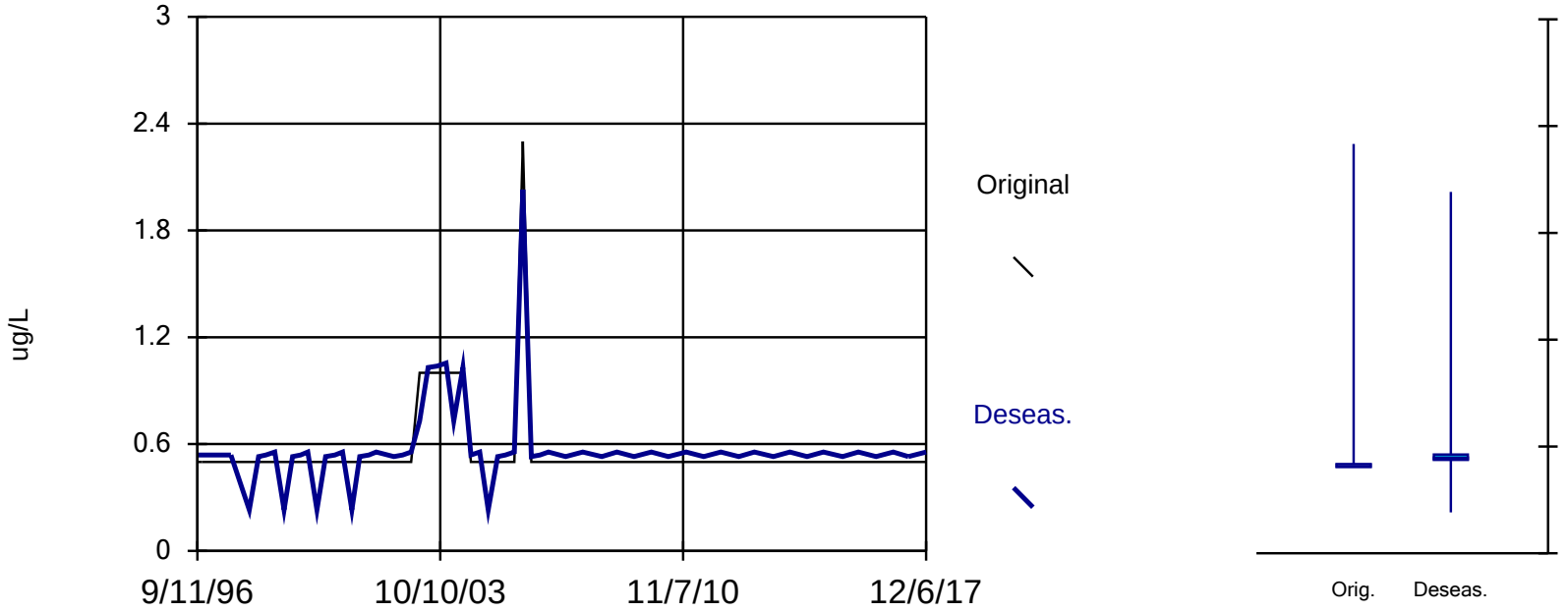


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-4D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 6.488
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.01
Adjusted Kruskal-Wallis statistic (H') = 6.488

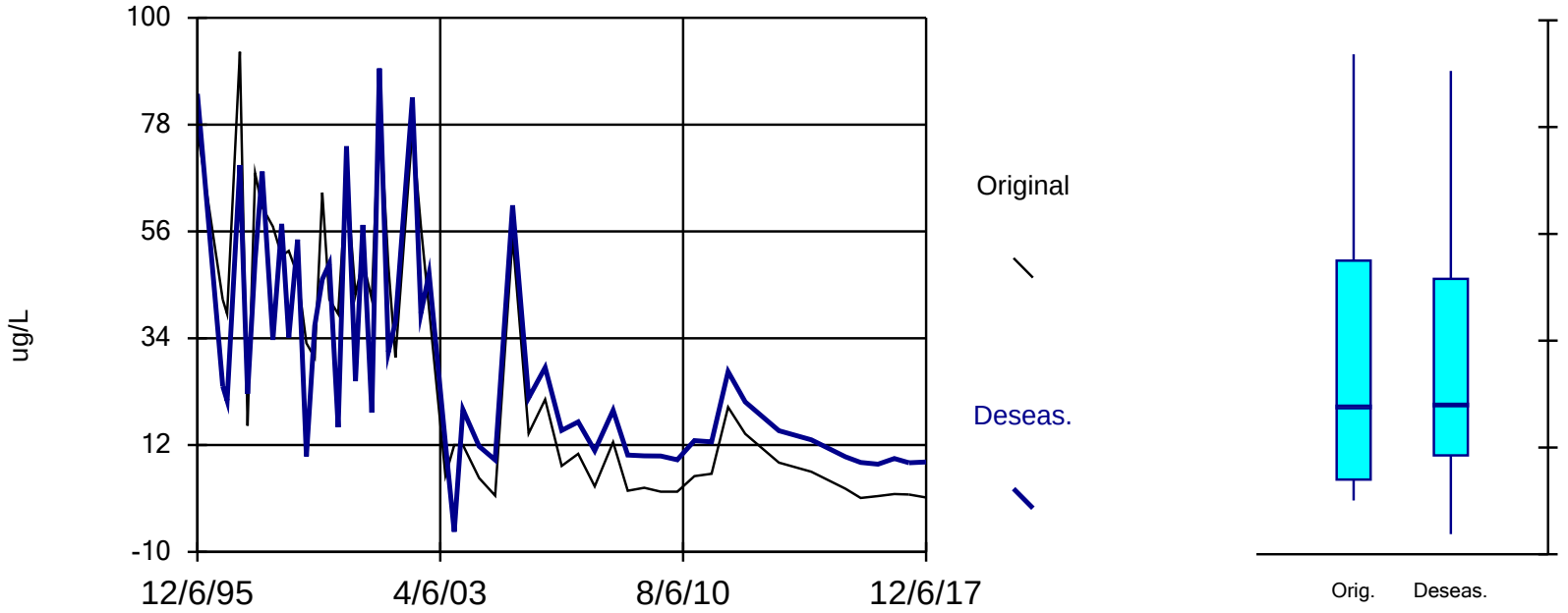


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-4I

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 11.19
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 7 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 11.19
Adjusted Kruskal-Wallis statistic (H') = 11.19

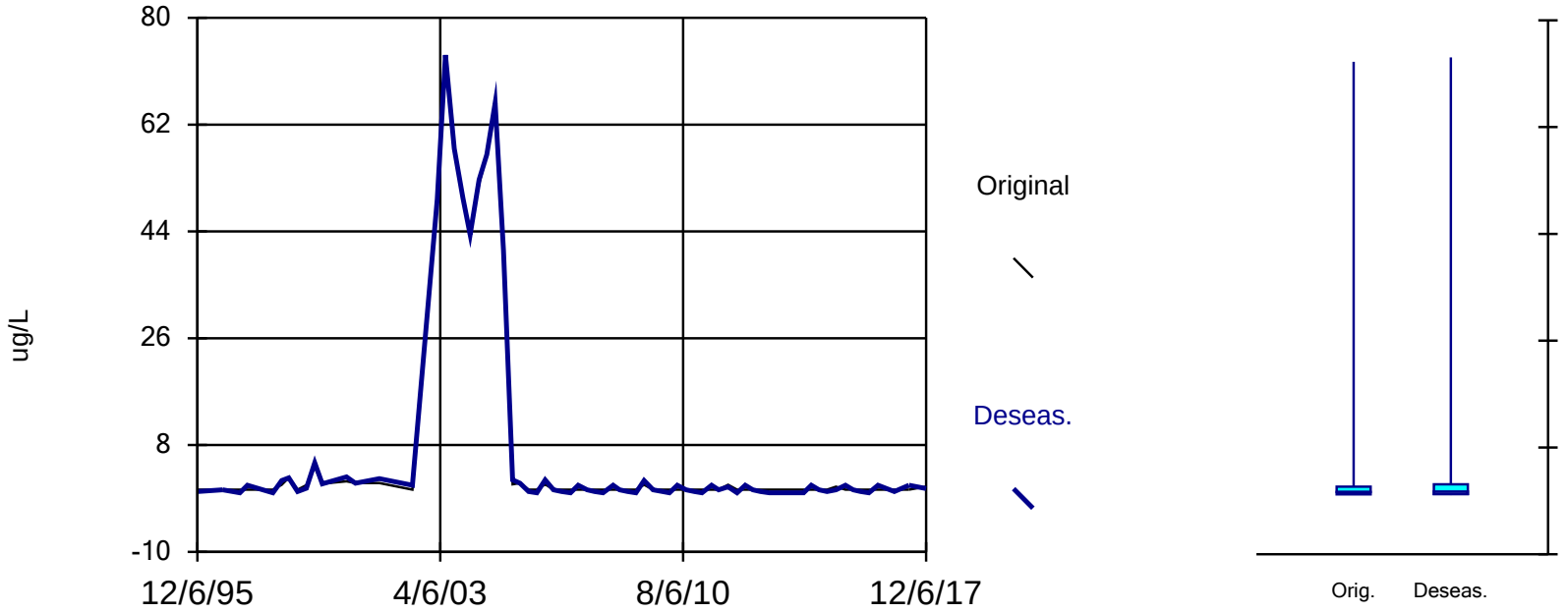


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-4S

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.634
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 6 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.191
Adjusted Kruskal-Wallis statistic (H') = 1.634

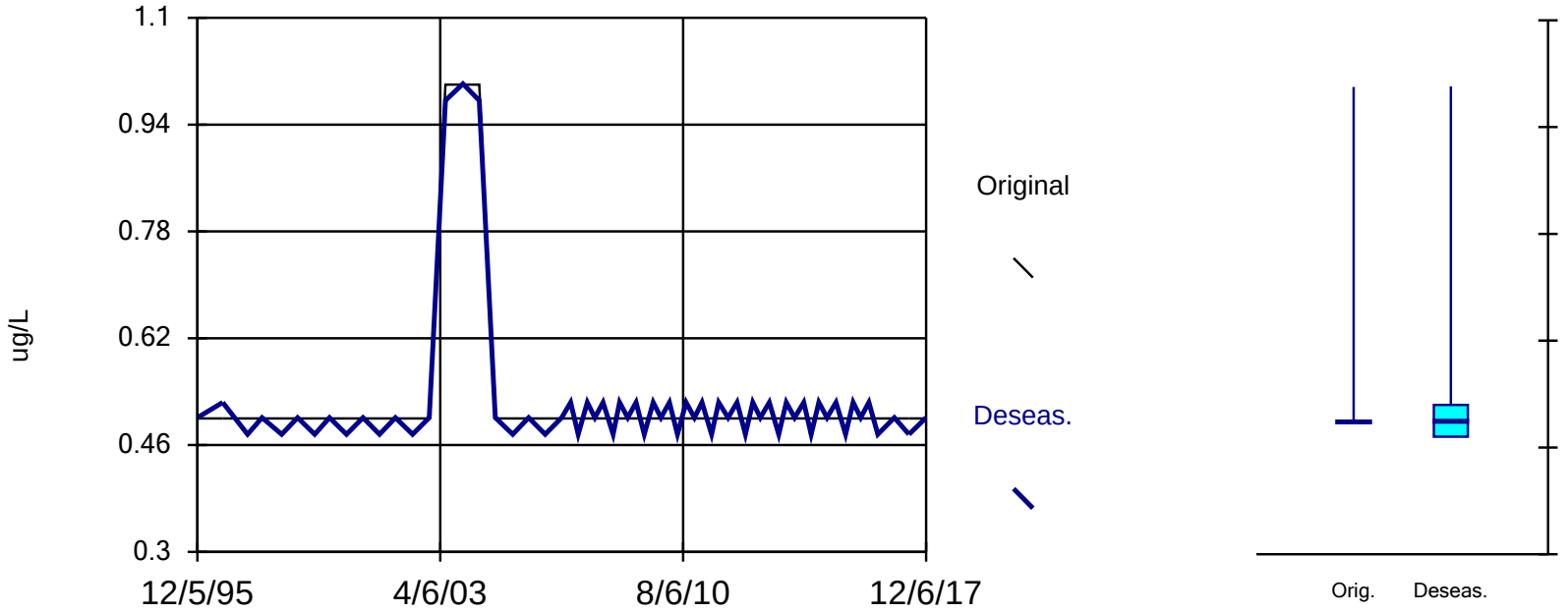


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-5D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.02
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.2749
Adjusted Kruskal-Wallis statistic (H') = 2.02

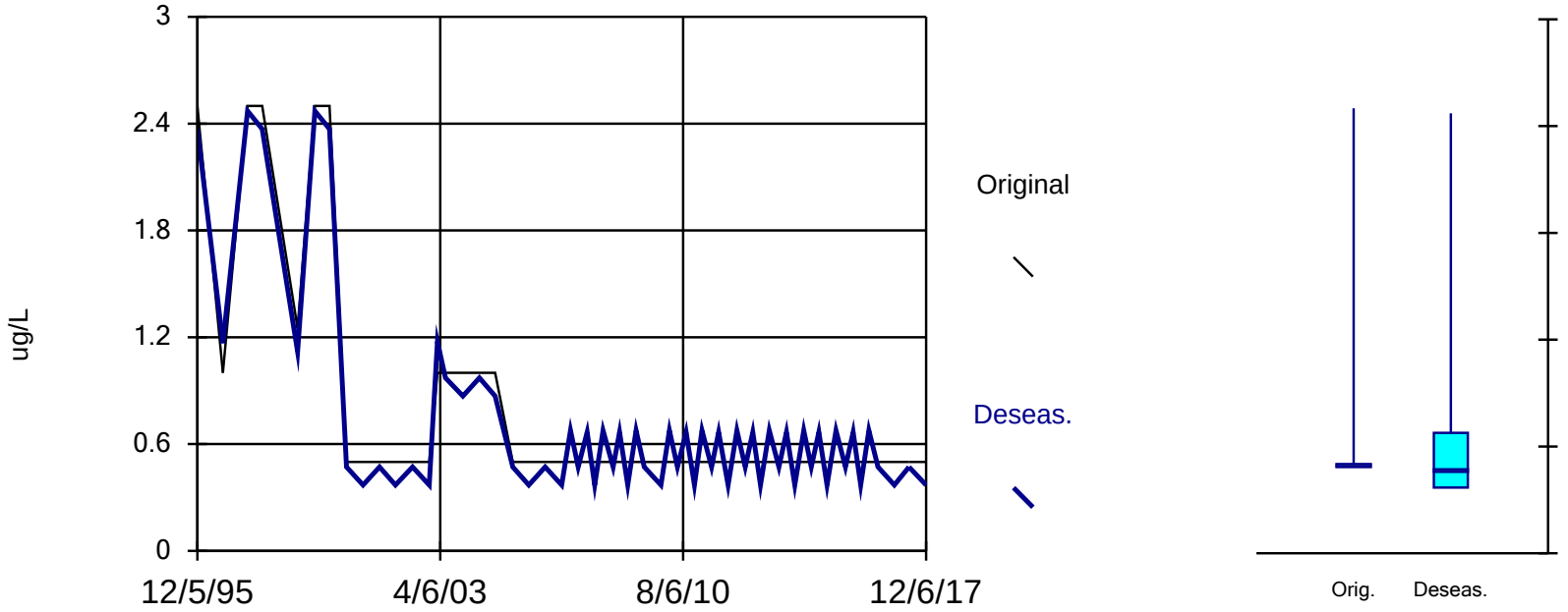


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-6I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.37
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.124
Adjusted Kruskal-Wallis statistic (H') = 2.37

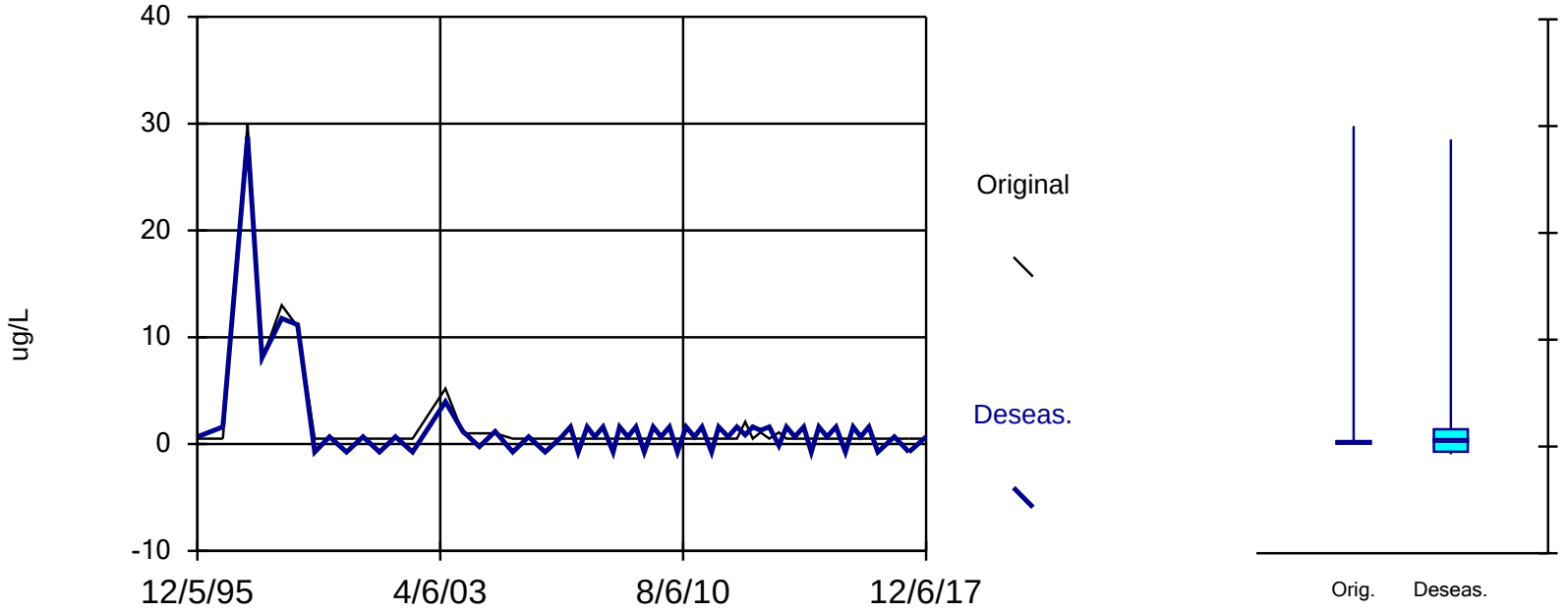


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-6S

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 6.453
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.861
Adjusted Kruskal-Wallis statistic (H') = 6.453

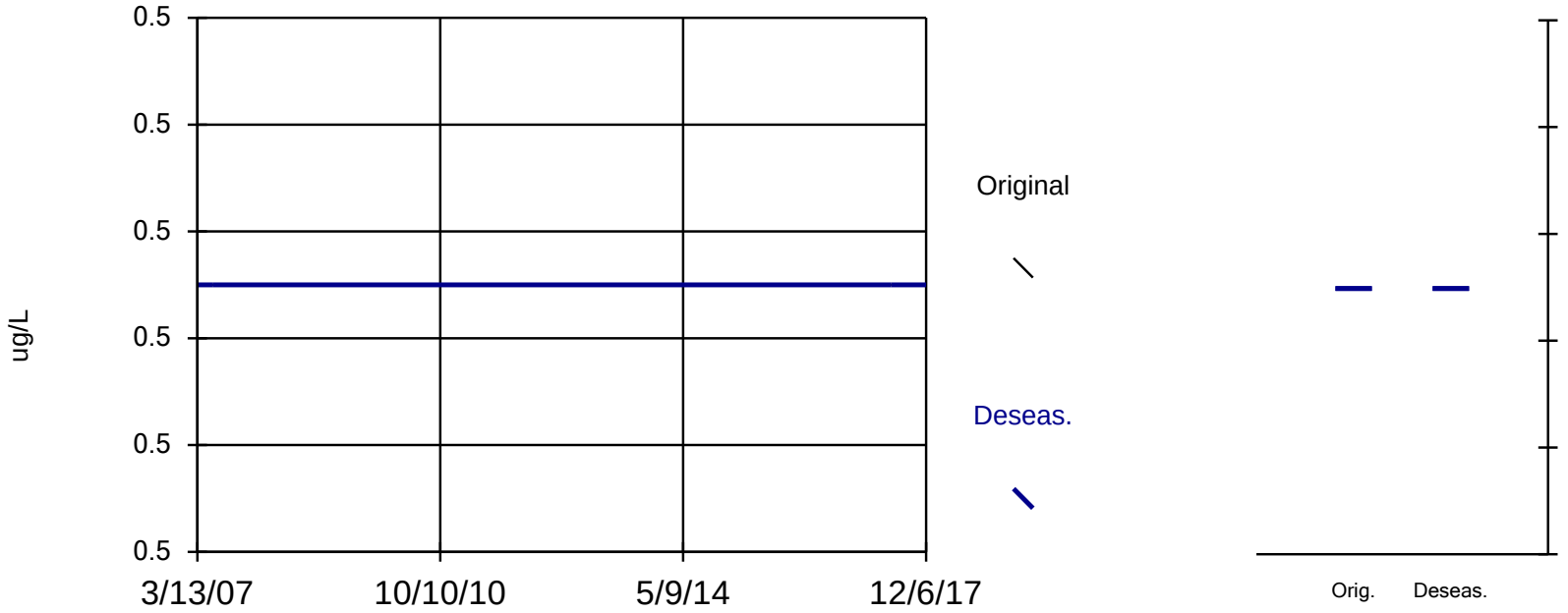


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-8D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

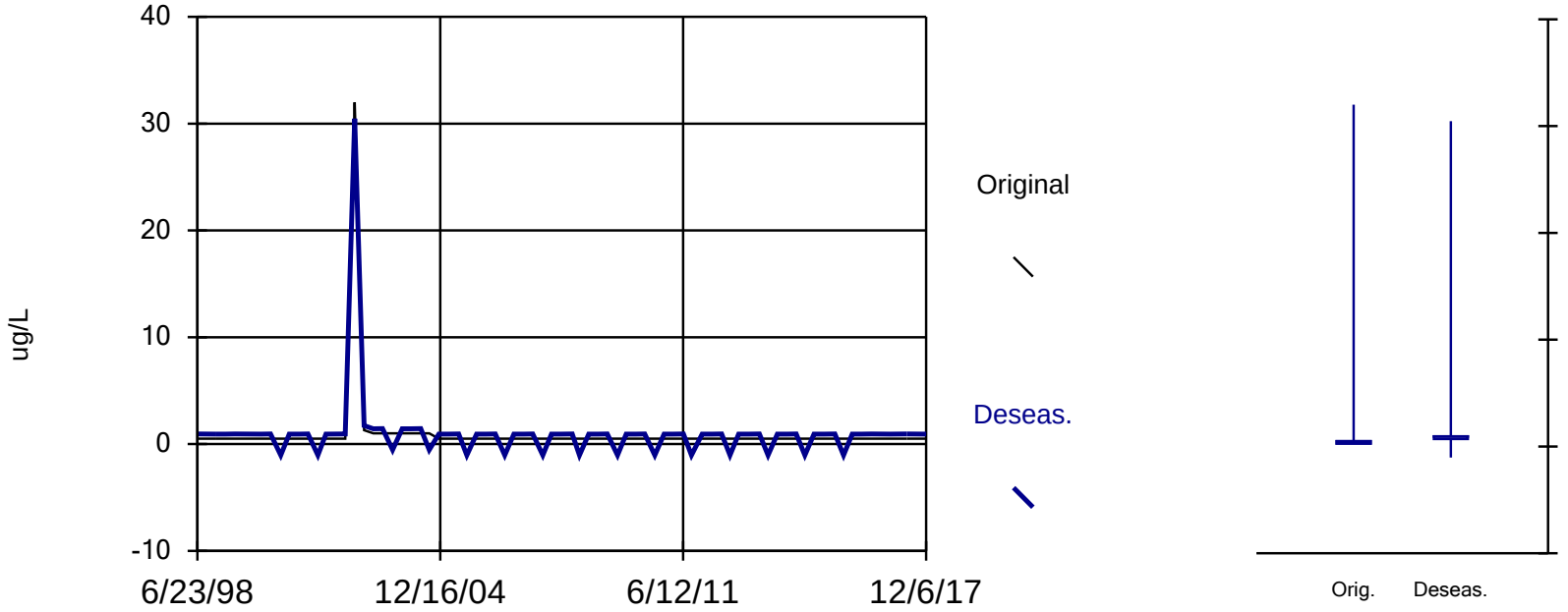


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-8I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0.8301
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.2733
Adjusted Kruskal-Wallis statistic (H') = 0.8301

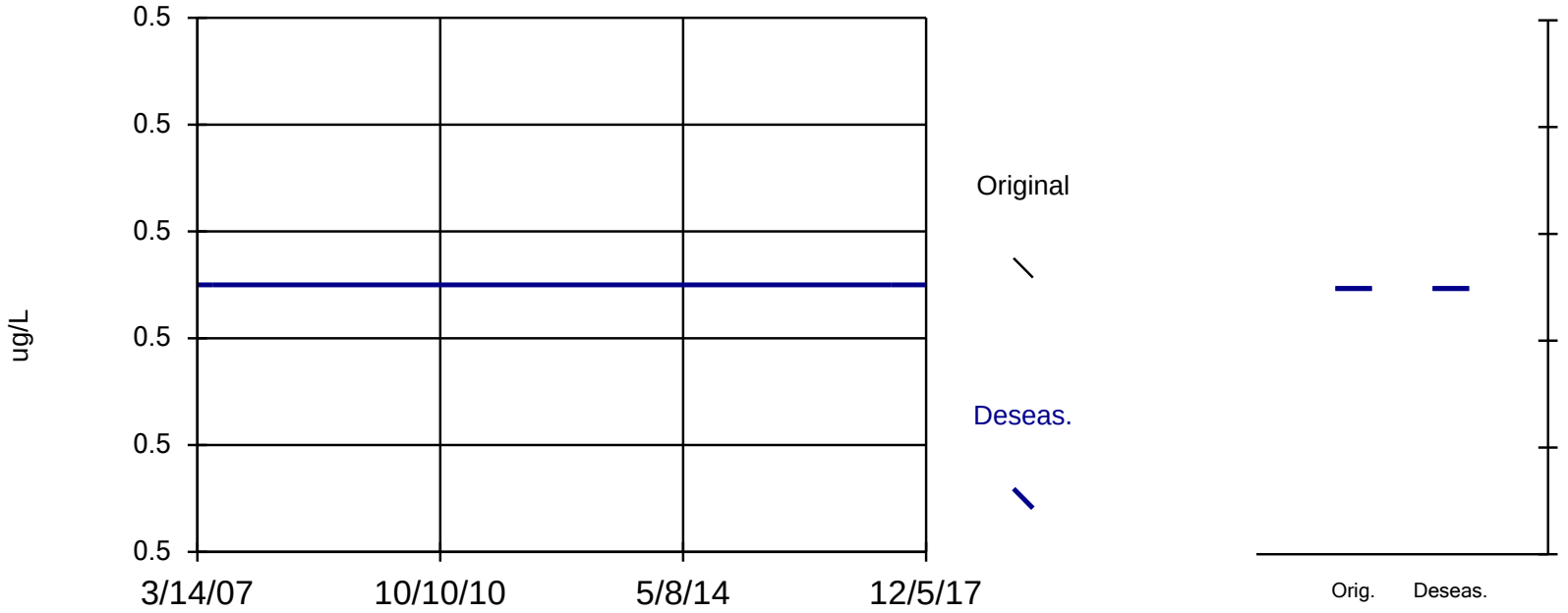


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-13D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

