ATTACHMENT D
DATA VALIDATION REPORTS (ON COMPACT DISC)

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ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
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1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-84420-1	8/04/2015	8/06/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions). The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.

ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
GCMS SVOC-SIM
Client samples -001 and -002 were re-analyzed outside of the referenced holding time (QC batch 272814) in response to low QC batch LCS recoveries for pentachlorophenol (QC batch 272220) so these re-analysis results should be considered to be estimated and qualified with UJ flags if non-detect and J flags if detected with the exception of pentachlorophenol results which are R flagged for both analyses.
PCB
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
METALS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
INORGANICS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:
GCMS VOC – Initial Calibration – cyclohexane RRF and RSD values reported in summary sheet were based on calibration levels 2 through 7 (as opposed to levels 1 through 9). This is not immediately evident based on initial observations but was confirmed by recalculating RRF and RSD using only levels 2 through 7.
CCV – For sequence dated 8/15 had multiple outliers biased high that did not affect client sample results (associated results were non-detect). CCV response for 1,4-Dioxane was biased low but this analyte was not quantified as part of this analytical batch.
GCMS SVOC – ICV was used in place of CCV for sequence confirmation of 8/11. ICV outliers for Caprolactam (low bias) and Benzaldehyde (high bias) did not affect qualification of client sample results.
METALS – Sample 84420-2 Total Magnesium analysis QC summary form showed an internal standard failure biased low for Li-6. Raw data for this analysis showed internal standard results were within referenced criteria so qualification was not made based on the summary form alone.
CRQL's outside of lab criteria biased high did not affect qualification of client sample results.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for non-aroclor 1016/1260 peaks on the secondary columns but these outliers did not affect sample quantitation. There was no ending CCV reported for the sequence evaluated.

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following significant QC anomalies were identified during verification of the analytical report:

GCMS SVOC QC batch LCS recoveries were outliers biased high for benzaldehyde and biased low and less than 10% for pentachlorophenol. Client samples -001 and -002 pentachlorophenol results should be considered to be unusable and qualified with R flags if non-detect and estimated with J flags if detected. Benzaldehyde results did not require qualification.

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch method blanks had detections below the RL for 1,2,4-trichlorobenzene, methylene chloride, hexachlorobutadiene and naphthalene. Qualification of client sample results was not required based on these method blank detections.

GCMS VOC trip blank had a detection below the RL for acetone. Qualification of client sample results was not required based on this trip blank detection.

GCMS VOC QC batch LCS recoveries were outliers biased high for cyclohexane. Client samples -001 and -002 results for this analyte should be considered to be estimated and qualified with J flags.

GCMS VOC QC batch MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code.

GCMS SVOC QC batch 272218 and PCB QC batch 272220 did not include MS recovery data due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

Metals method blanks had detections below the RL in QC batch 272053 for arsenic and vanadium and in QC batch 272304 for arsenic, copper and vanadium. Client samples -001 and -002 total and dissolved arsenic results and client samples -001 and -002 dissolved vanadium results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -001 and -002 total vanadium results should be considered to be non-detect at the concentration reported and qualified with B flags.

Metals QC batch 272053 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Cyanide sample -001 MSD recovery only was an outlier biased low so qualification was not required based on this QC outlier alone. QC batch sample duplicate RPD outlier was not determined using a sample from this submittal so qualification of client sample results was not required based on this sample-specific QC outlier.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

All target analytes were reported based on comparison to project-specific criteria. Potential non-conformances with project requirements were not observed.

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

All target analytes were reported based on comparison to project-specific criteria. Potential non-conformances with project requirements are noted below:

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Reconciliation of laboratory target compounds and corresponding limits of detection against the client QAPP was not performed as part of this validation request.

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria without exception.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary..

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Reconciliation of laboratory target compounds and corresponding limits of detection against the client QAPP was not performed as part of this validation request.

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Reconciliation of laboratory target compounds and corresponding limits of detection against the client QAPP was not performed as part of this validation request.

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6°C after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 84420-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Spectroscopy(D)	Metals by ICP Mass Spectroscopy	(Manual Cold Vapor)(D)	(Manual Cold Vapor)	AMENABLE (AUTOMATED COLORIMETRI	Anions by IC	Alkalinity Prep
490844201	SC-1-080415	8/4/2015	10:40:00	X	X	X	X	X	X	X	X	X	X	X	X
490844202	RW-6A-080415	8/4/2015	2:15:00	X	X	X	X	X	X	X	X	X	X	X	X
490844203	TB-01-080515	8/4/2015	1:00:00	X	X										

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84420-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84420-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84420-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84420-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84420-1