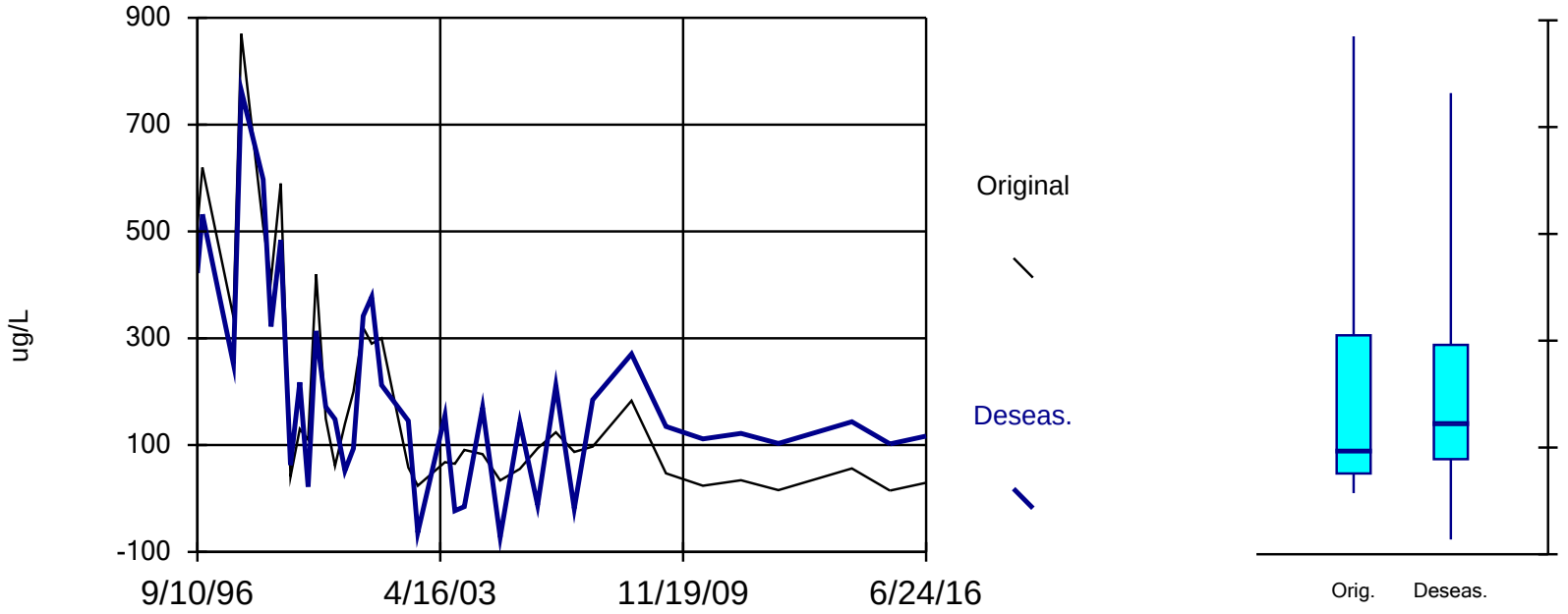


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-15

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 7.703
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 7.701
Adjusted Kruskal-Wallis statistic (H') = 7.703

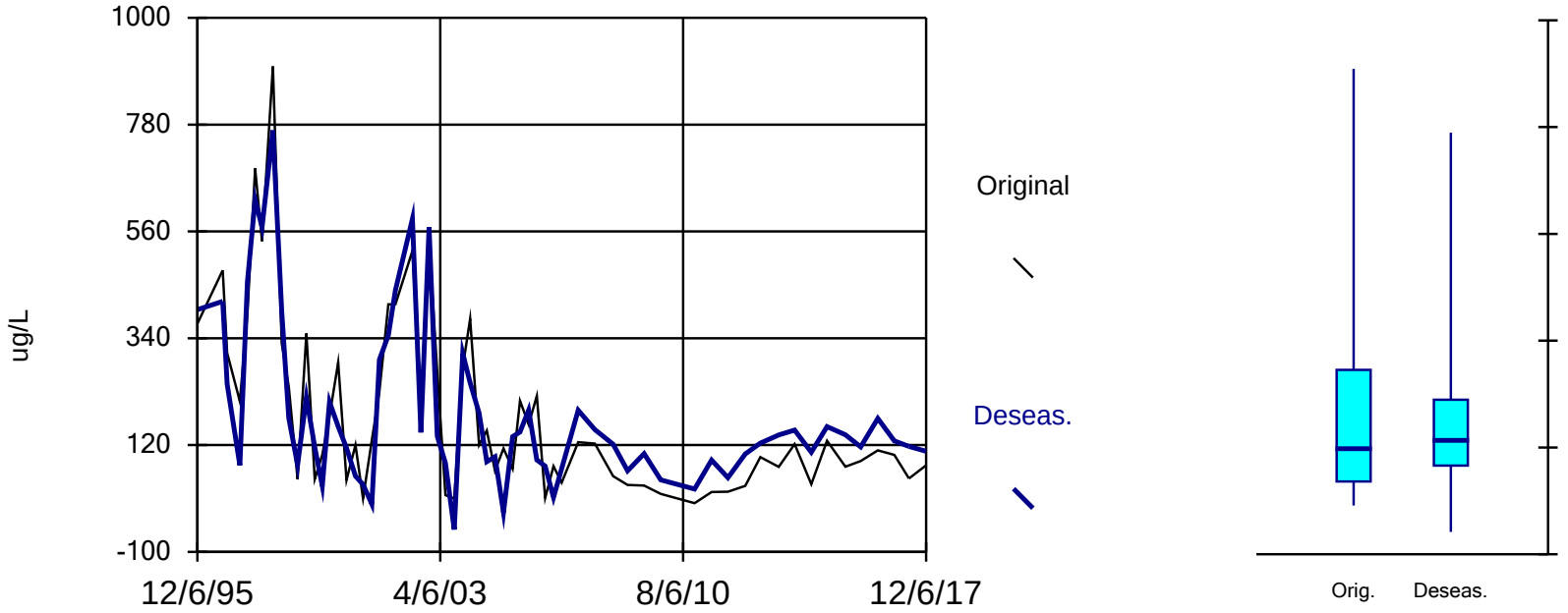


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-16

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 12.22
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 6 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 12.22
Adjusted Kruskal-Wallis statistic (H') = 12.22

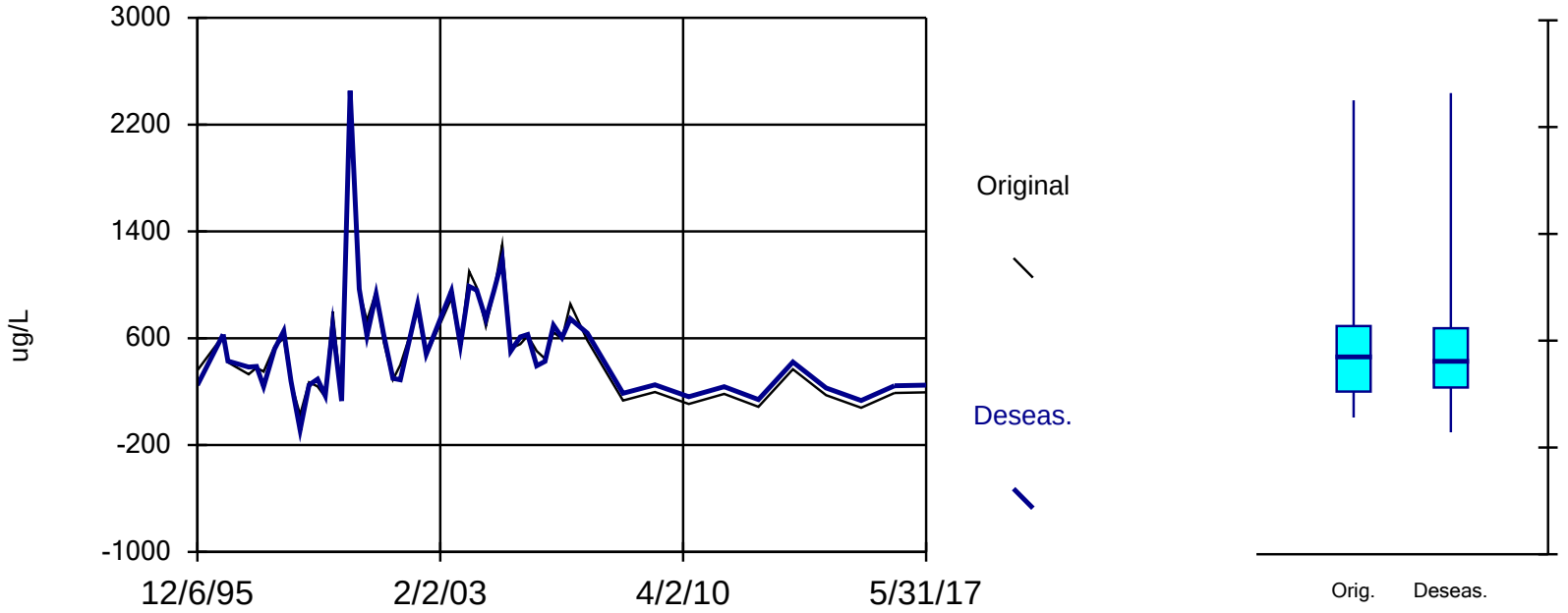


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-17

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 3.141
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 3.14
Adjusted Kruskal-Wallis statistic (H') = 3.141

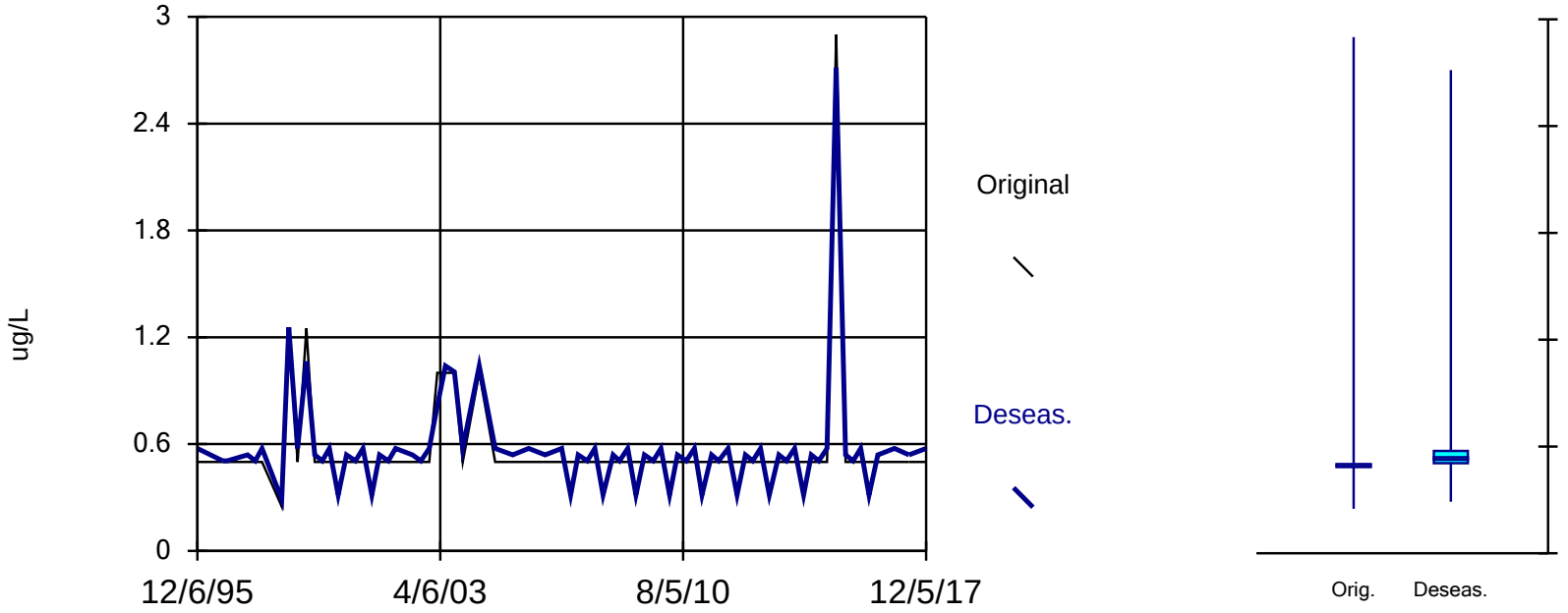


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-18

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 4.568
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.311
Adjusted Kruskal-Wallis statistic (H') = 4.568

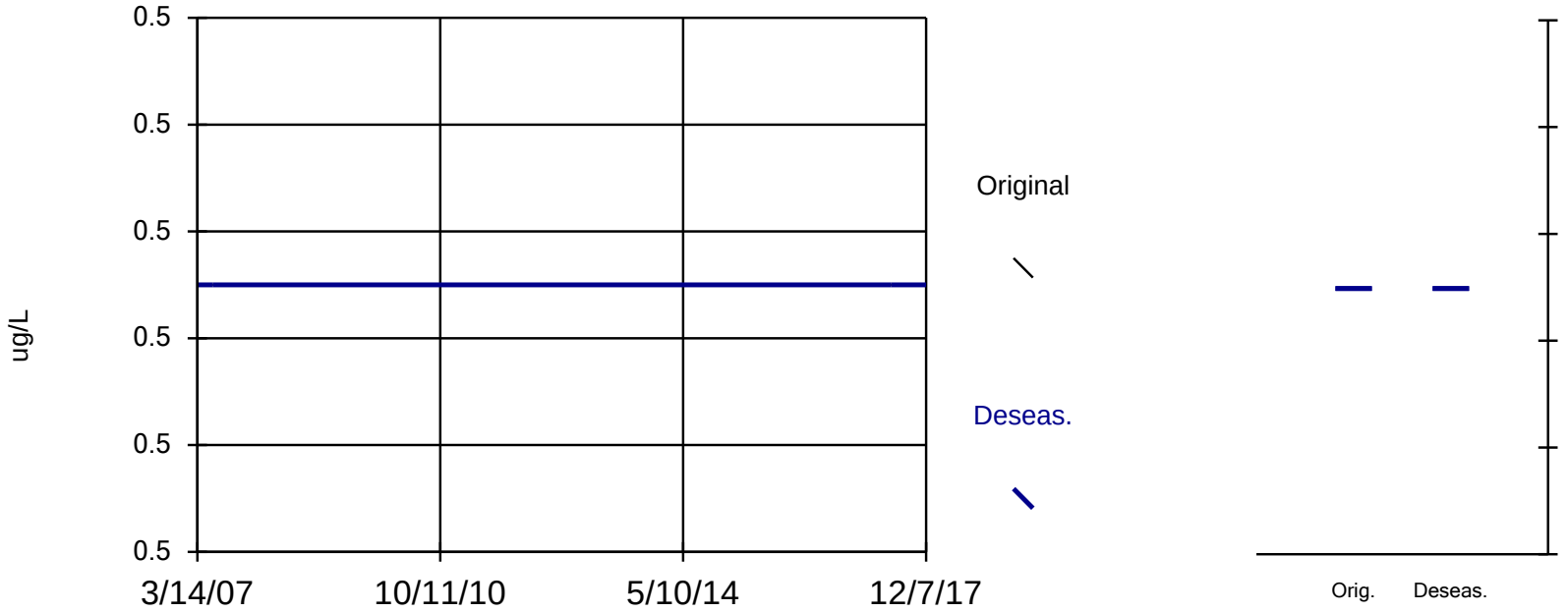


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-1D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

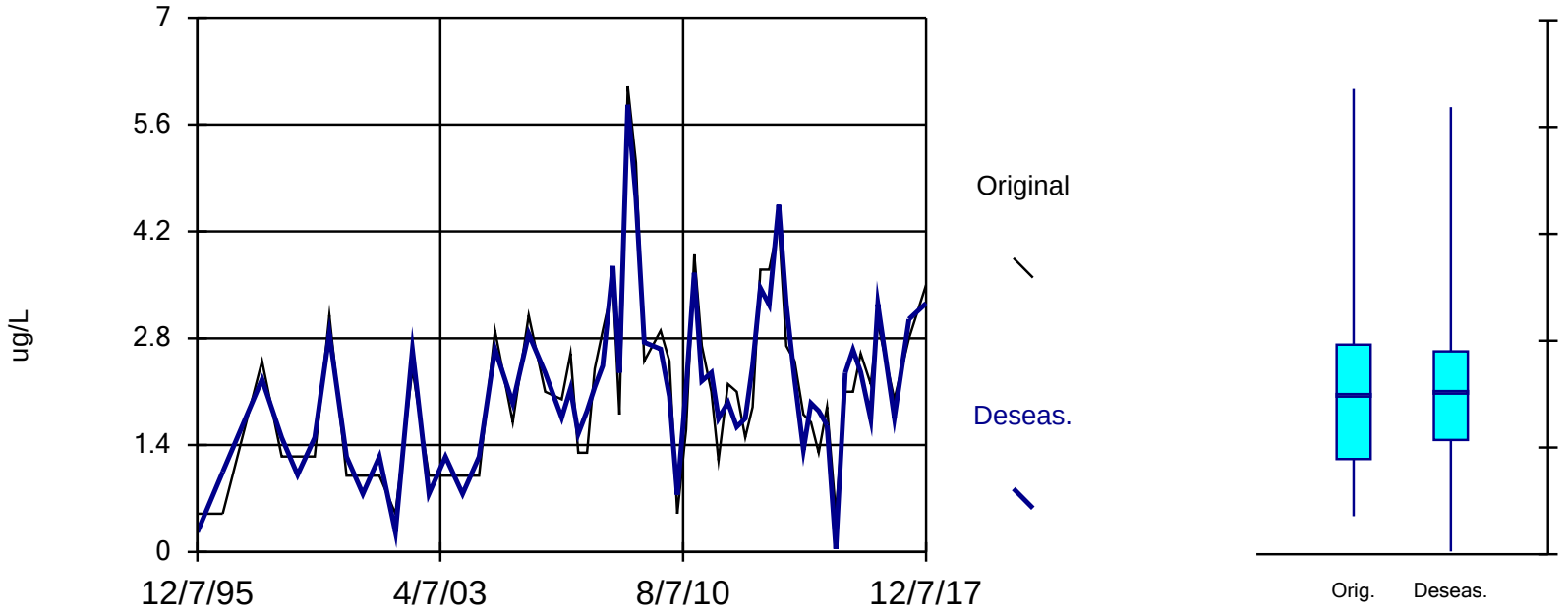


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:54 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-1I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 6.172
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 18 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 6.151
Adjusted Kruskal-Wallis statistic (H') = 6.172

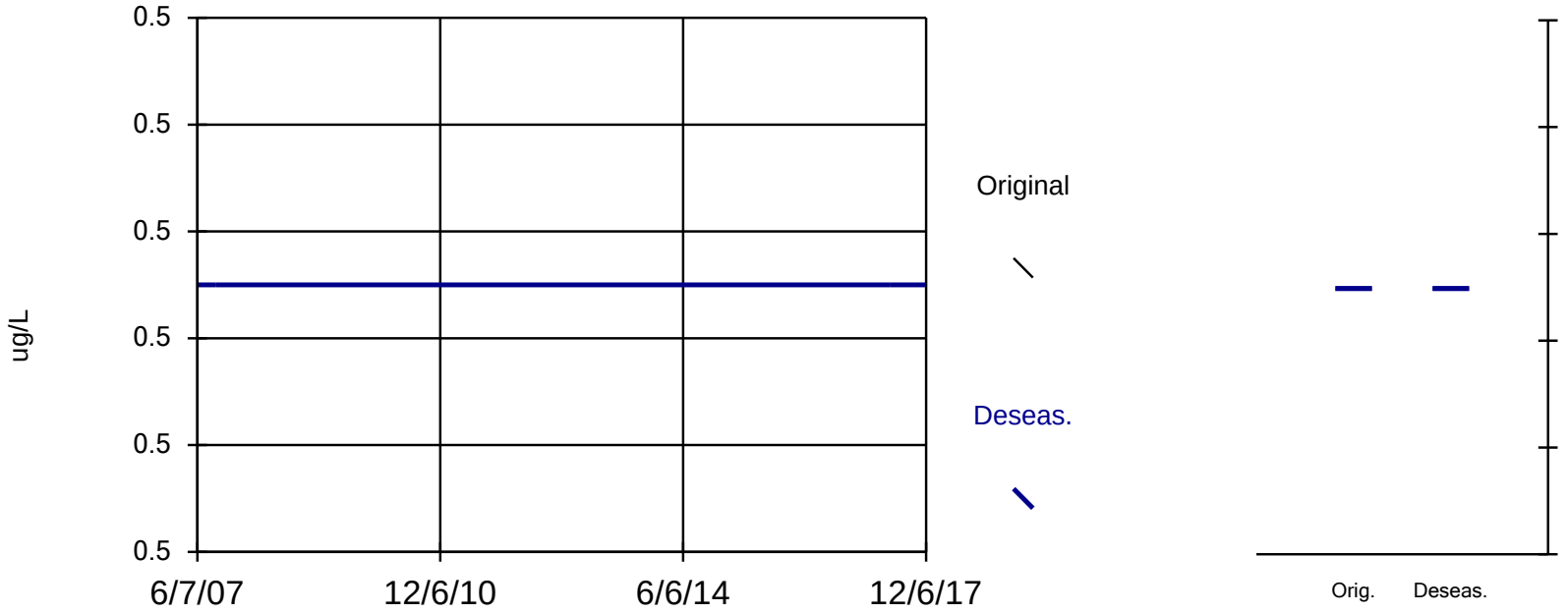


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-3D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 18 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

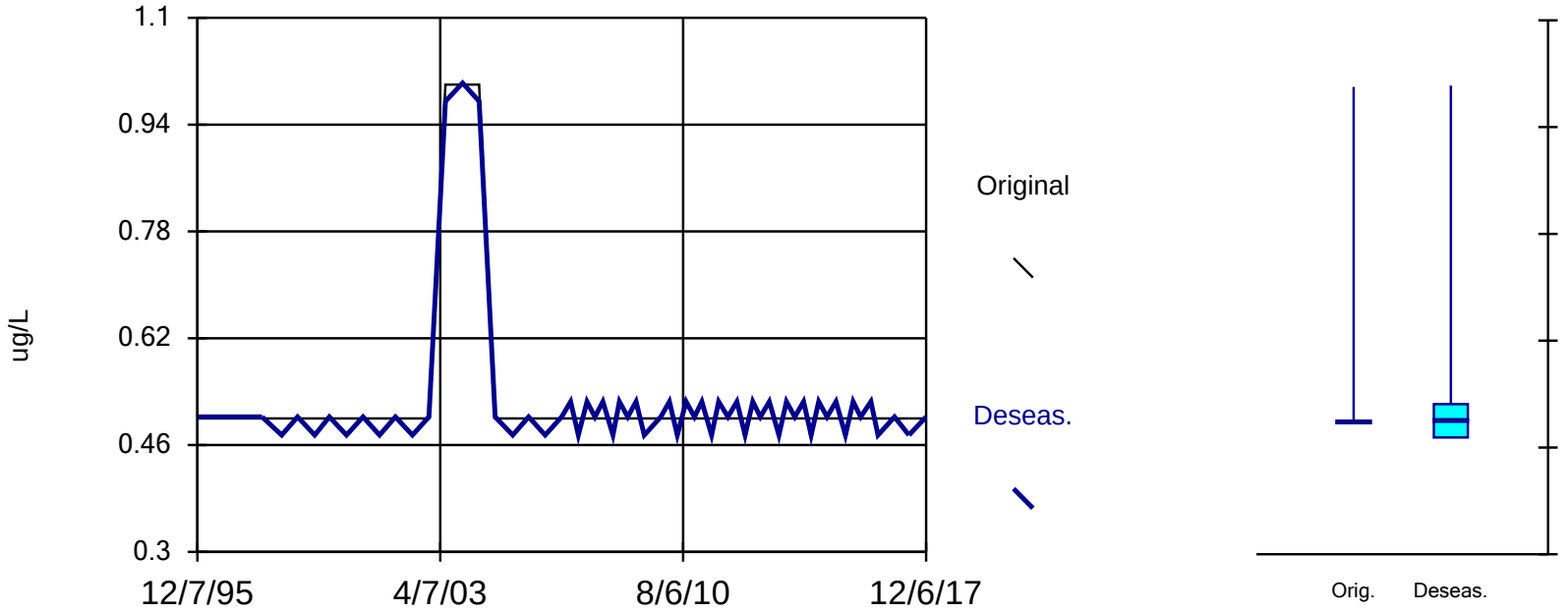


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-6

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.976
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.2817
Adjusted Kruskal-Wallis statistic (H') = 1.976

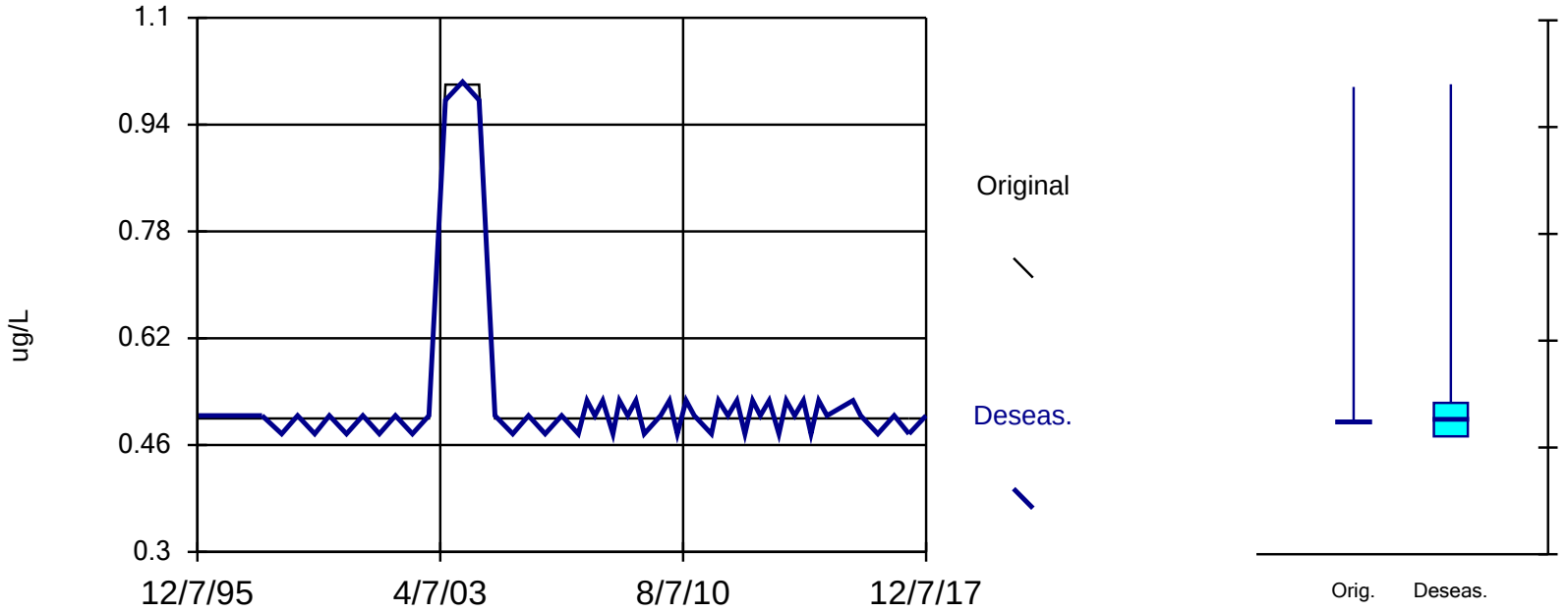


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-8

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.642
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.2498
Adjusted Kruskal-Wallis statistic (H') = 1.642

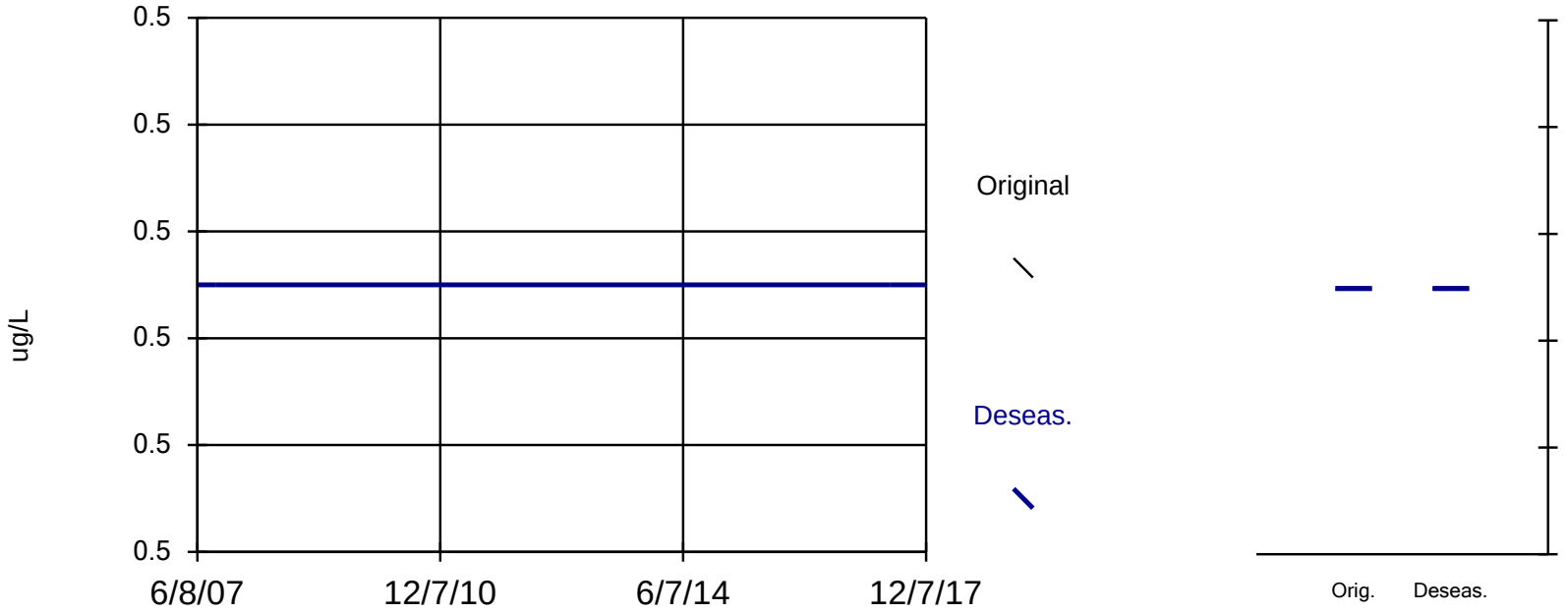


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-9

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

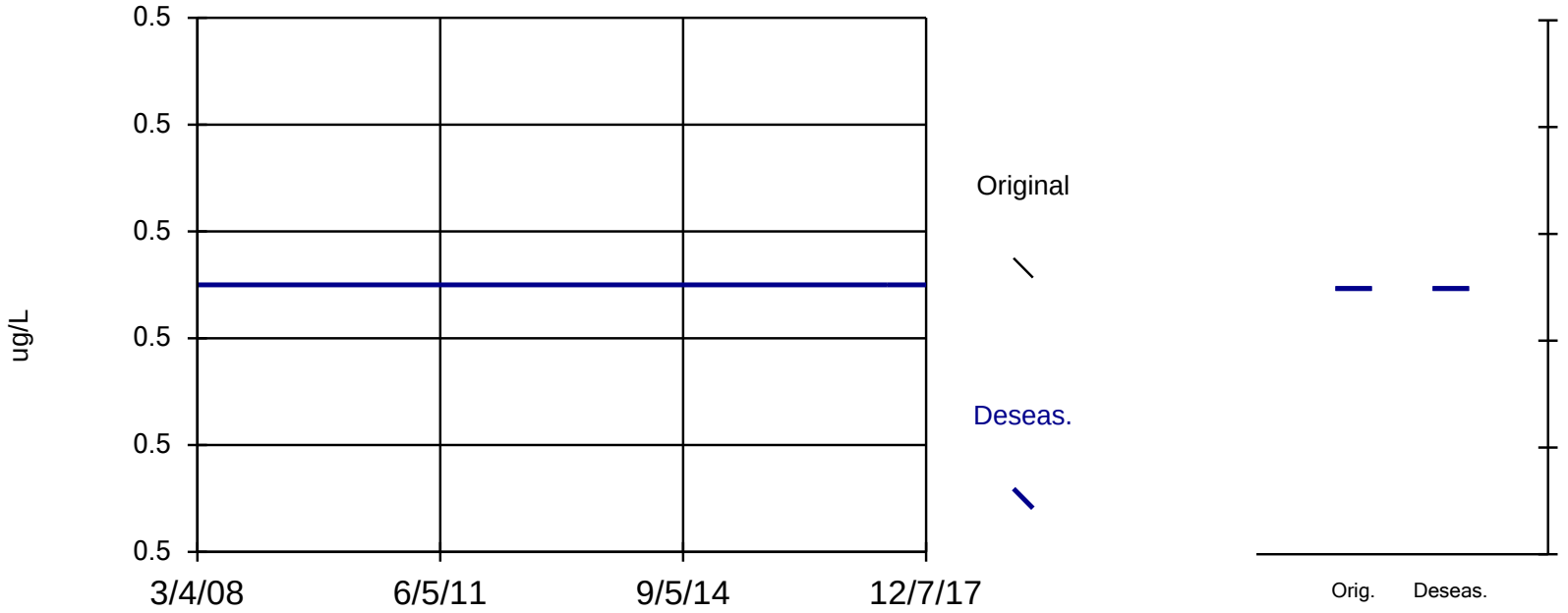


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-10D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

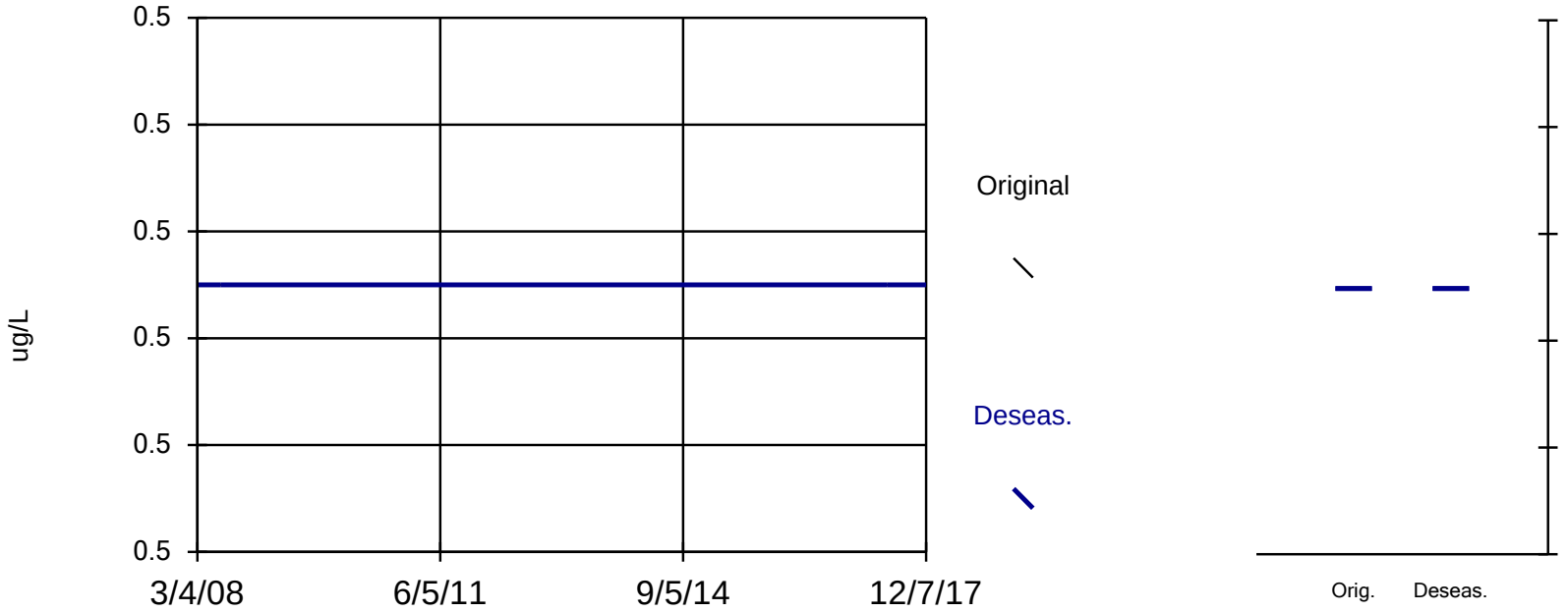


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-11I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

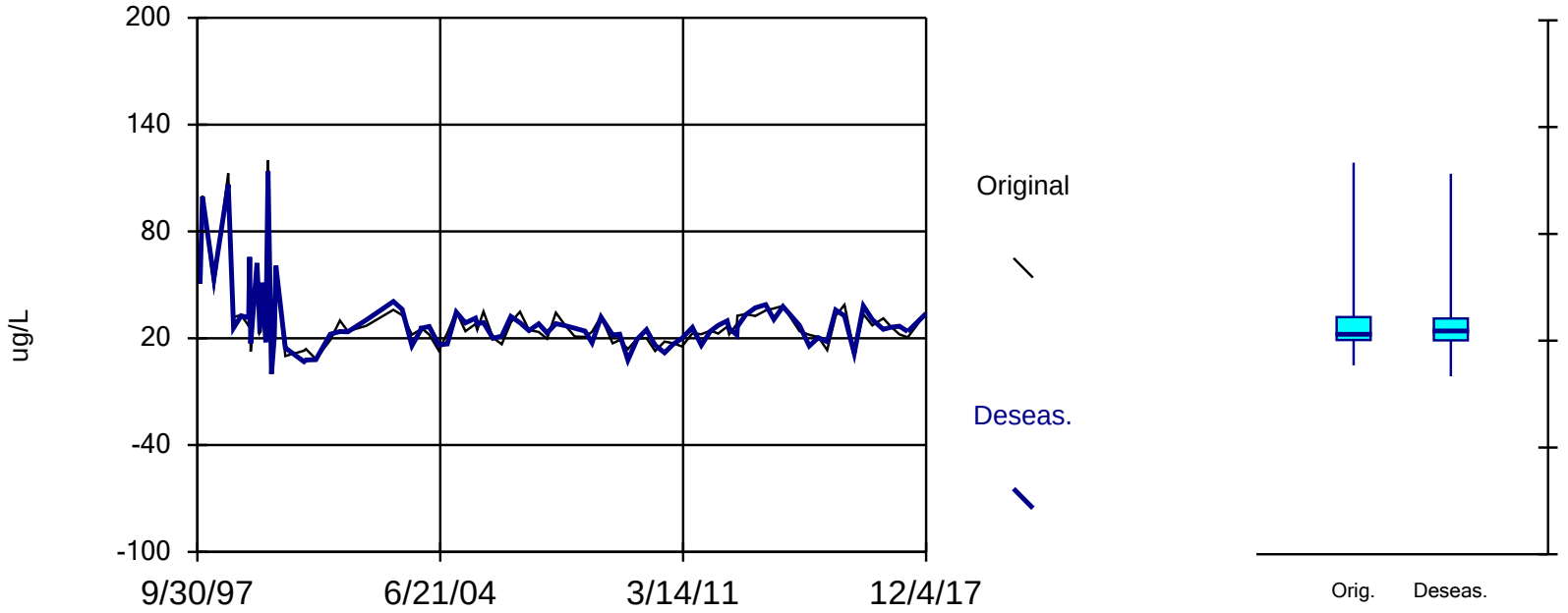


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: I-1

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 3.379
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 16 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 3.378
Adjusted Kruskal-Wallis statistic (H') = 3.379

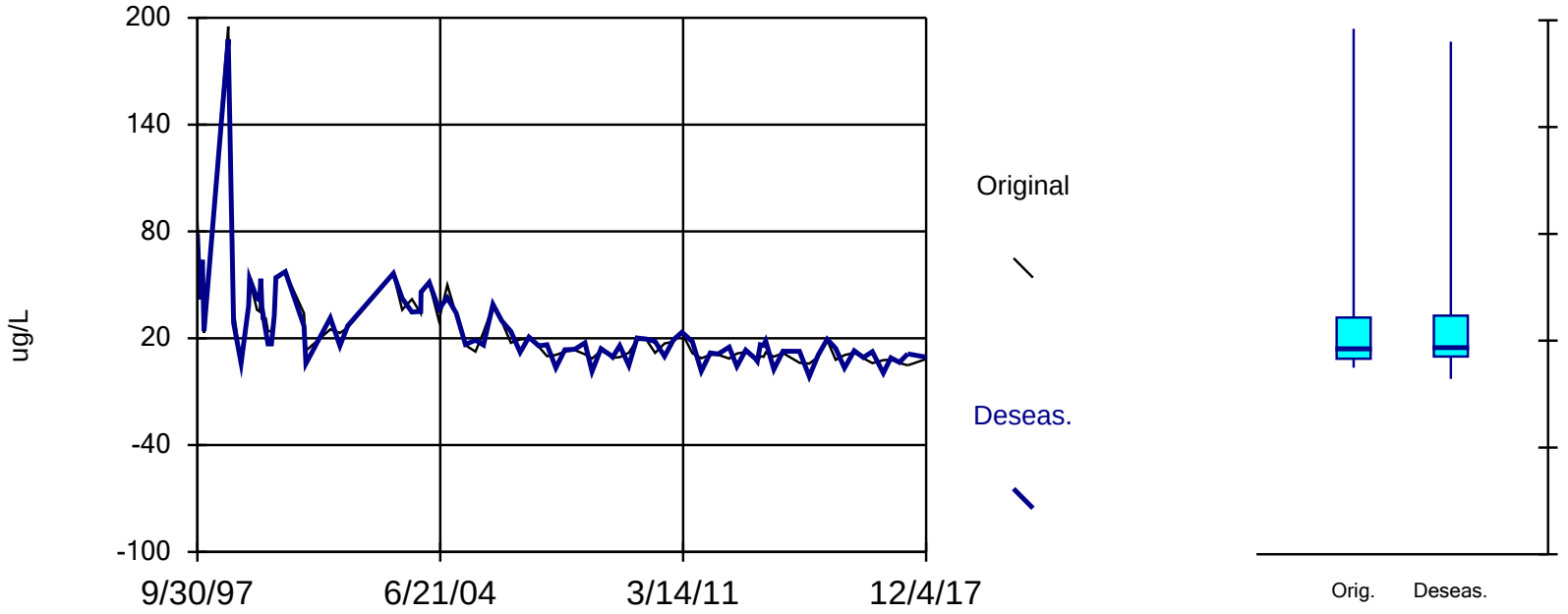


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: I-2

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.775
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 15 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.775
Adjusted Kruskal-Wallis statistic (H') = 2.775

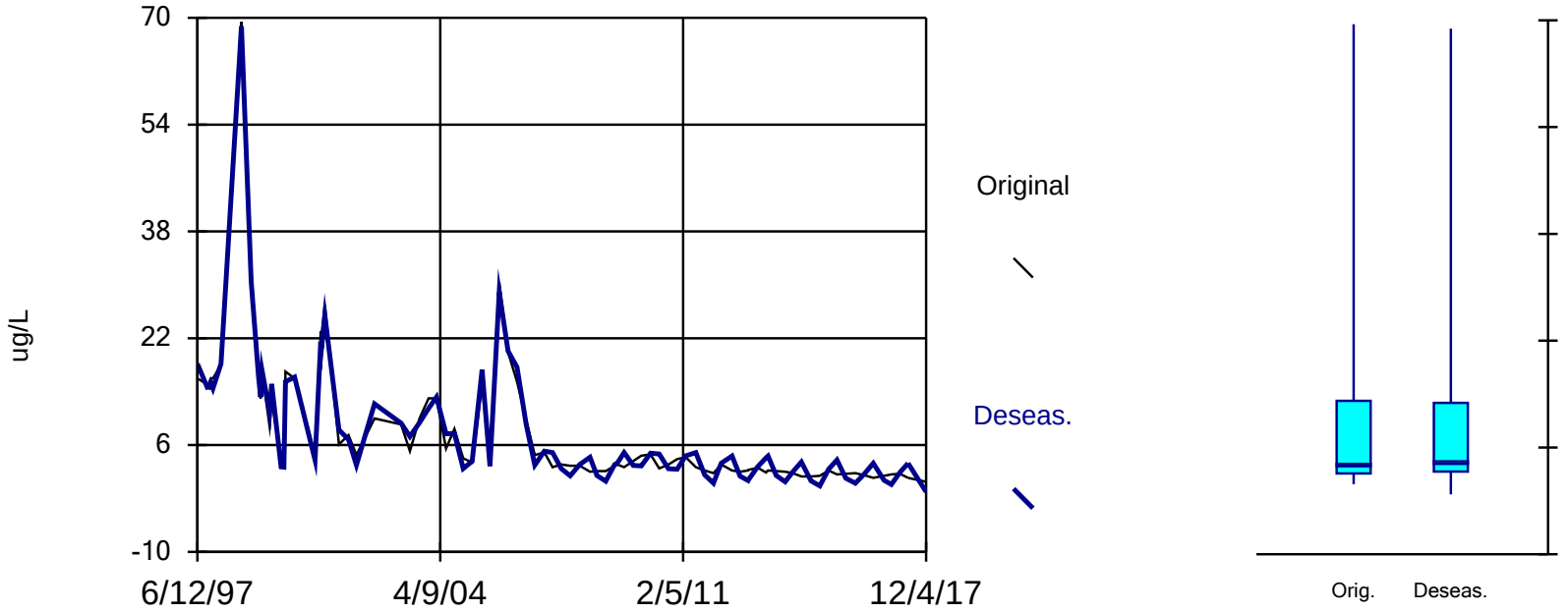


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: I-3

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.964
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 20 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.962
Adjusted Kruskal-Wallis statistic (H') = 1.964

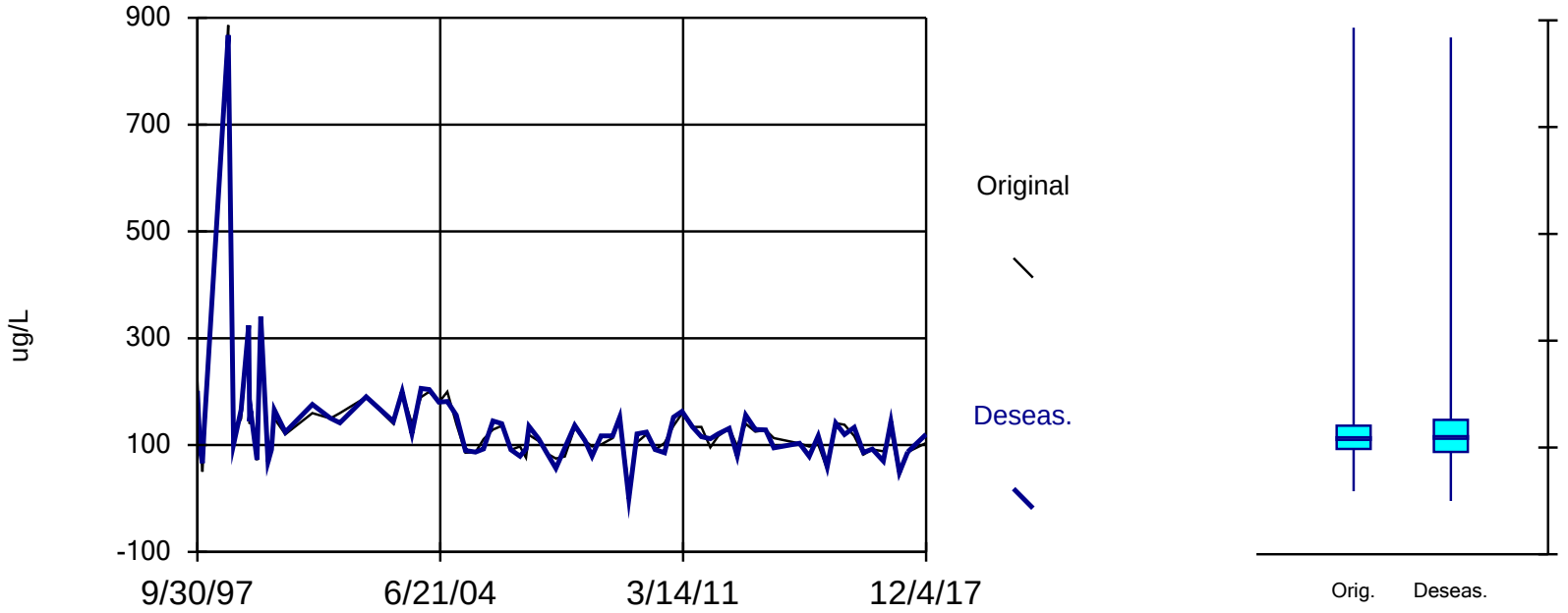


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: I-4

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0.2705
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 15 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.2703
Adjusted Kruskal-Wallis statistic (H') = 0.2705

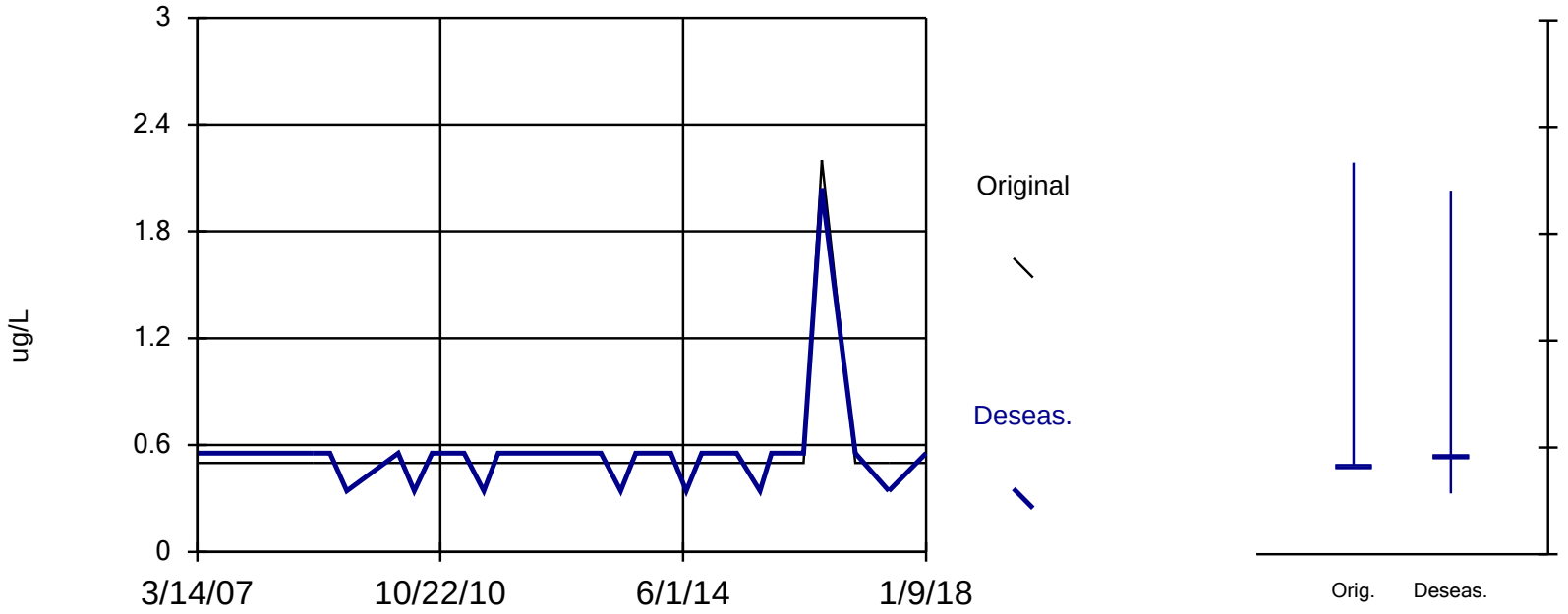


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: S-2DB

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.875
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.2695
Adjusted Kruskal-Wallis statistic (H') = 2.875

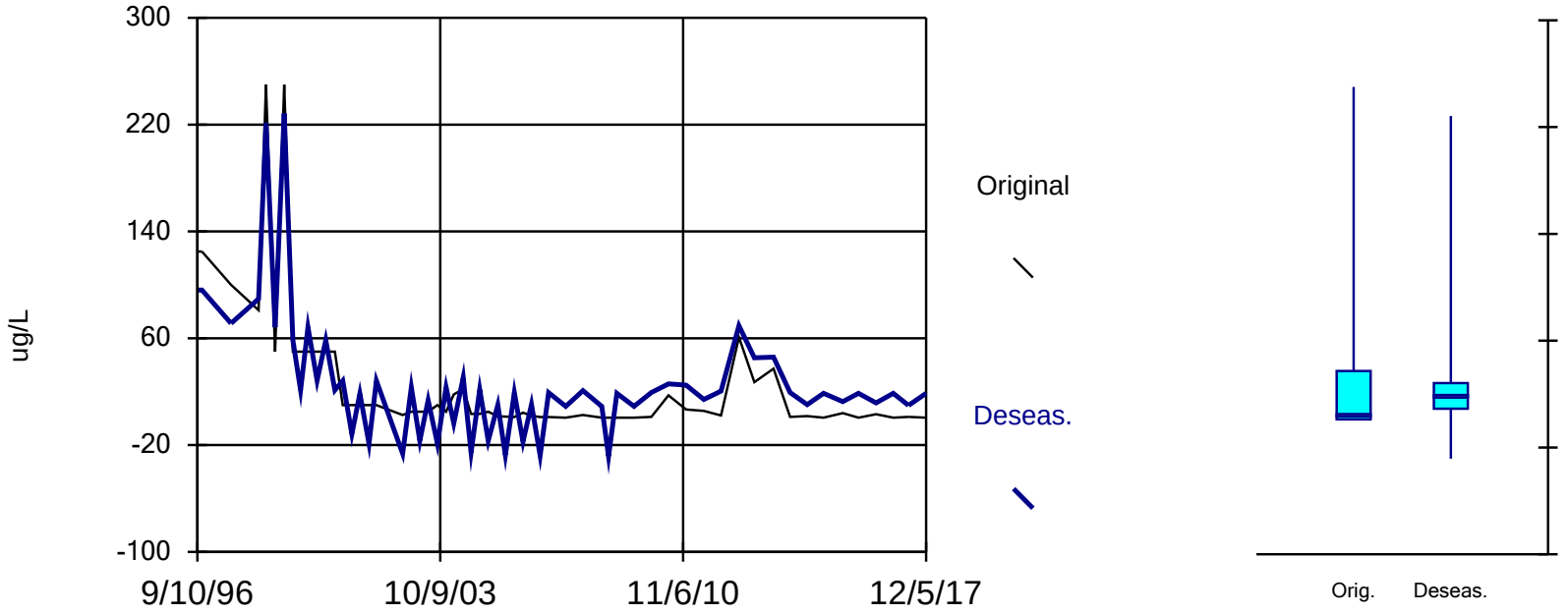


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: SM-1

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 7.75
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 10 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 7.695
Adjusted Kruskal-Wallis statistic (H') = 7.75

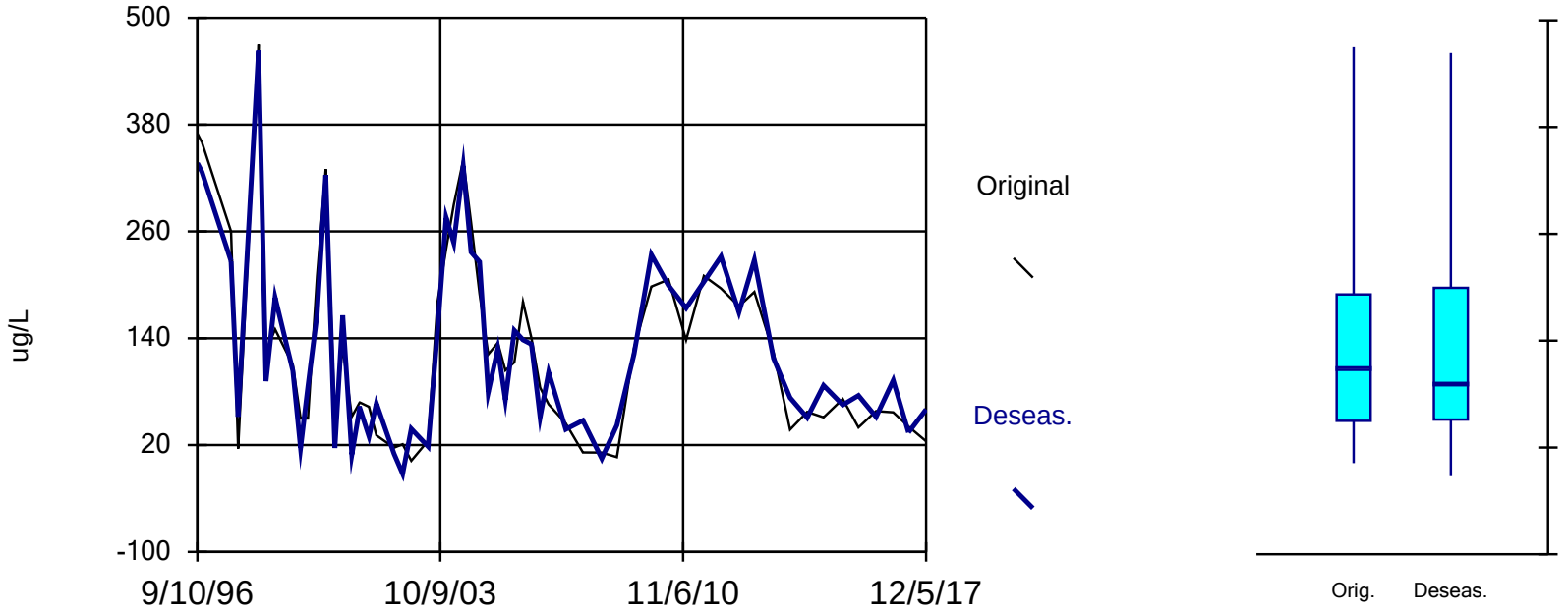


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: SM-2

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 4.804
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 4.803
Adjusted Kruskal-Wallis statistic (H') = 4.804

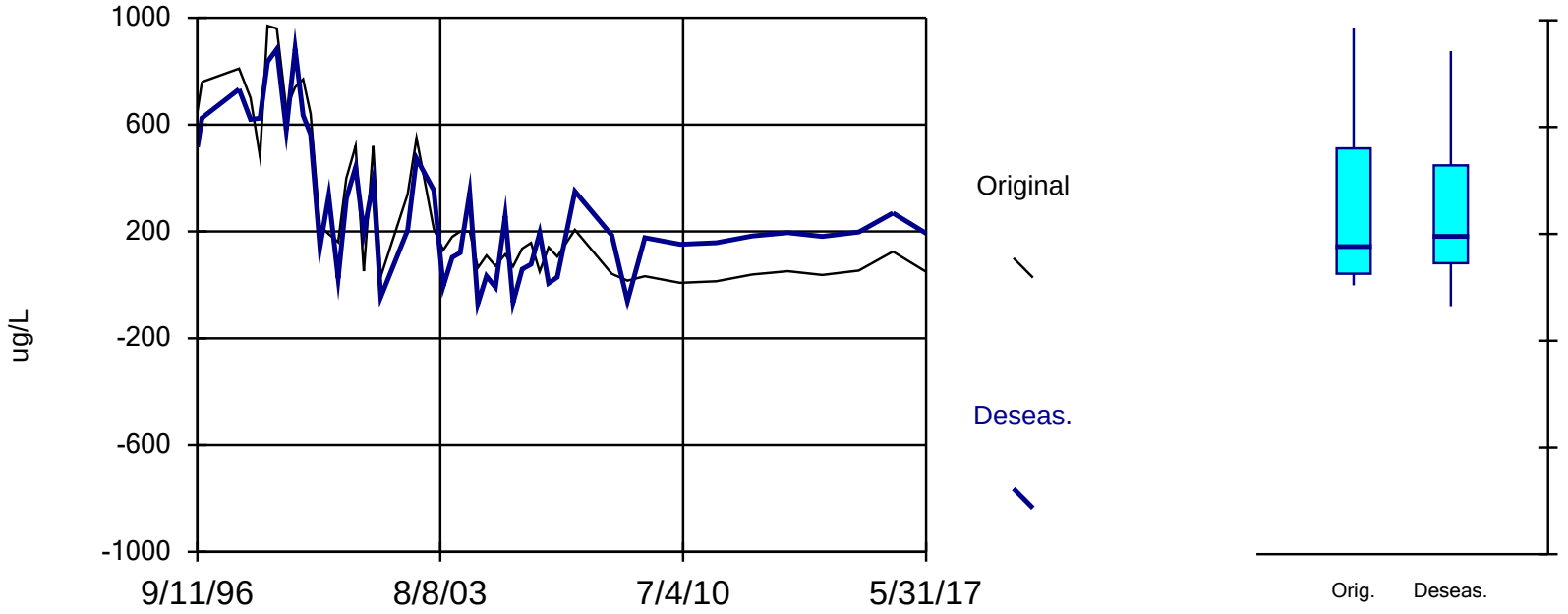


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: SM-3

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 11.44
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 11.44
Adjusted Kruskal-Wallis statistic (H') = 11.44

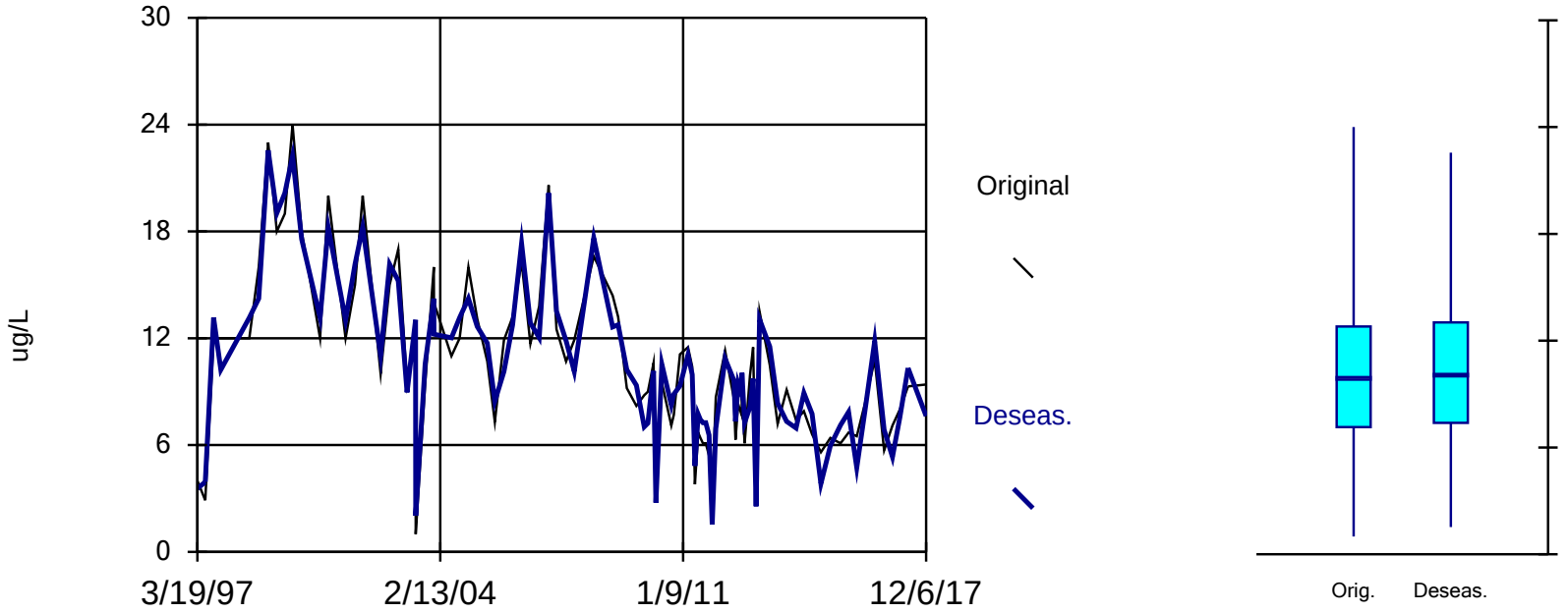


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: W-6

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 6.086
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 16 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 6.082
Adjusted Kruskal-Wallis statistic (H') = 6.086

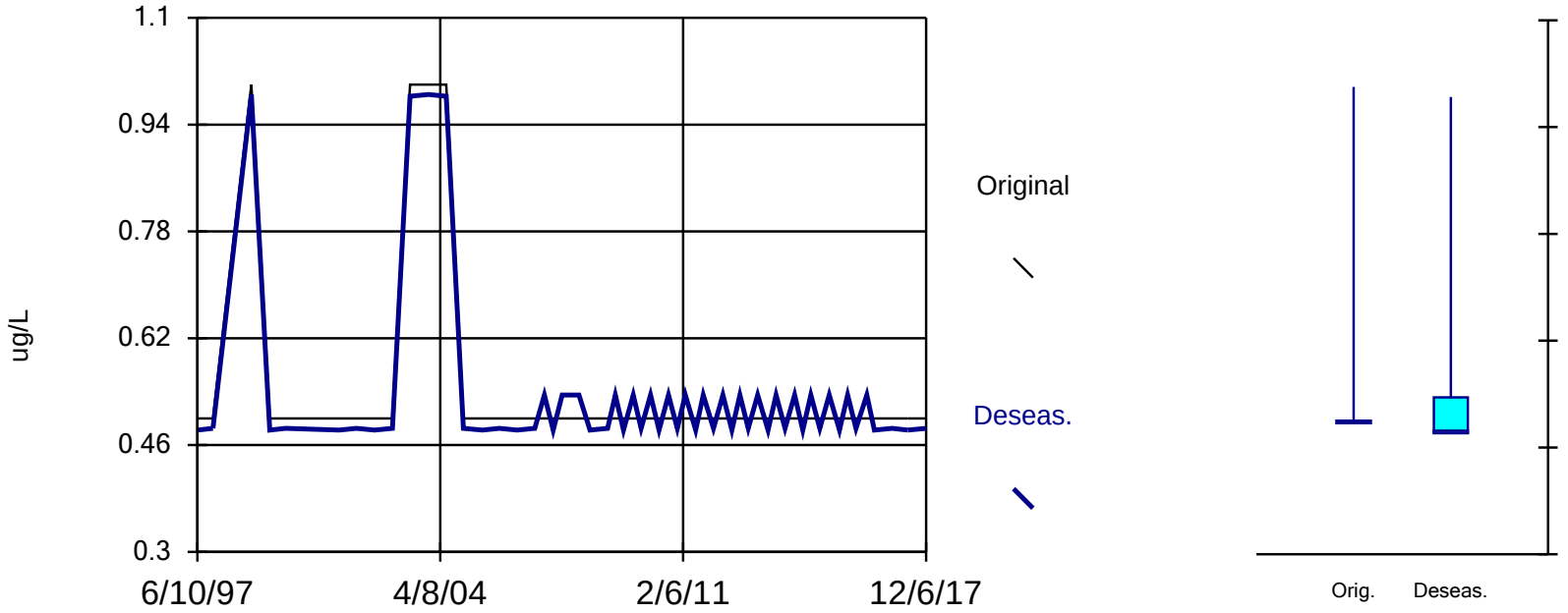


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: W-7

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.955
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.3828
Adjusted Kruskal-Wallis statistic (H') = 1.955

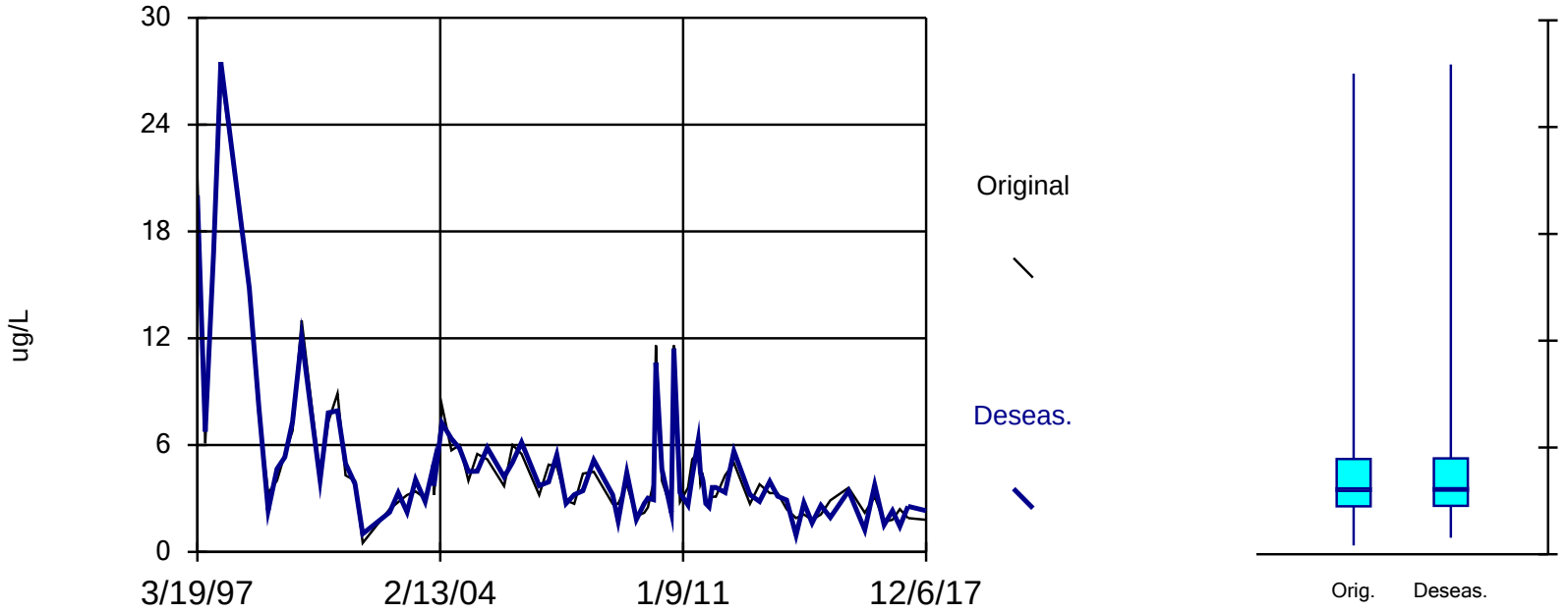


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: W-12

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 6.908
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 21 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 6.902
Adjusted Kruskal-Wallis statistic (H') = 6.908

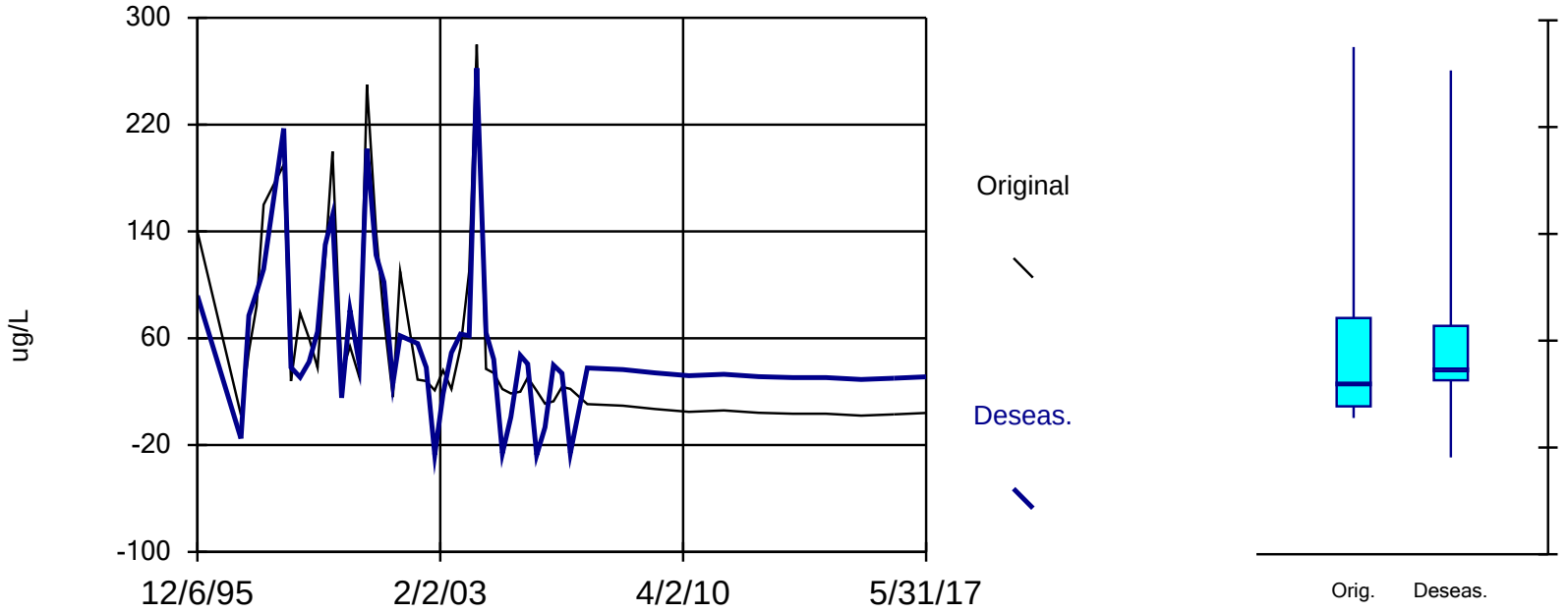


Constituent: 1,2-DCE Analysis Run 12/28/2018 2:55 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-1I

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 11.7
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 5 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 11.7
Adjusted Kruskal-Wallis statistic (H') = 11.7

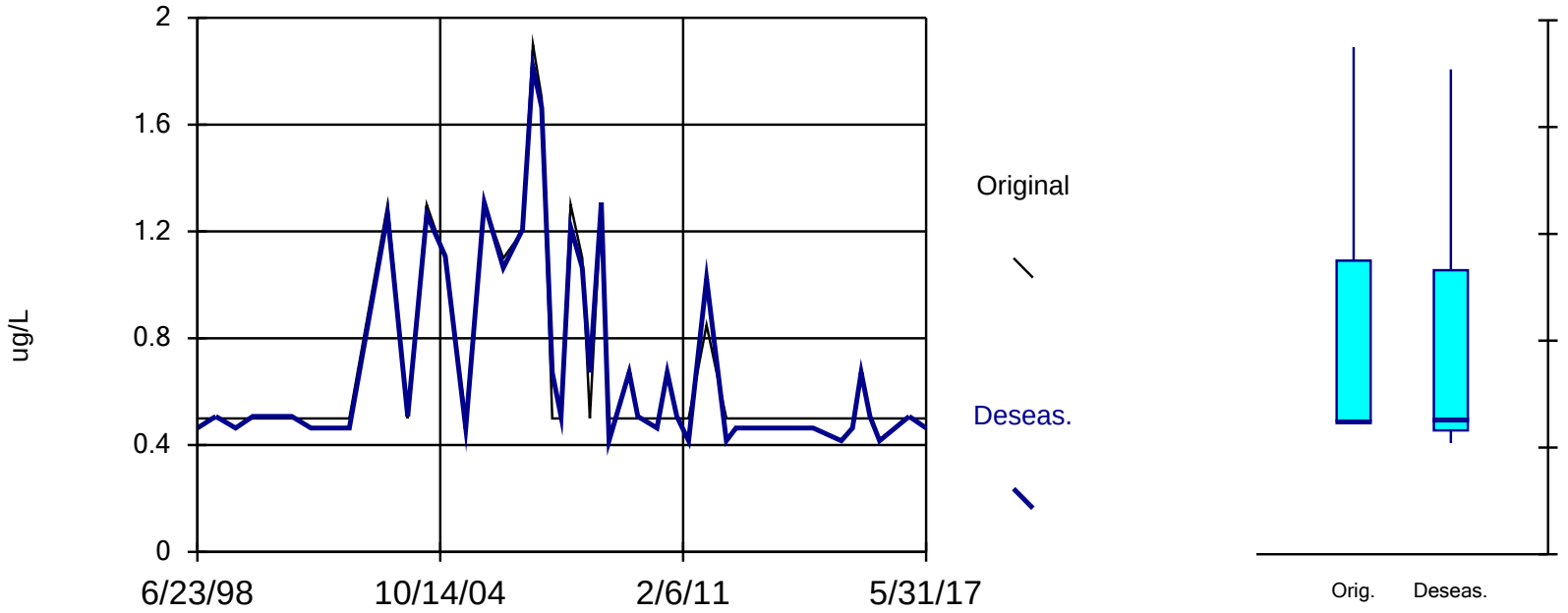


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-2D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0.9758
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.6287
Adjusted Kruskal-Wallis statistic (H') = 0.9758

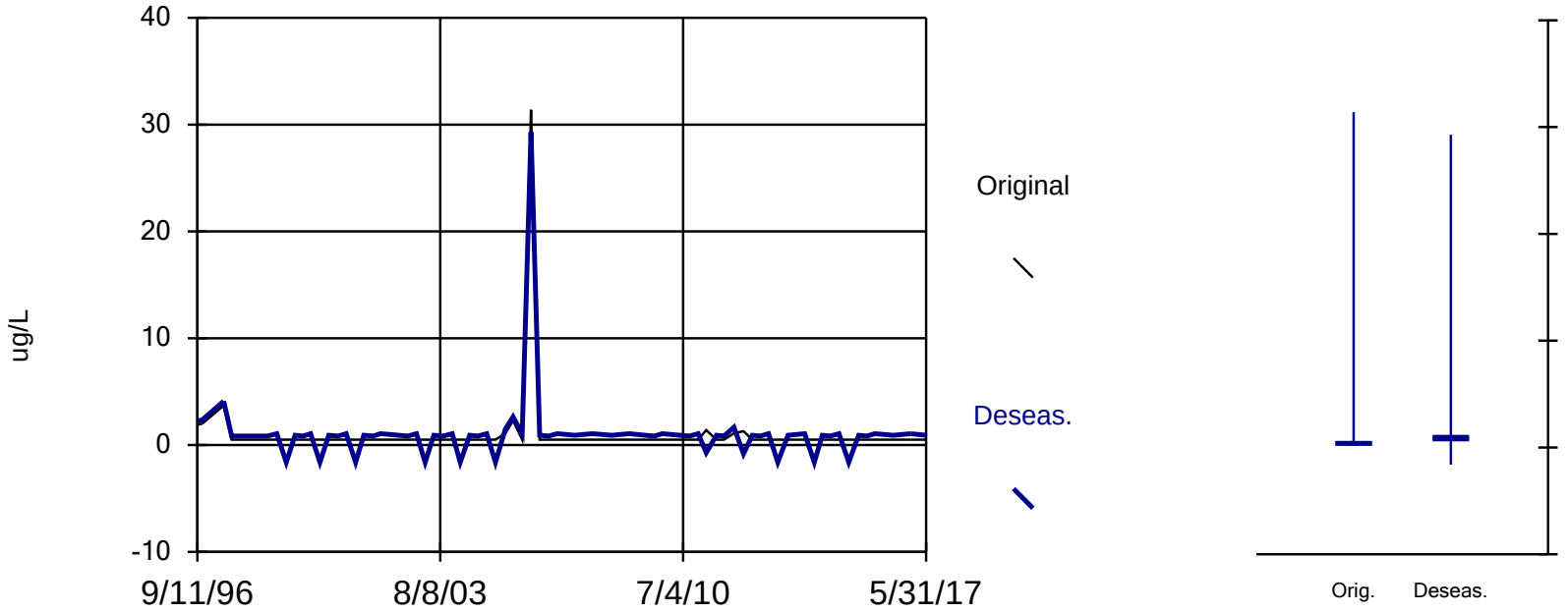


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-2S

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 3.105
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.064
Adjusted Kruskal-Wallis statistic (H') = 3.105

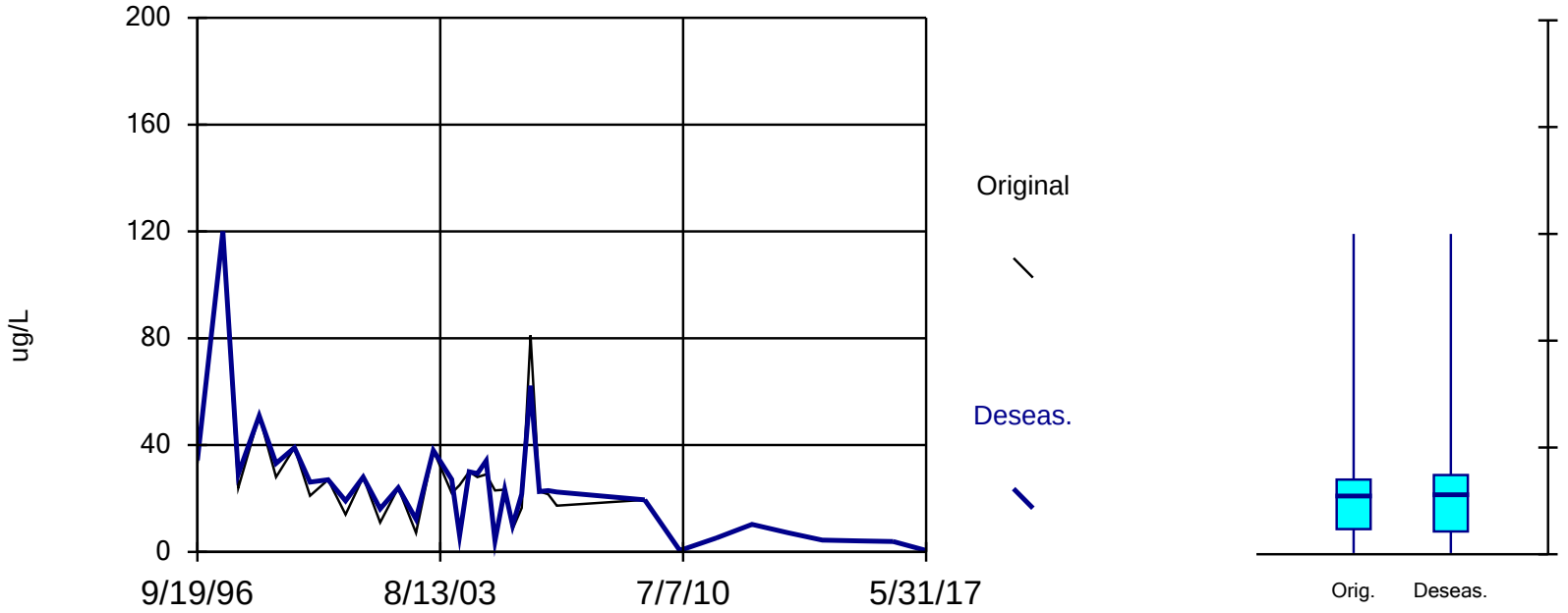


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-3I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.255
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.254
Adjusted Kruskal-Wallis statistic (H') = 2.255

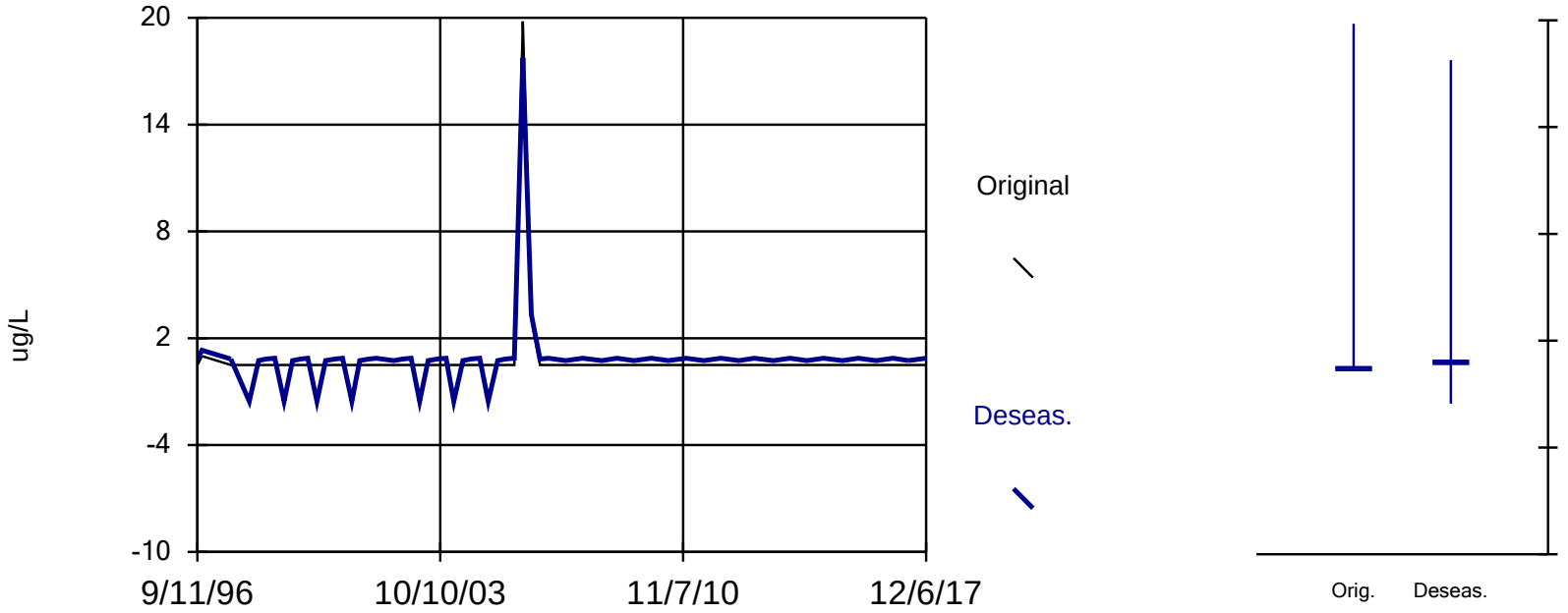


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-4D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.303
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.3286
Adjusted Kruskal-Wallis statistic (H') = 2.303

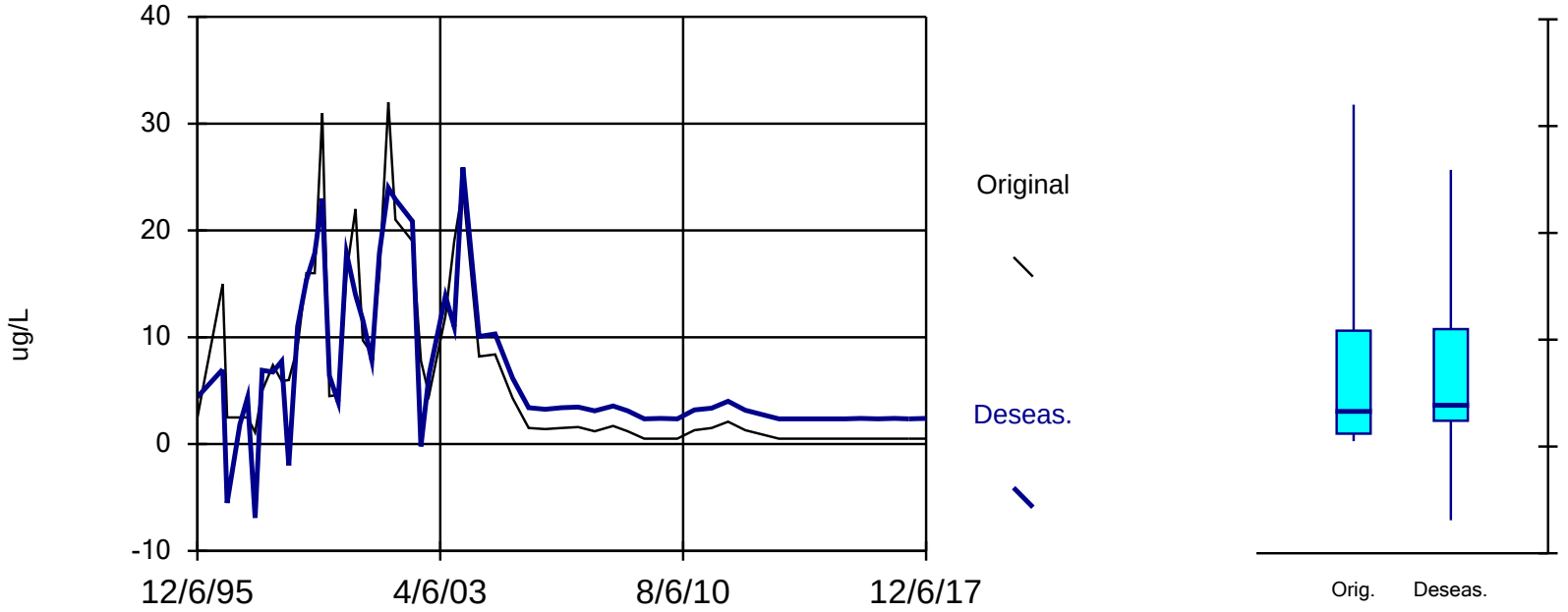


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-4I

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 8.901
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 8 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 8.816
Adjusted Kruskal-Wallis statistic (H') = 8.901

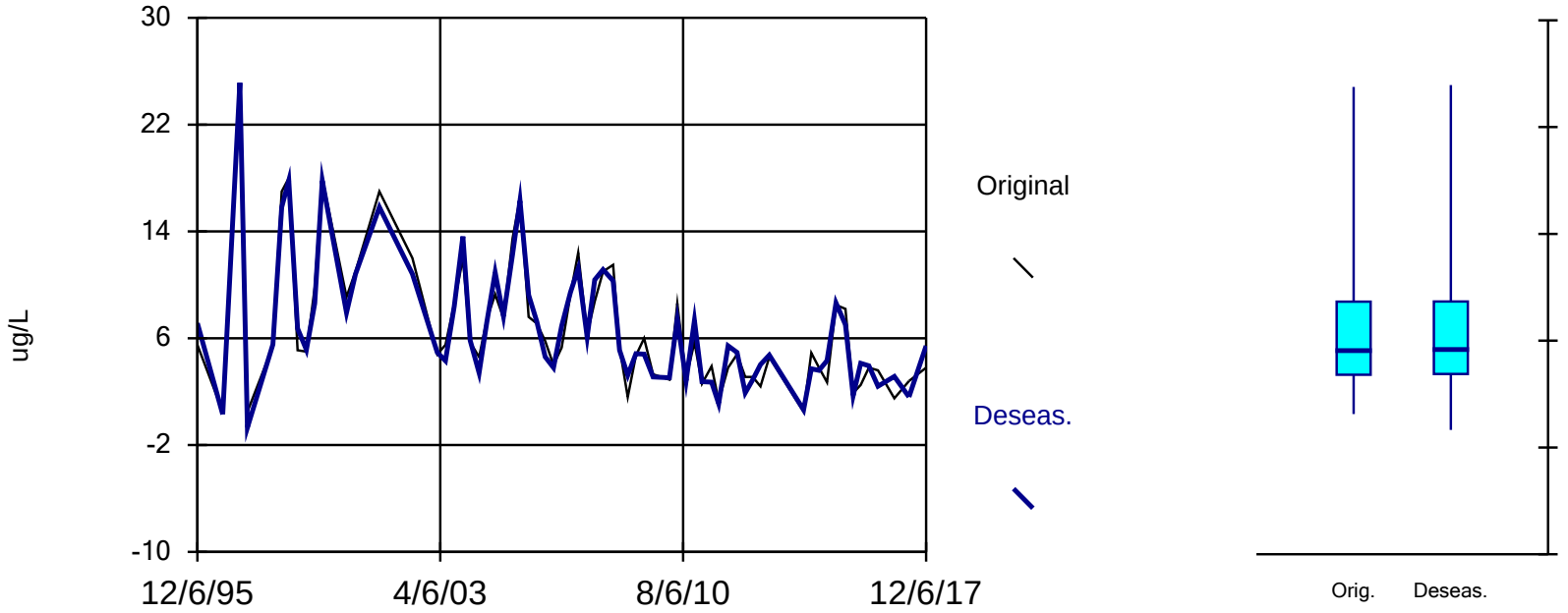


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-4S

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 3.476
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 14 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 3.475
Adjusted Kruskal-Wallis statistic (H') = 3.476

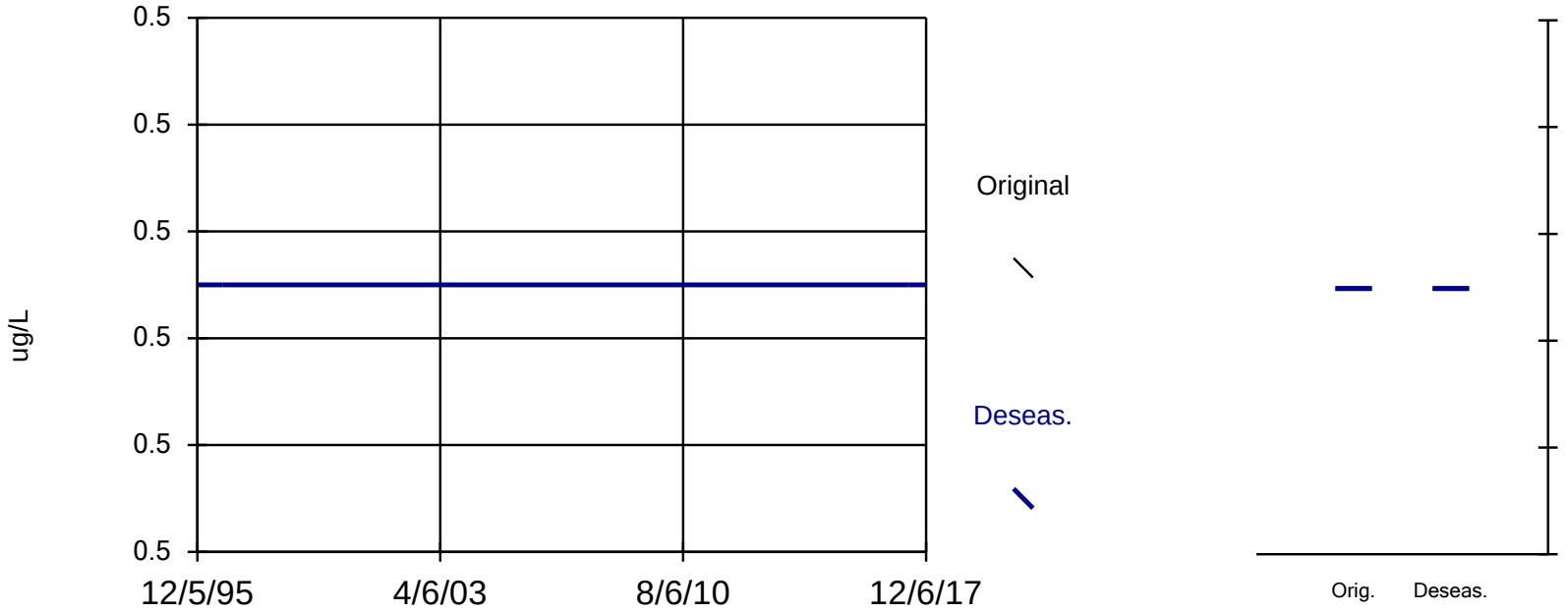


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-5D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 14 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

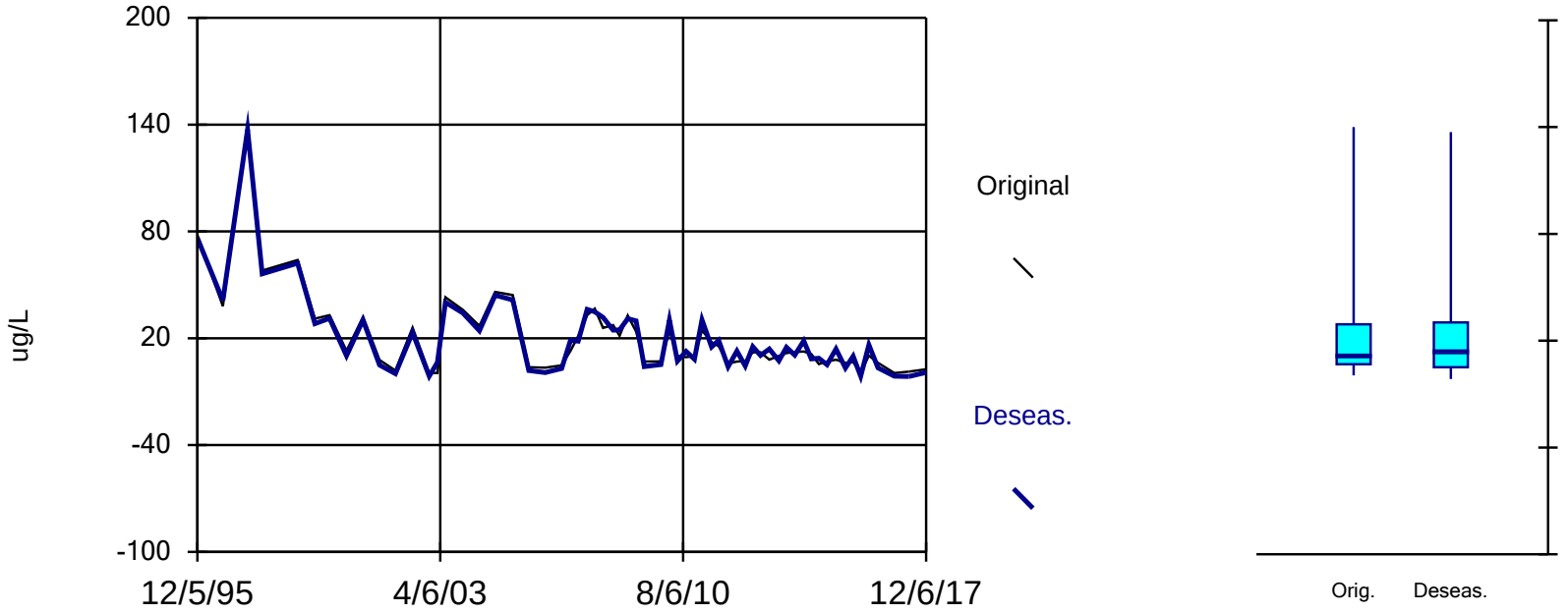


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-6I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0.2488
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 6 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.2487
Adjusted Kruskal-Wallis statistic (H') = 0.2488

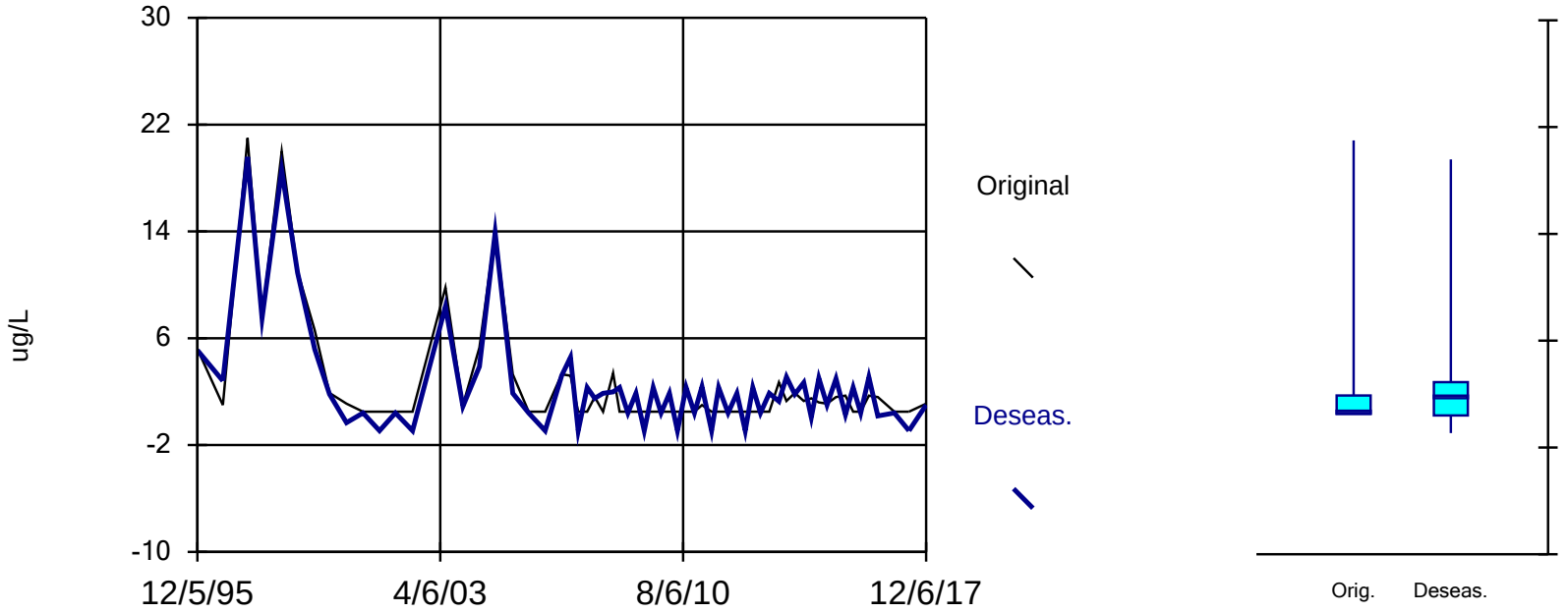


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-6S

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 4.758
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 8 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 4.162
Adjusted Kruskal-Wallis statistic (H') = 4.758

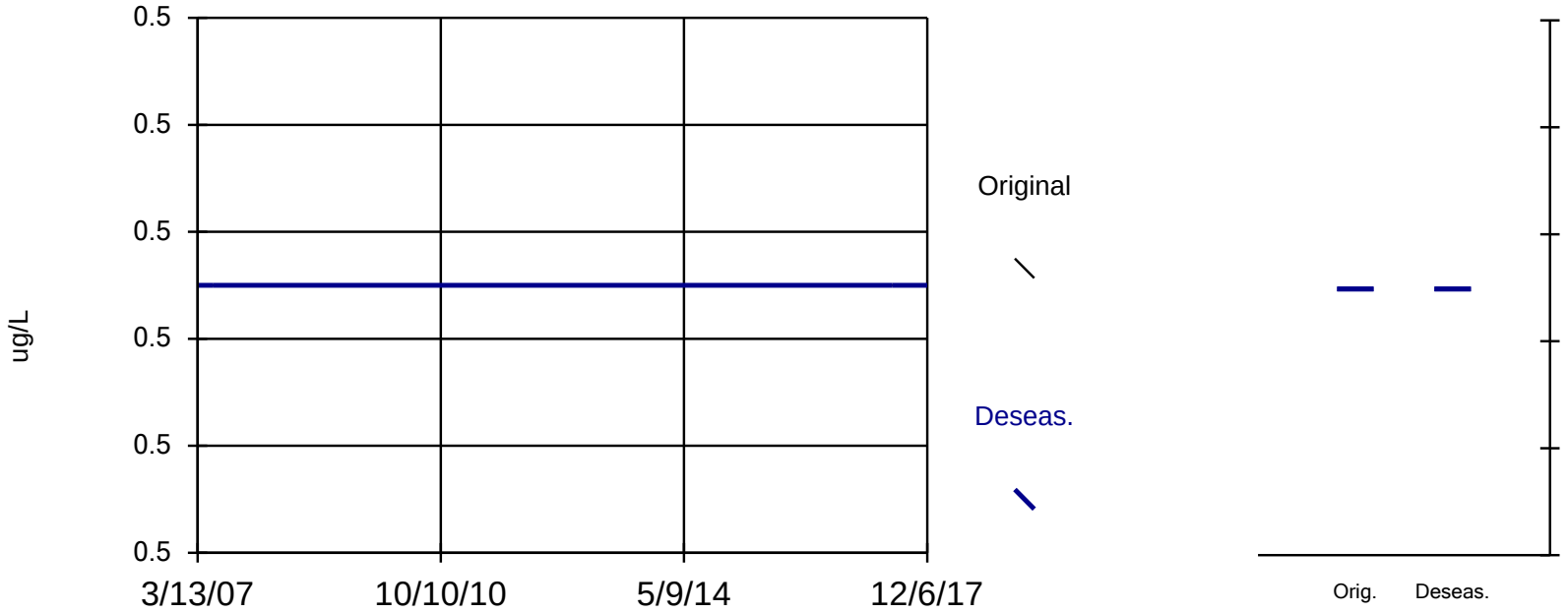


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-8D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 8 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

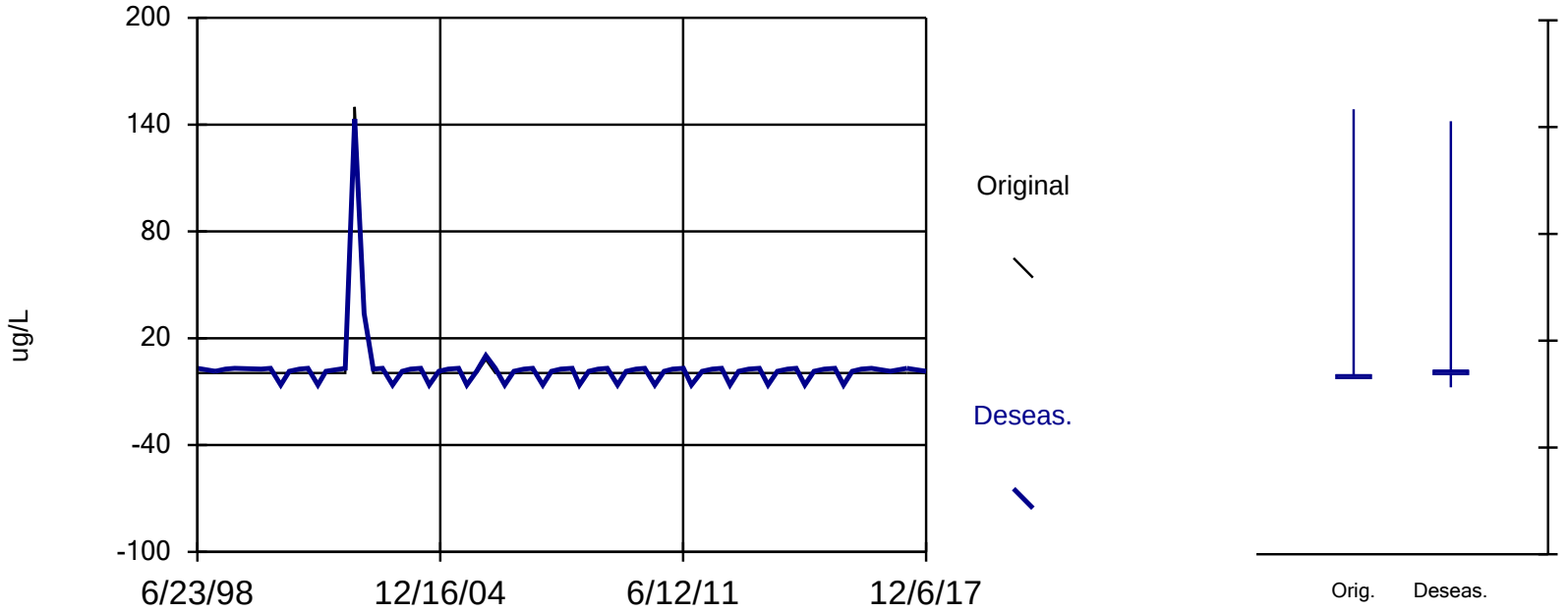


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-8I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.216
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.1457
Adjusted Kruskal-Wallis statistic (H') = 1.216

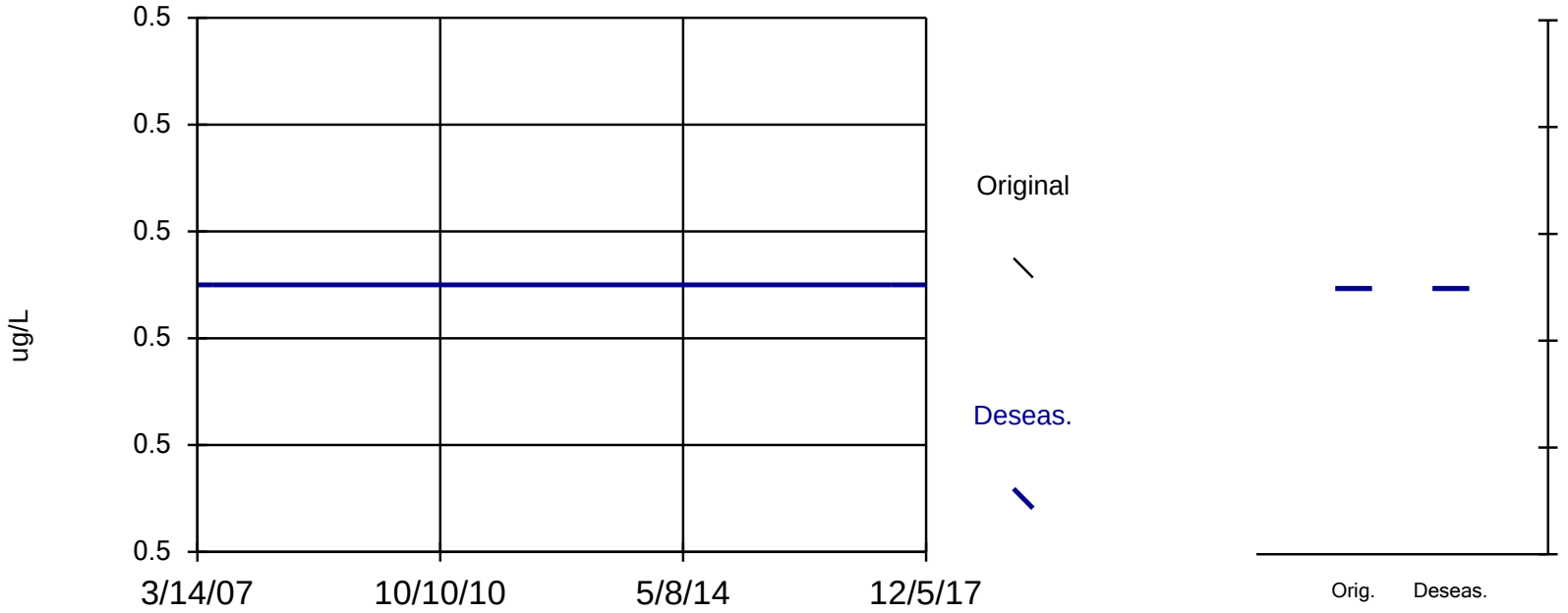


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-13D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

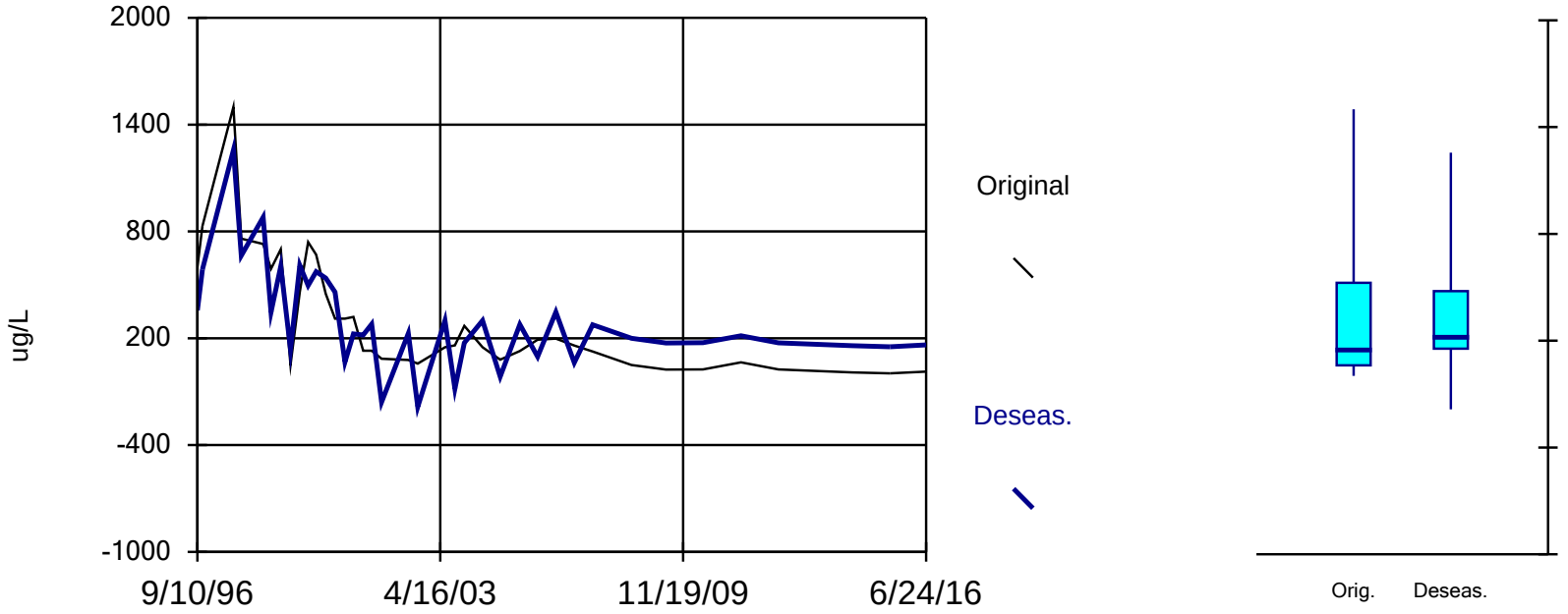


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-15

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 11.5
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 11.5
Adjusted Kruskal-Wallis statistic (H') = 11.5

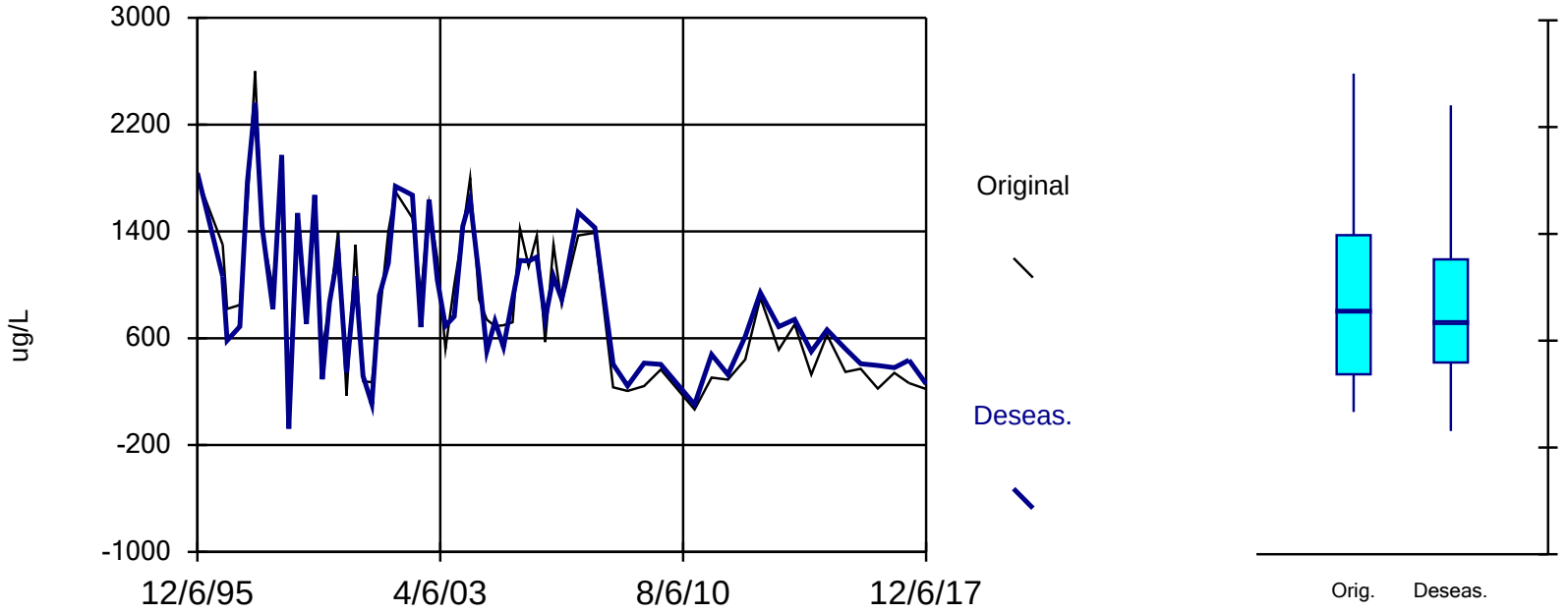


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-16

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 4.372
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 6 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 4.37
Adjusted Kruskal-Wallis statistic (H') = 4.372

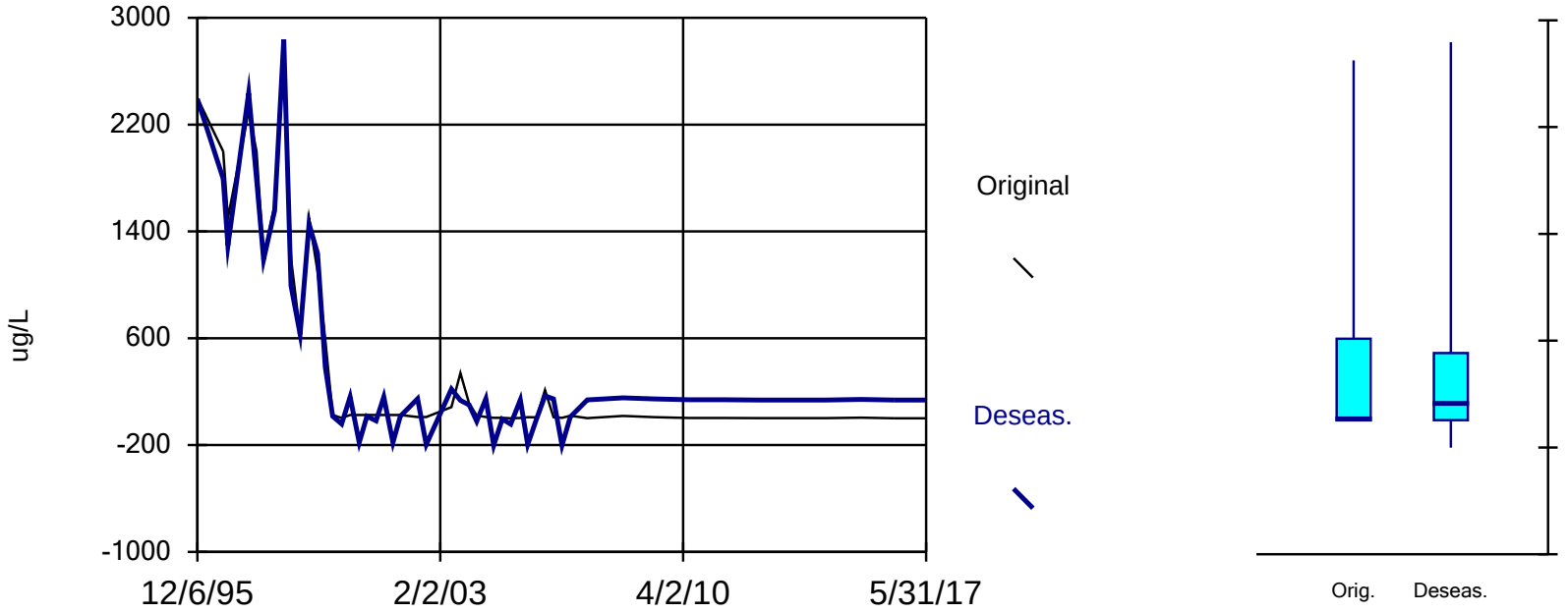


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-17

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 7.243
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 7 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 7.209
Adjusted Kruskal-Wallis statistic (H') = 7.243

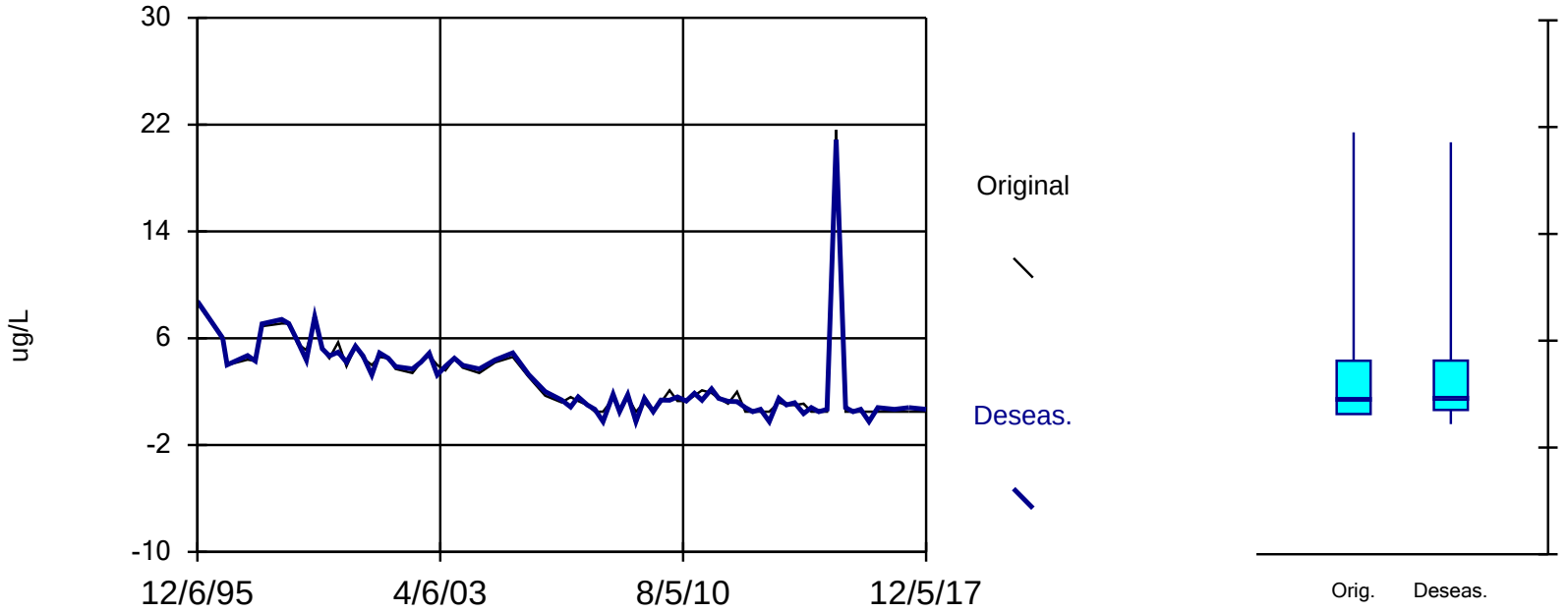


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: B-18

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0.1125
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 15 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.1103
Adjusted Kruskal-Wallis statistic (H') = 0.1125

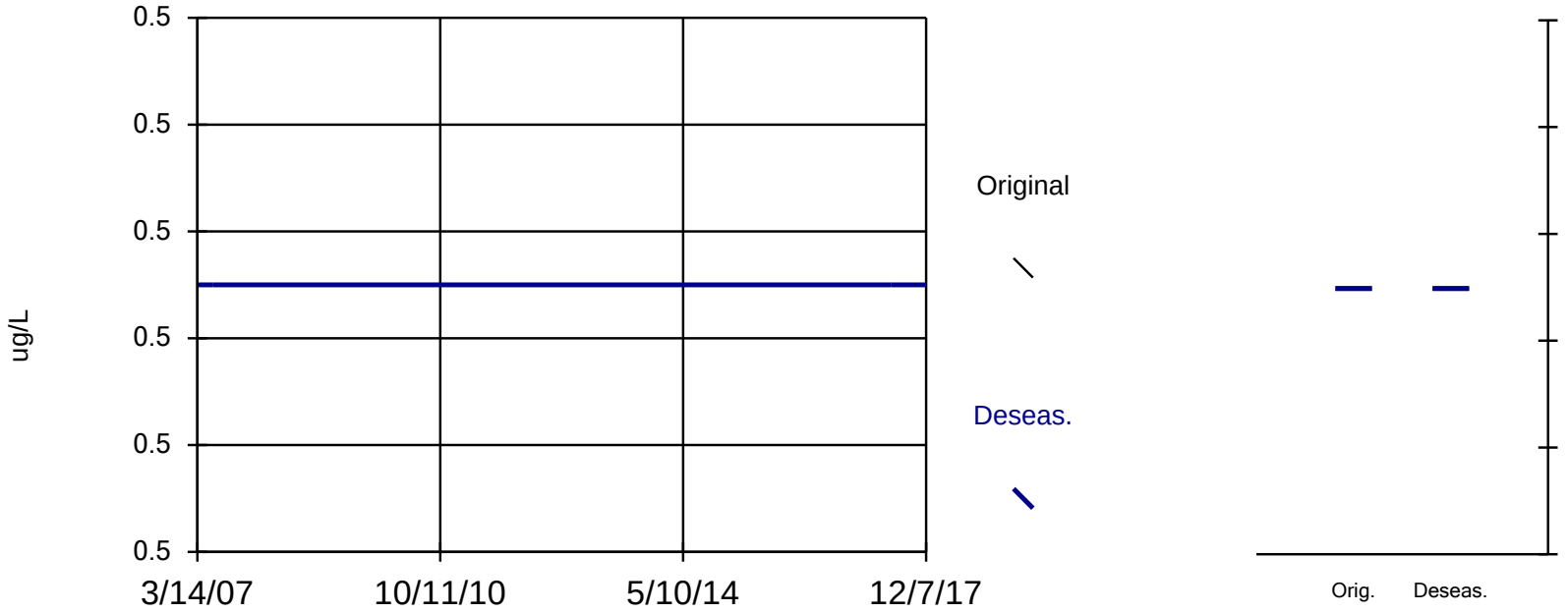


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-1D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 15 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

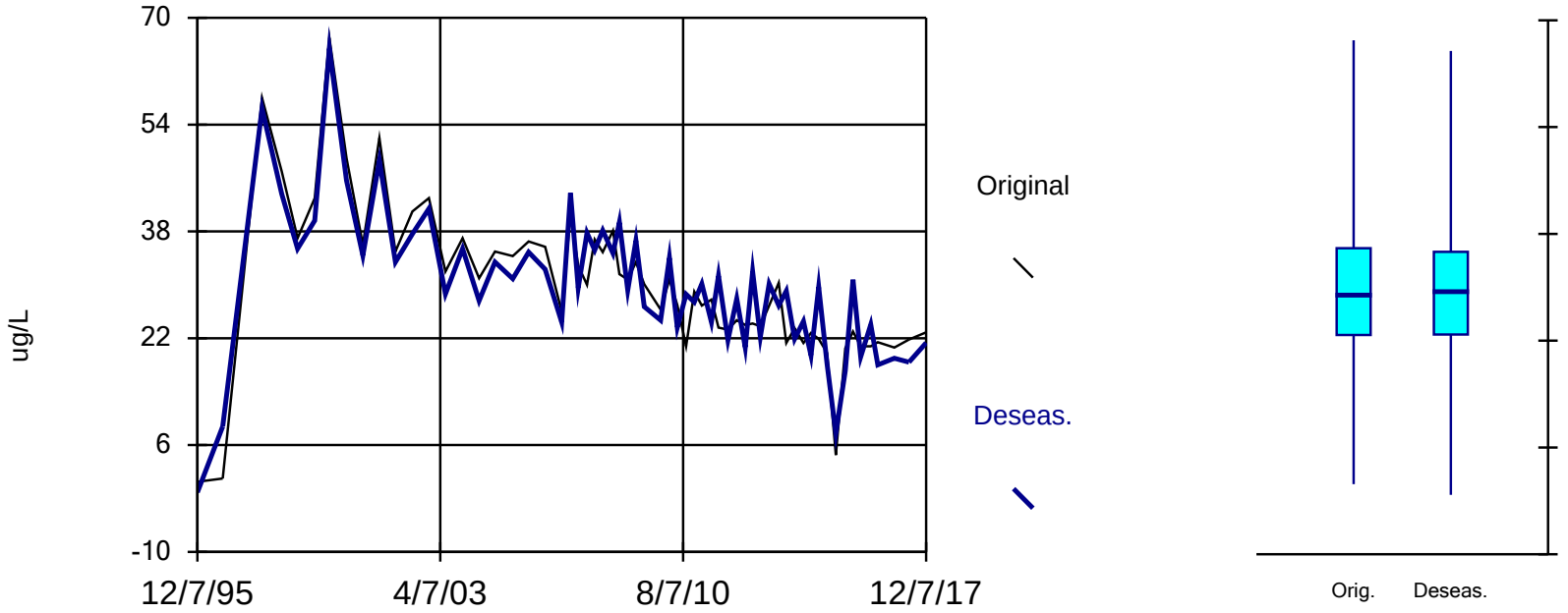


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-1I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 7.286
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 7 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 7.284
Adjusted Kruskal-Wallis statistic (H') = 7.286

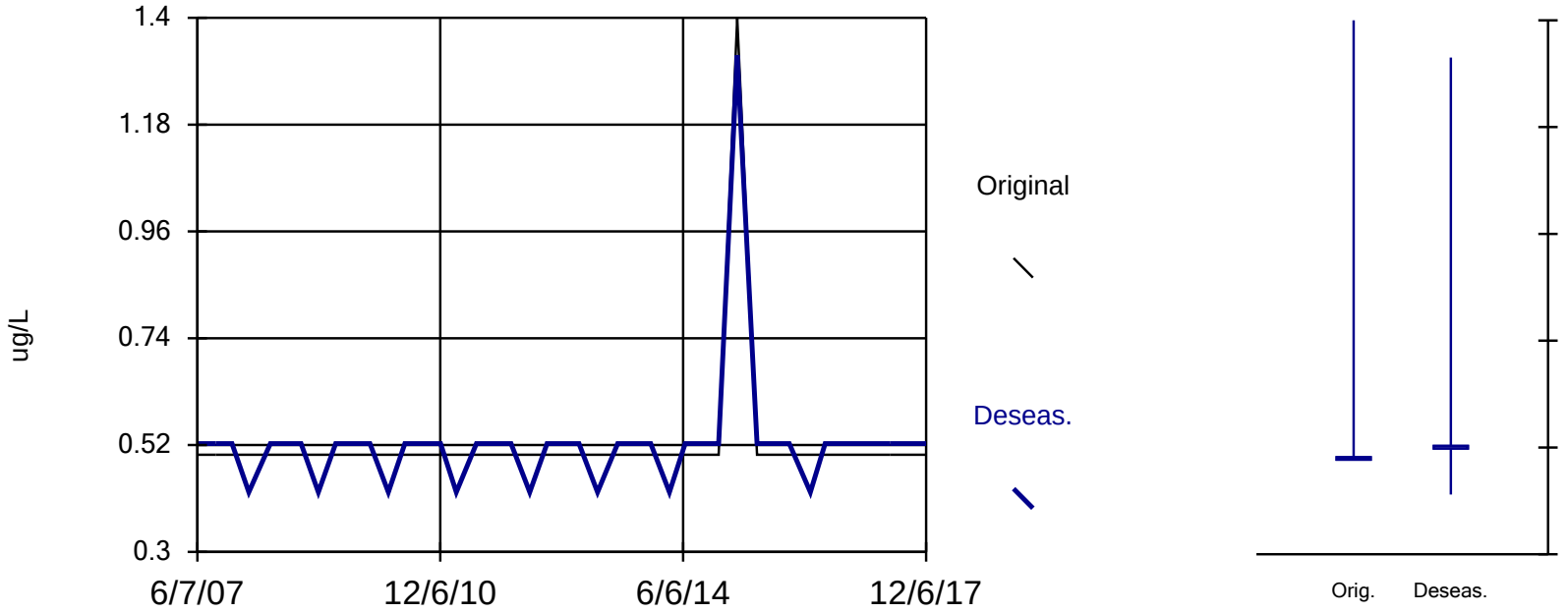


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-3D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 3.333
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.25
Adjusted Kruskal-Wallis statistic (H') = 3.333

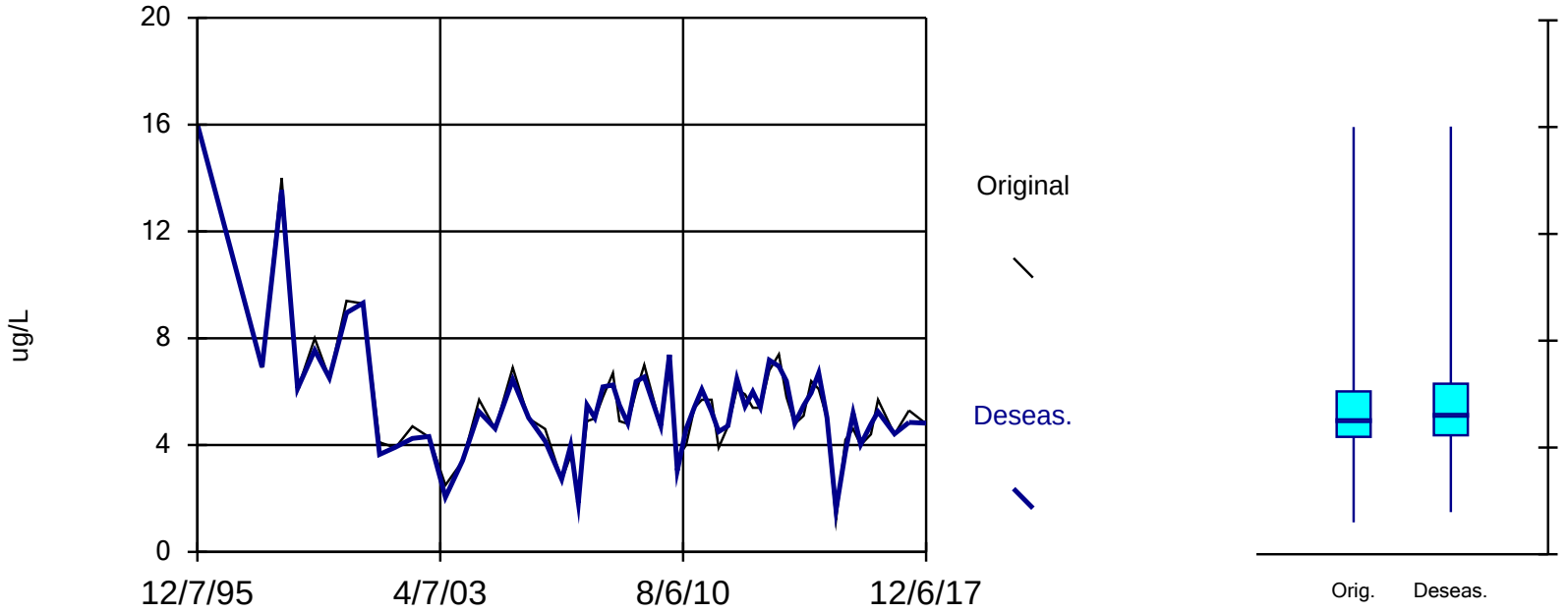


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-6

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.301
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 14 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.298
Adjusted Kruskal-Wallis statistic (H') = 2.301

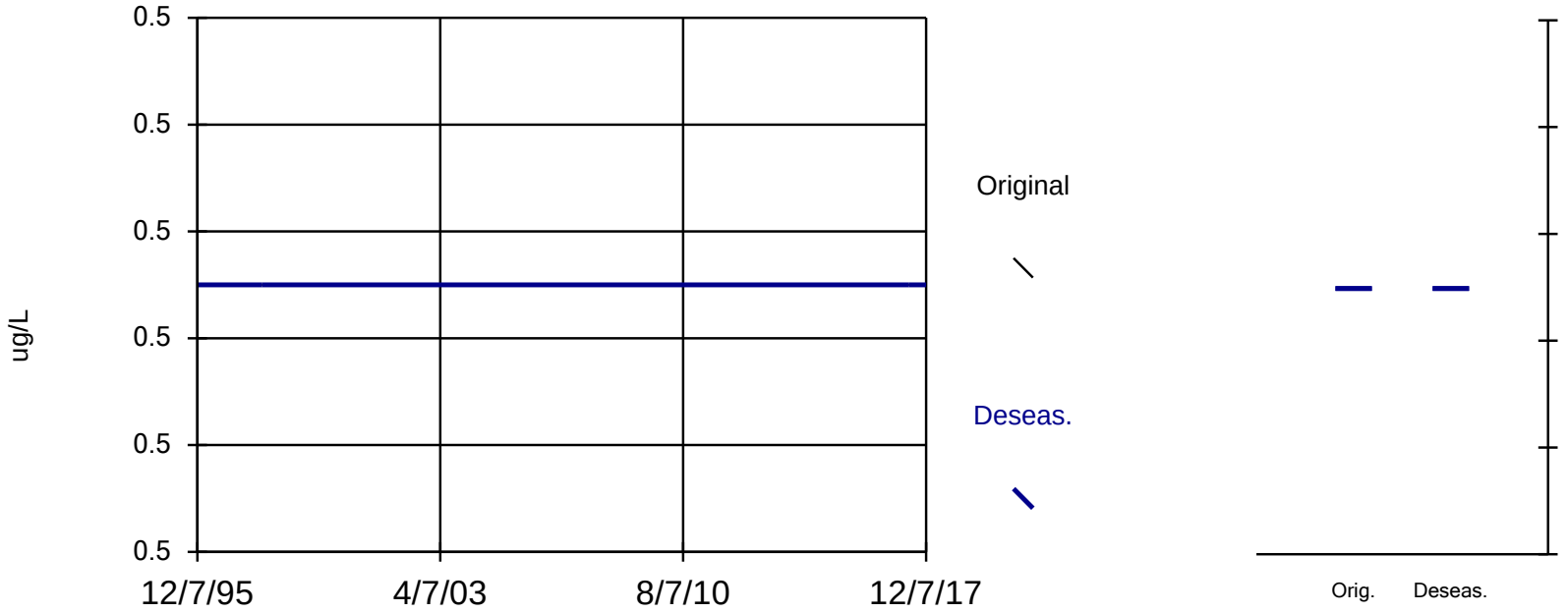


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-8

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 14 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

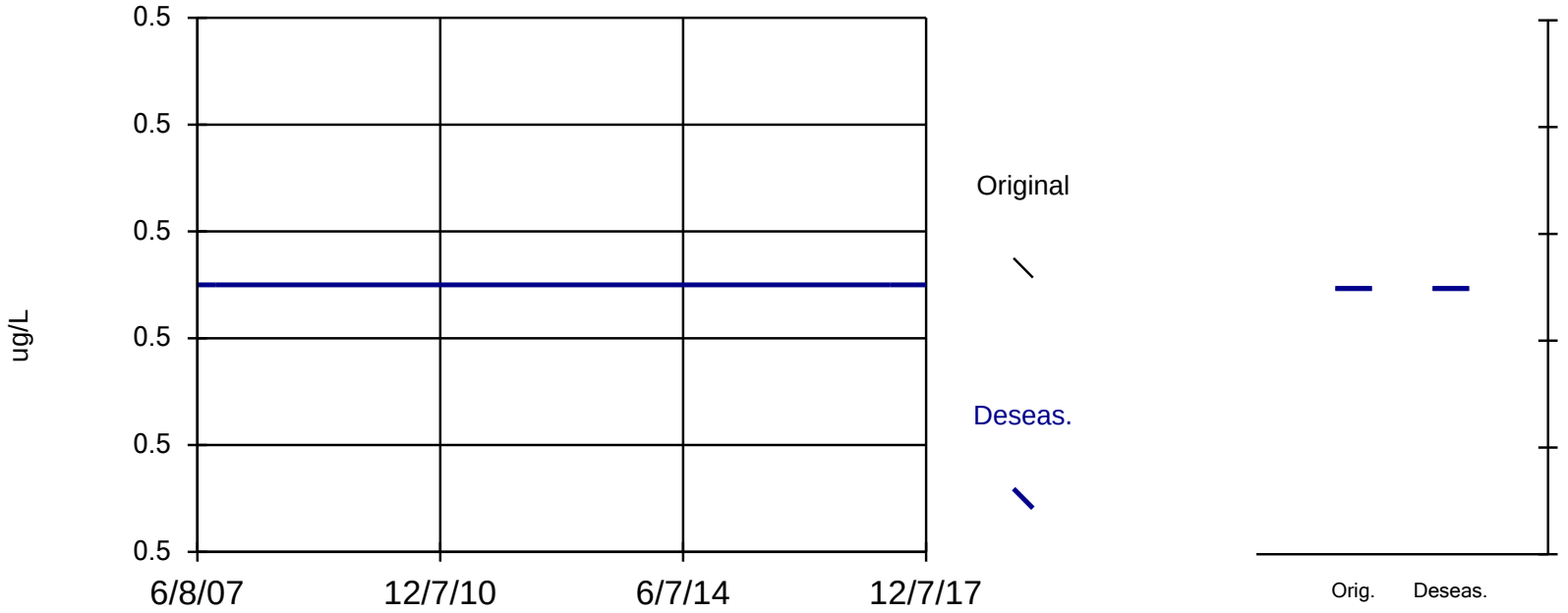


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-9

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 14 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

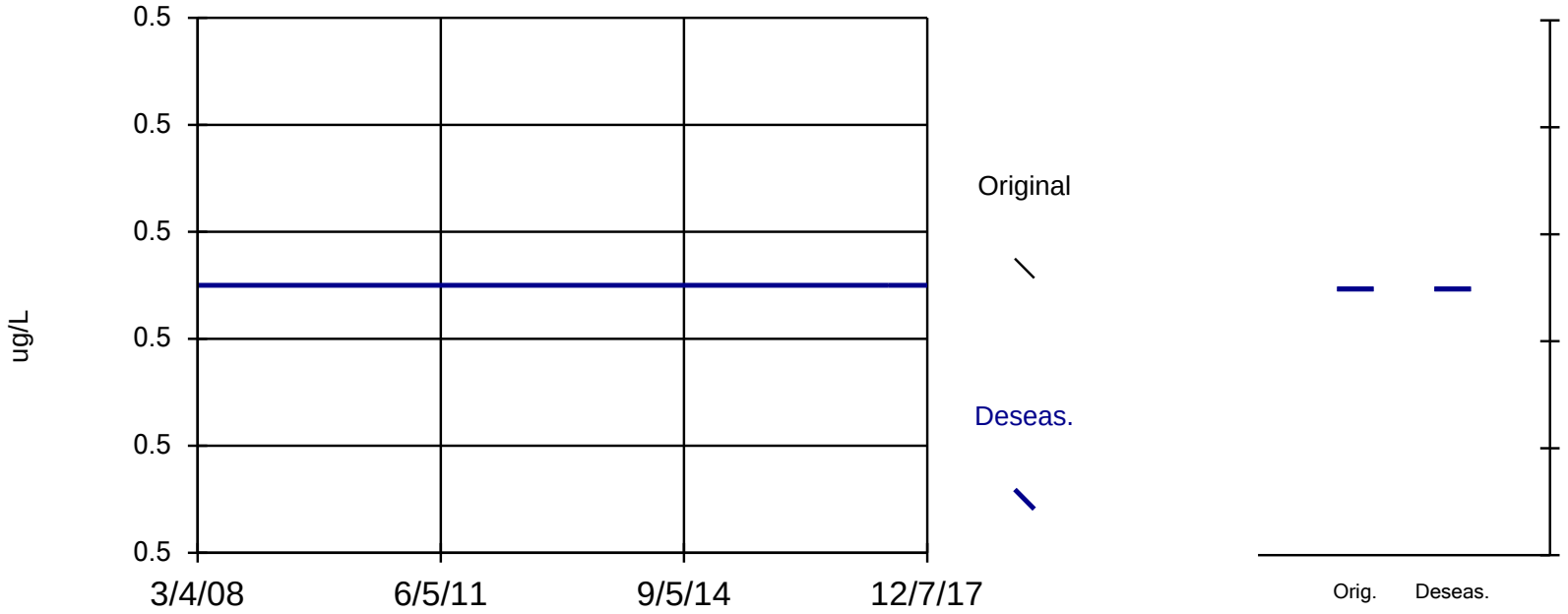


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-10D

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0
Tabulated Chi-Squared value = 0 with 0 degrees of freedom at the 5% significance level.
There were 14 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0
Adjusted Kruskal-Wallis statistic (H') = 0

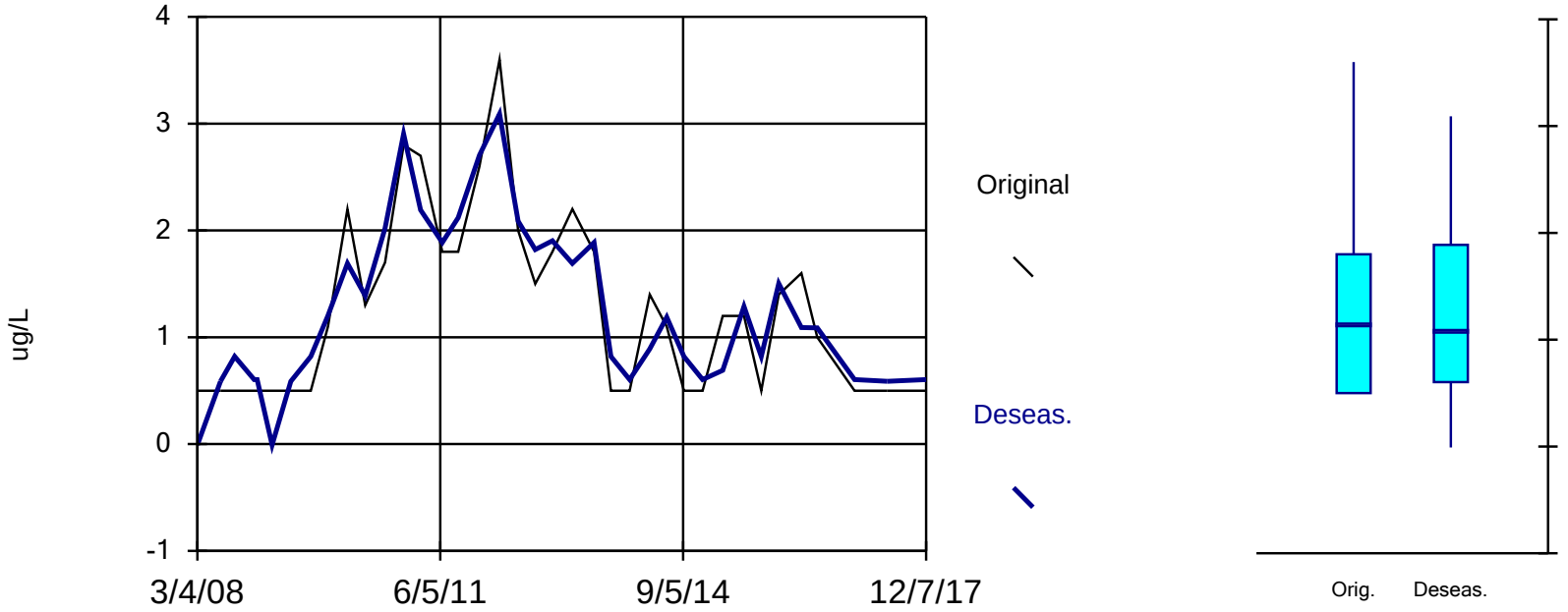


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: C-11I

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 4.124
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 6 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 3.811
Adjusted Kruskal-Wallis statistic (H') = 4.124

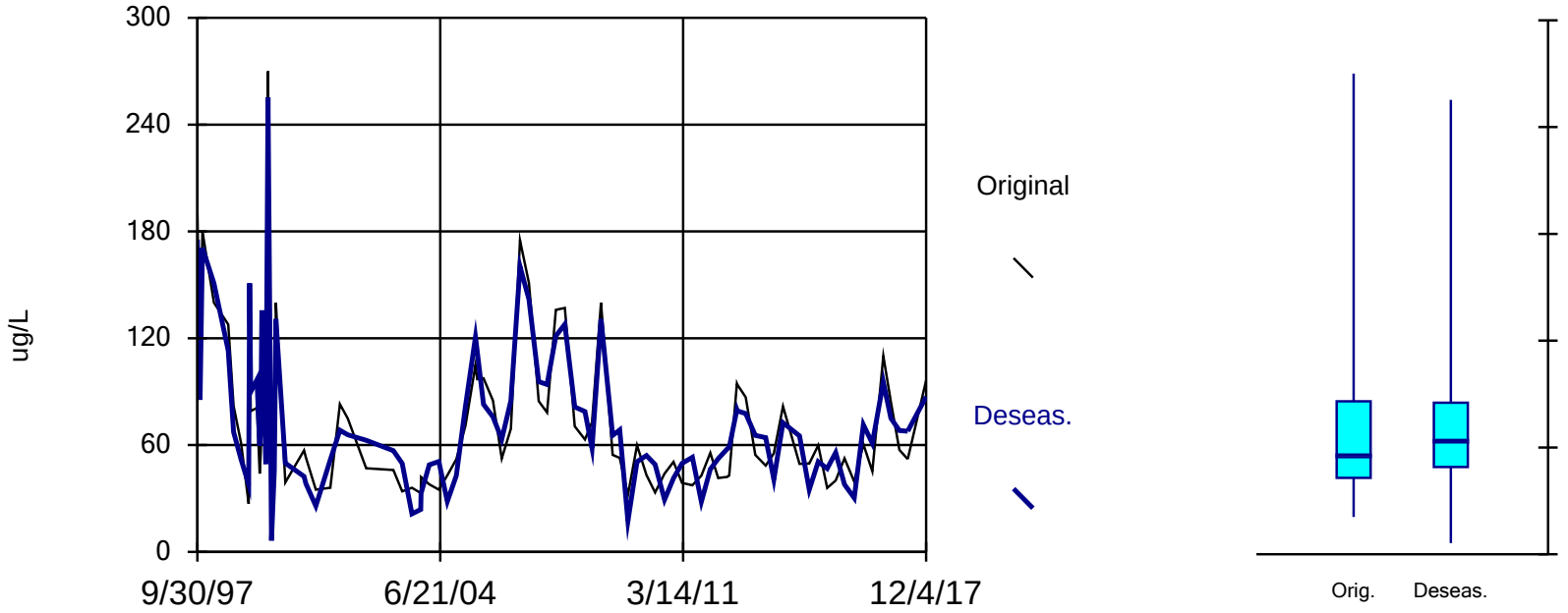


Constituent: TCE Analysis Run 12/28/2018 3:06 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: I-1

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 8.045
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 6 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 8.044
Adjusted Kruskal-Wallis statistic (H') = 8.045

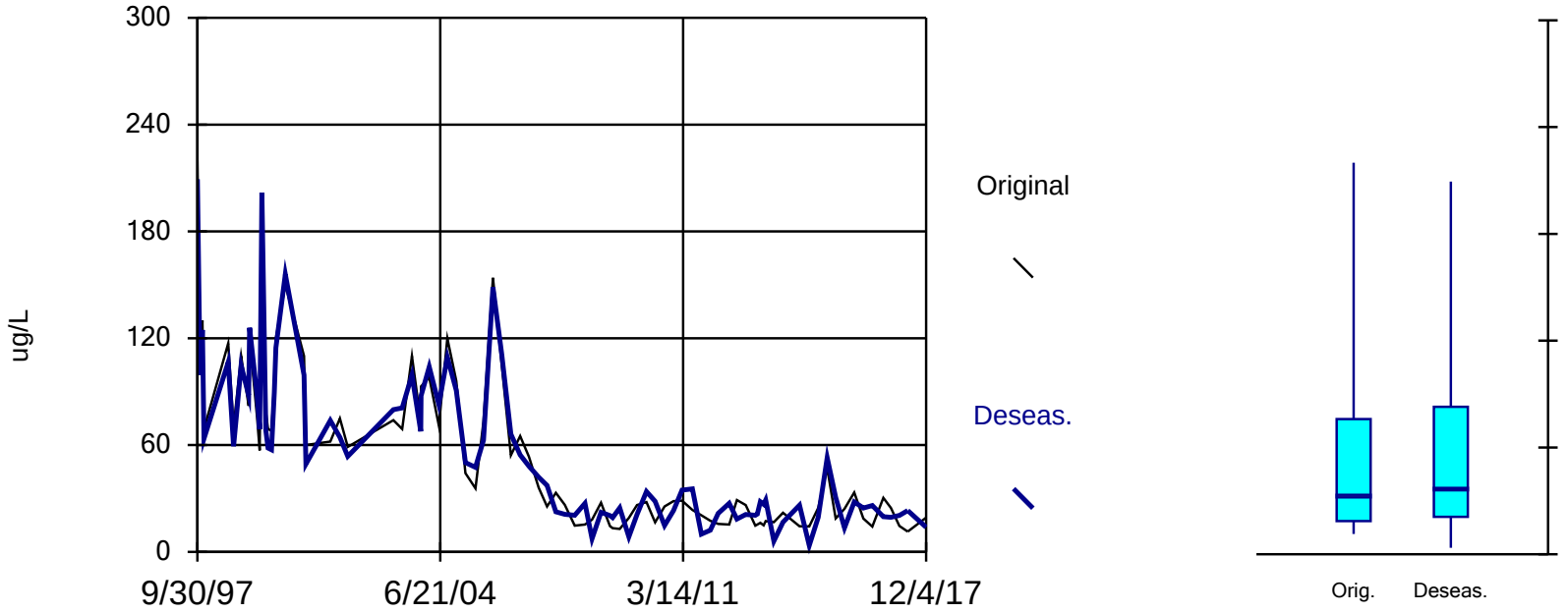


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: I-2

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 7.937
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 8 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 7.934
Adjusted Kruskal-Wallis statistic (H') = 7.937

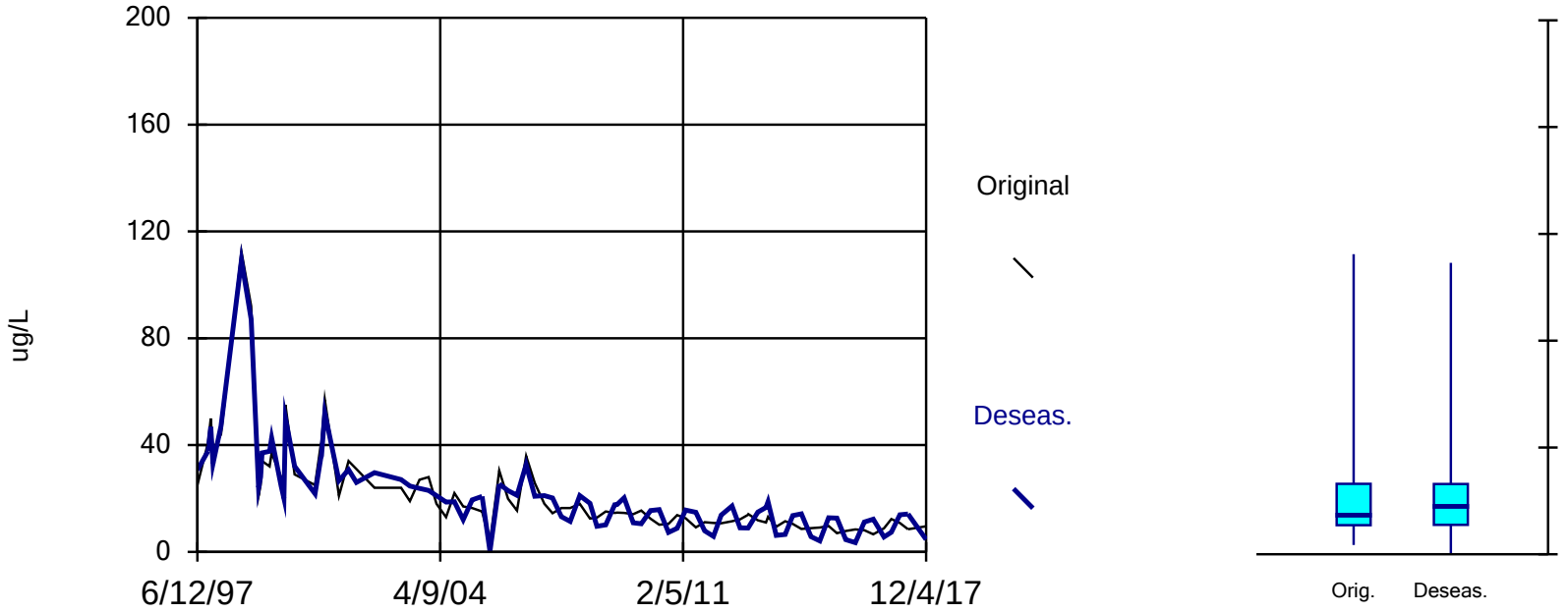


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: I-3

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 4.408
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 15 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 4.407
Adjusted Kruskal-Wallis statistic (H') = 4.408

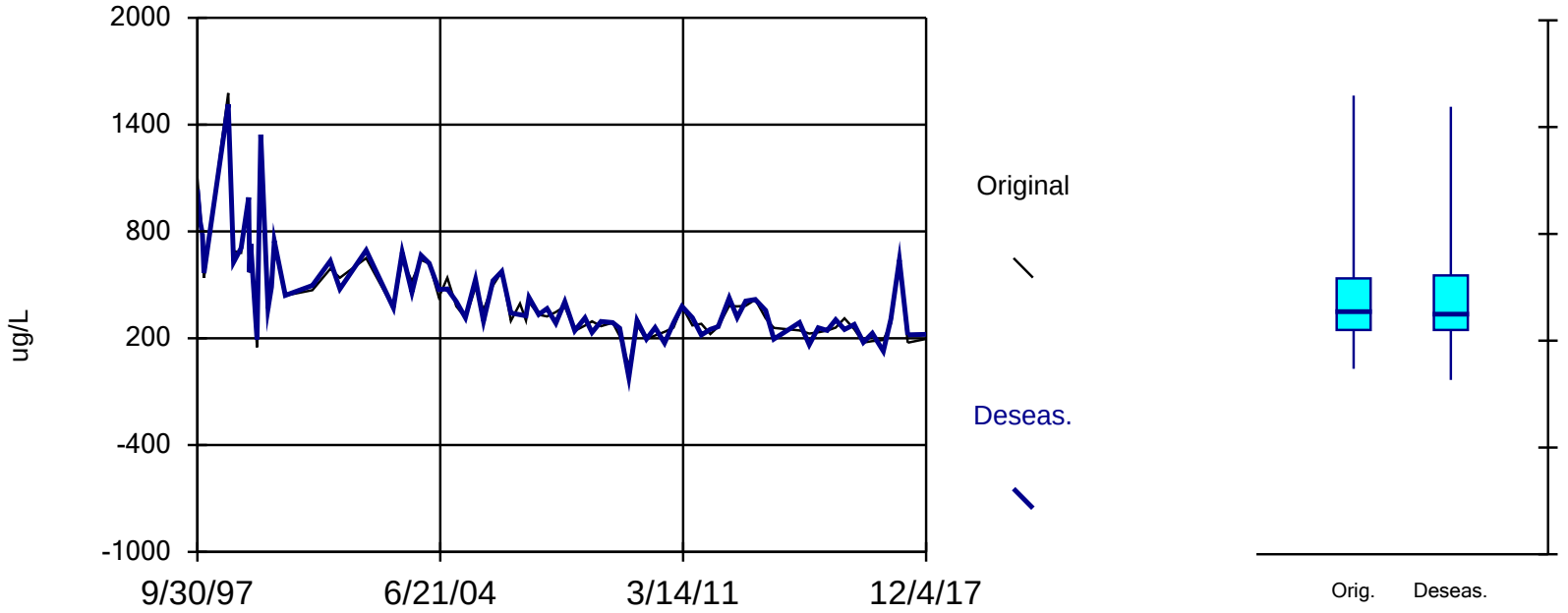


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: I-4

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.117
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 8 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.116
Adjusted Kruskal-Wallis statistic (H') = 2.117

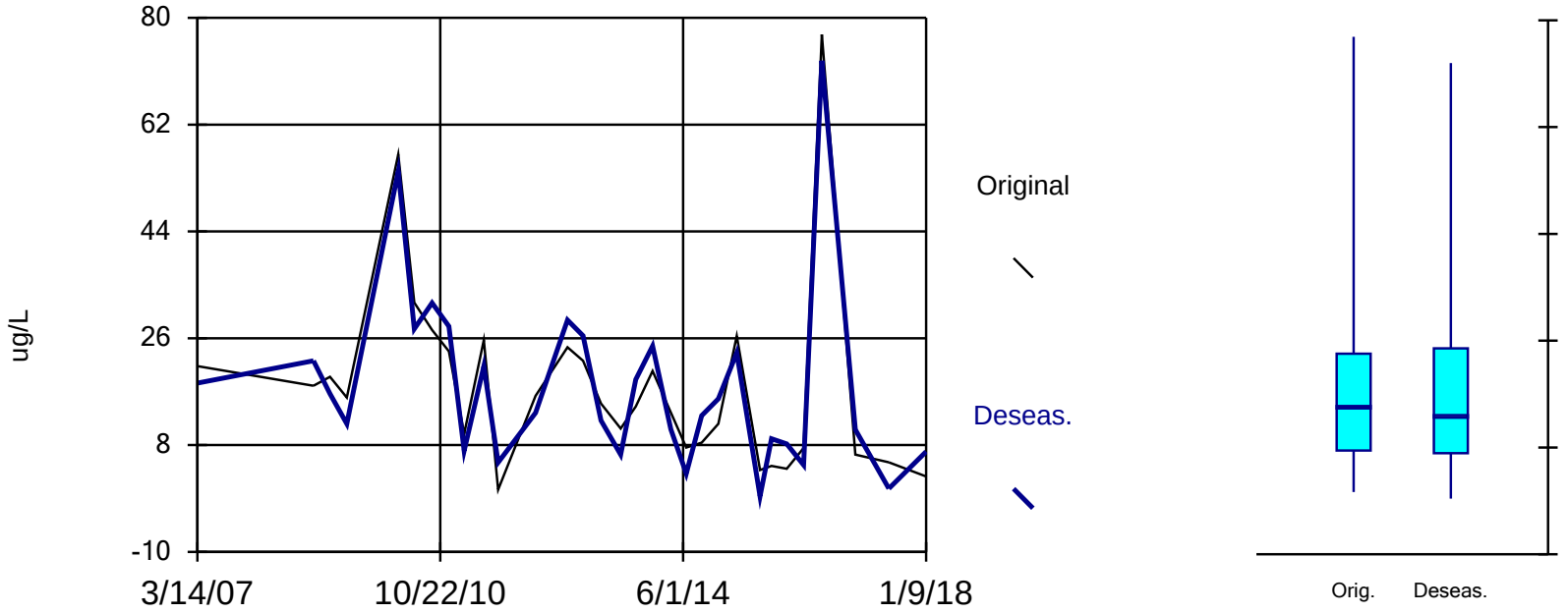


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: S-2DB

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.319
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 0 groups of ties in the data, so no adjustment to the Kruskal-Wallis statistic (H) was necessary.

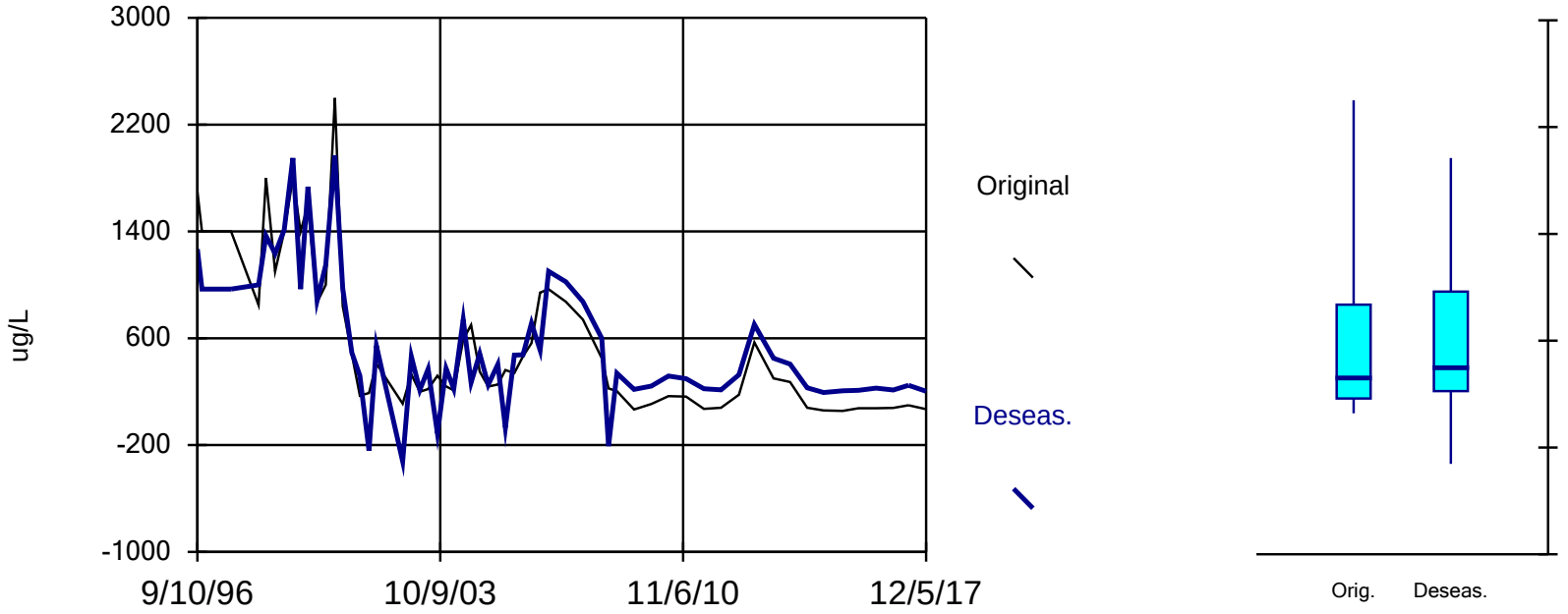


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: SM-1

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 8.274
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 8.271
Adjusted Kruskal-Wallis statistic (H') = 8.274

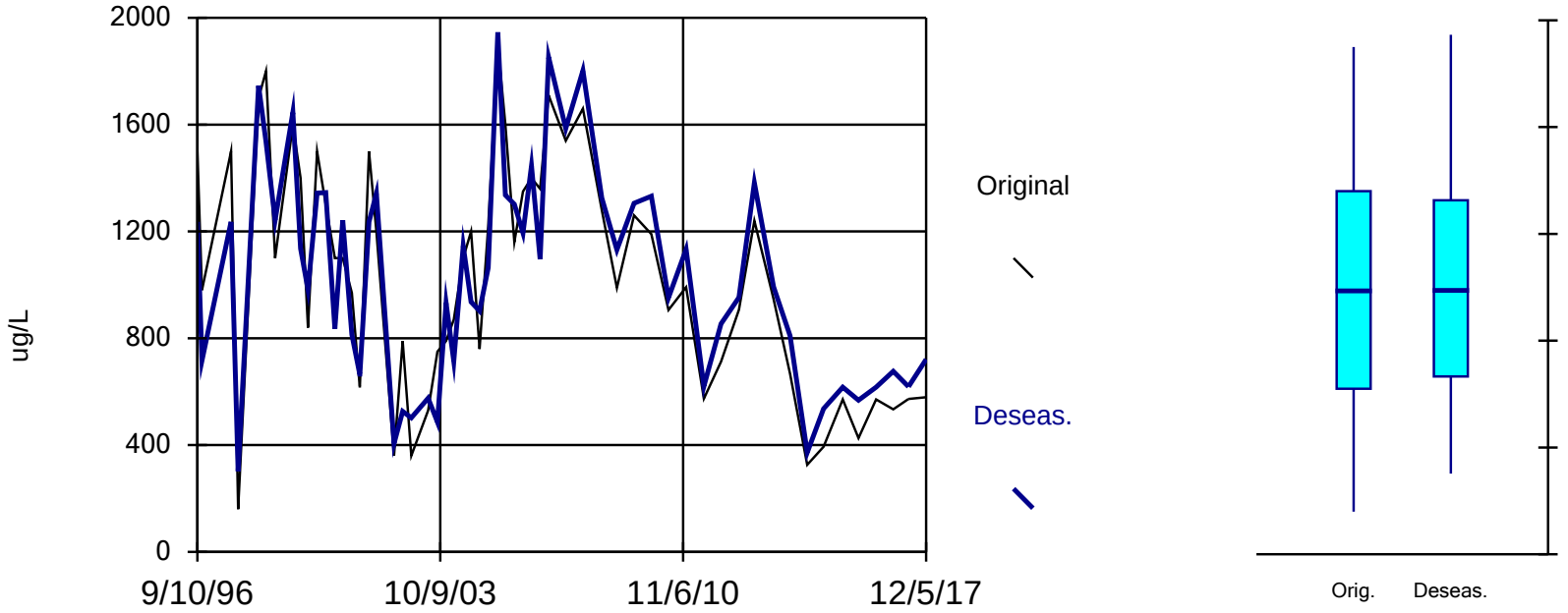


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: SM-2

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 7.808
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 9 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 7.802
Adjusted Kruskal-Wallis statistic (H') = 7.808

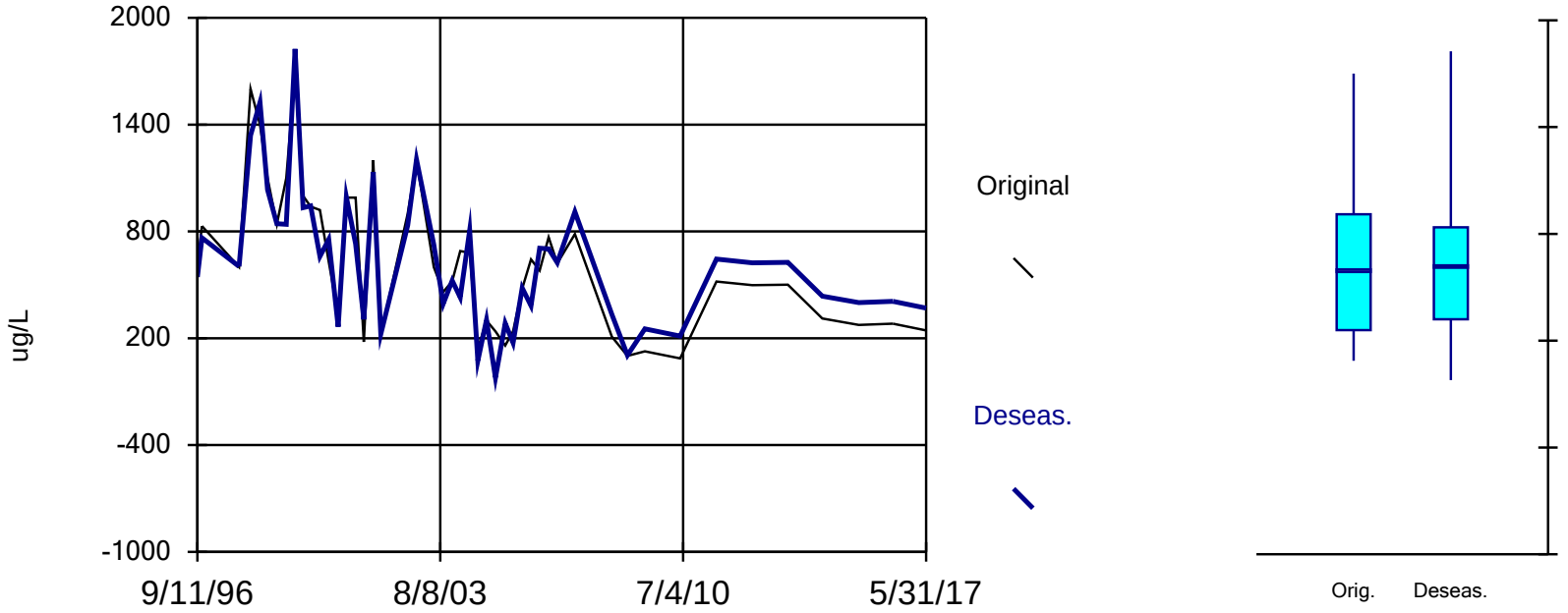


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: SM-3

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 6.91
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 5 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 6.908
Adjusted Kruskal-Wallis statistic (H') = 6.91

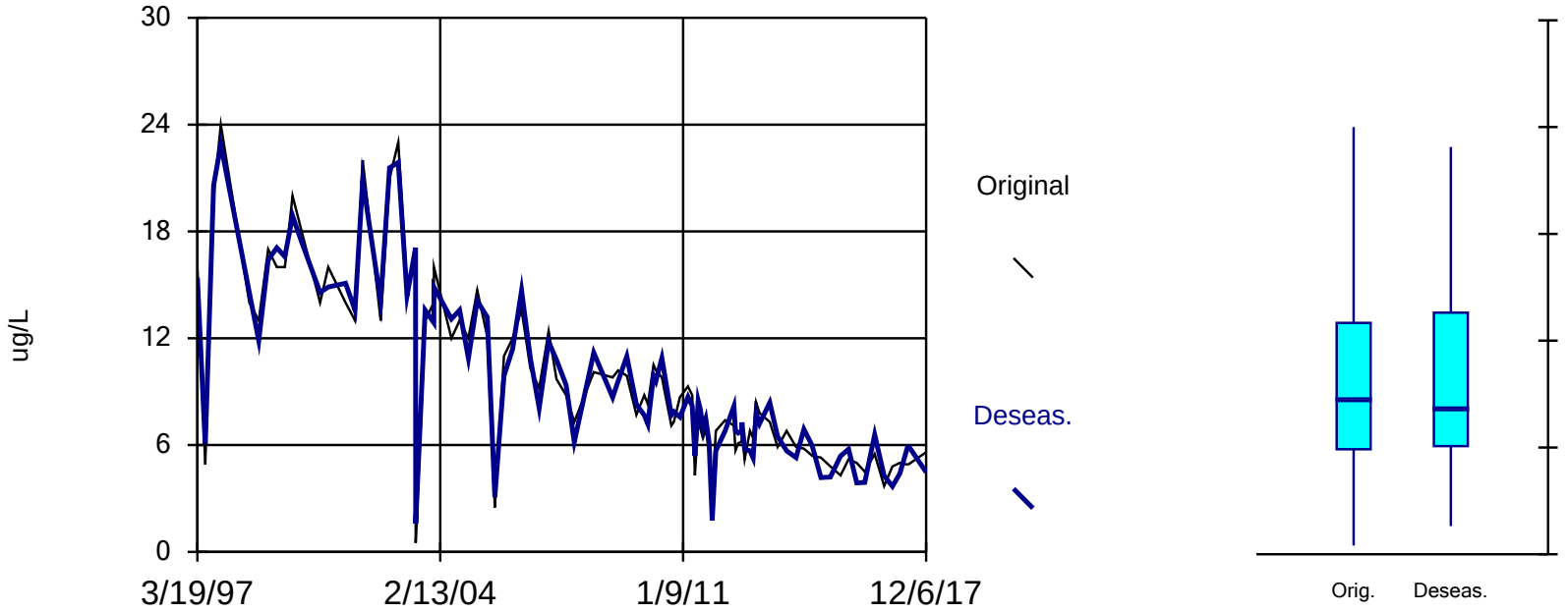


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: W-6

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.408
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 21 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.406
Adjusted Kruskal-Wallis statistic (H') = 2.408

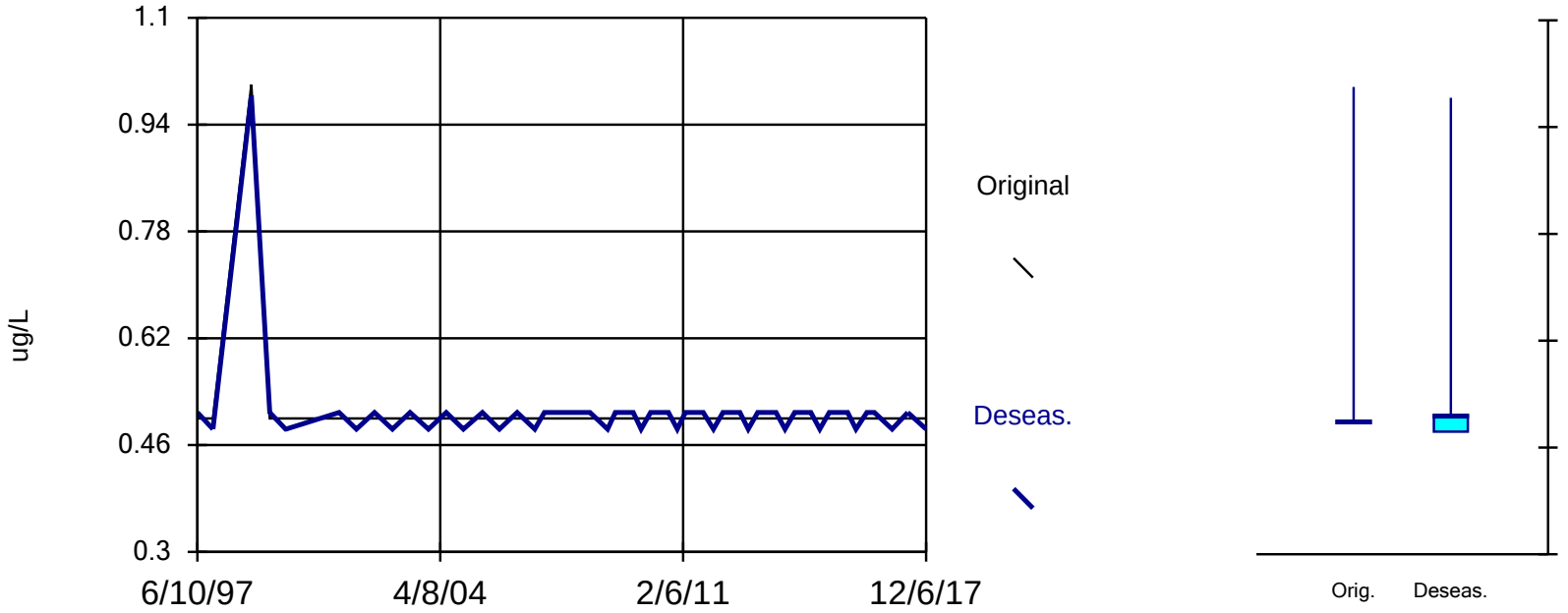


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: W-7

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.85
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.09569
Adjusted Kruskal-Wallis statistic (H') = 1.85

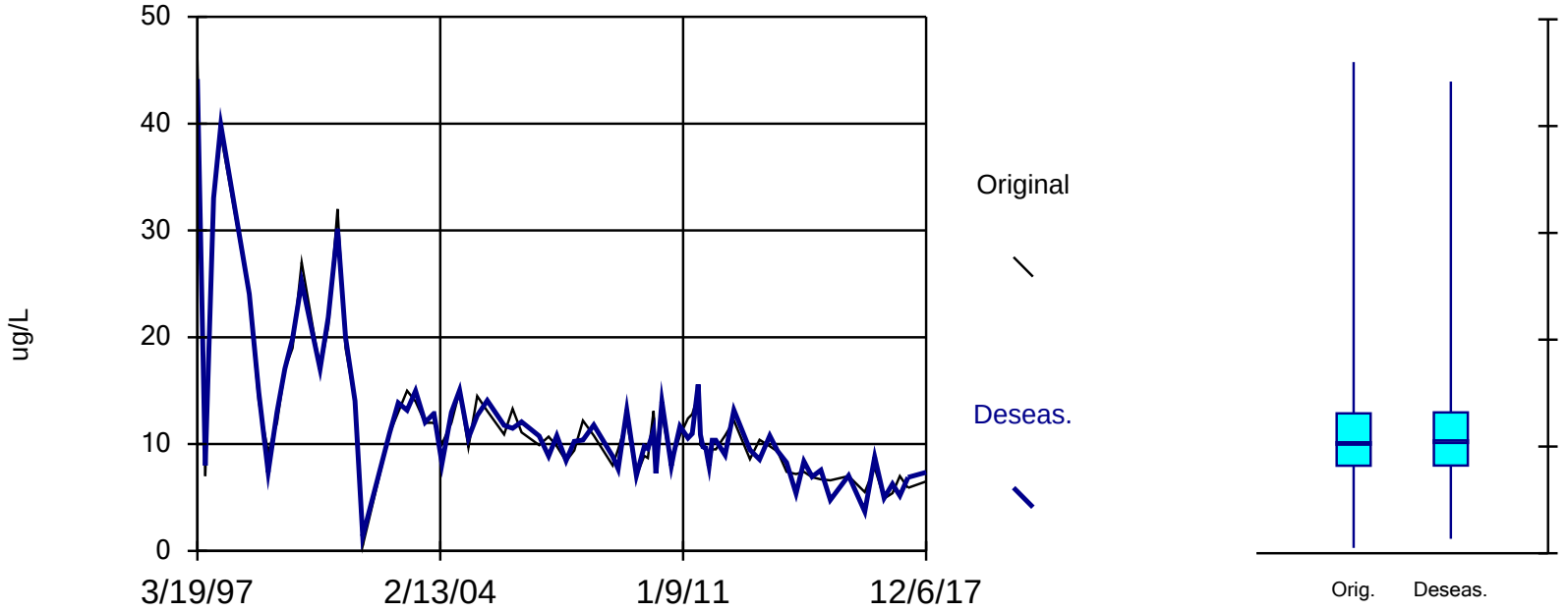


Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017

Seasonality: W-12

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.135
Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.
There were 17 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.133
Adjusted Kruskal-Wallis statistic (H') = 2.135



Constituent: TCE Analysis Run 12/28/2018 3:07 PM

Facility: UTC - Zanesville Well Field Client: Stantec Data File: Sanitas_ZWF_2017