		Sample Name:	SC-1-080415				RW-6A-080415				TB-01-080515			
		Lab Sample ID:	490844201				490844202				490844203			
		Sample Date:	8/4/2015				8/4/2015				8/4/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	0.42	1.0	ug/l	J	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8	3.6	1.0	ug/l	---	13	1.0	ug/l	---				
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trimethylbenzene - TIC	95-63-6	4.7	1.0	ug/l	---								
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3,5-Trimethylbenzene - TIC	108-67-8	1.1	1.0	ug/l	---	2.6	1.0	ug/l	---				
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	0.27	1.0	ug/l	J	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Phenylbut-1-ene - TIC	934-10-1					4.3	---	ug/l	NJ				
4-Isopropyltoluene - TIC	99-87-6	0.26	1.0	ug/l	J								
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	5.9	25	ug/l	J
Benzene	71-43-2	1.3	1.0	ug/l	---	7.7	1.0	ug/l	---	ND	1.0	ug/l	---
Benzene, (1-methyl-1-propenyl)-, (E)- - TIC	768-00-3					4.7	---	ug/l	NJ				
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3	5.7	---	ug/l	NJ	10	---	ug/l	NJ				
Benzene, 1,2,3,5-tetramethyl- - TIC	527-53-7	3.4	---	ug/l	NJ								
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2					3.8	---	ug/l	NJ				
Benzene, 1-ethyl-2,4-dimethyl- - TIC	874-41-9					13	---	ug/l	NJ				
Benzene, 2-ethenyl-1,4-dimethyl- - TIC	2039-89-6	5.8	---	ug/l	NJ	15	---	ug/l	NJ				
Benzene, 2-ethyl-1,4-dimethyl- - TIC	1758-88-9	4.9	---	ug/l	NJ								
Benzene, 4-ethyl-1,2-dimethyl- - TIC	934-80-5					3.3	---	ug/l	NJ				
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	0.21	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	0.53	1.0	ug/l	J	2.0	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	2.0	5.0	ug/l	J	4.1	5.0	ug/l	J	ND	5.0	ug/l	---
Cyclopentane, methyl- - TIC	96-37-7	3.3	---	ug/l	NJ	10	---	ug/l	NJ				
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl acrylate - TIC	140-88-5	0.63	5.0	ug/l	NJ								
Ethylbenzene	100-41-4	2.0	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Indane - TIC	496-11-7	4.5	---	ug/l	NJ	19	---	ug/l	NJ				
Isopropylbenzene	98-82-8	1.6	1.0	ug/l	---	4.6	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	1.1	5.0	ug/l	J	0.74	5.0	ug/l	J	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
n-Butylbenzene - TIC	104-51-8	0.95	1.0	ug/l	J	1.5	1.0	ug/l	---				
N-Propylbenzene - TIC	103-65-1	0.58	1.0	ug/l	J	4.8	1.0	ug/l	---				
Naphthalene - TIC	91-20-3	7.5	5.0	ug/l	---	8.1	5.0	ug/l	---				
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	0.61	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Total Alkanes - TIC	Tic1	0.00	---	ug/l	NJ	0.00	---	ug/l	NJ	0.00	---	ug/l	NJ
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	60	3.0	ug/l	---	12	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	0.39	10	ug/l	J	2.7	10	ug/l	J	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84420-1

		Sample Name:	SC-1-080415				RW-6A-080415				TB-01-080515			
		Lab Sample ID:	490844201				490844202				490844203			
		Sample Date:	8/4/2015				8/4/2015				8/4/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
.alpha.-Pinene - TIC	80-56-8					3.8	---	ug/l	NJ				
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---				
1-Phenyl-1-butene - TIC	824-90-8	4.4	---	ug/l	NJ	6.8	---	ug/l	NJ				
2(3H)-Benzothiazolone - TIC	934-34-9	6.3	---	ug/l	NJ	4.2	---	ug/l	NJ				
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---				
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---				
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---				
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---				
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---				
2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---				
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---				
2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---				
2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---				
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---				
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---				
3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---				
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---				
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---				
4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---				
4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---				
Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Acetophenone	98-86-2	ND	10	ug/l	---	2.4	10	ug/l	J				
Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---				
Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---				
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3	4.9	---	ug/l	NJ	7.0	---	ug/l	NJ				
Benzene, 1,2,3-trimethyl- - TIC	526-73-8	6.4	---	ug/l	NJ								
Benzene, 4-ethyl-1,2-dimethyl- - TIC	934-80-5	3.9	---	ug/l	NJ								
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8	8.0	---	ug/l	NJ								
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethy - TIC	2437-95-8	4.0	---	ug/l	NJ								
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---				
Bis(2-chloroethyl)ether	111-44-4	2.9	10	ug/l	J	3.4	10	ug/l	J				
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---				
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---				
Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---				
Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---				
Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7					4.8	---	ug/l	NJ				
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---				
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---				
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---				
Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---				
Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---				
Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---				
Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---				
Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---				
Indane - TIC	496-11-7	3.6	---	ug/l	NJ	10	---	ug/l	NJ				
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---				
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---				
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---				
Naphthalene	91-20-3	5.5	2.0	ug/l	---	5.6	2.0	ug/l	---				
Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---				
Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---				
Phenol, 4,4'-(1-methylethylidene)bis- - TIC	80-05-7					13	---	ug/l	NJ				
Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Squalene - TIC	7683-64-9	7.5	---	ug/l	NJ								

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84420-1

		Sample Name:	SC-1-080415				RW-6A-080415				TB-01-080515			
		Lab Sample ID:	490844201				490844202				490844203			
		Sample Date:	8/4/2015				8/4/2015				8/4/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---				
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---				
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---				
Pentachlorophenol	87-86-5	ND	0.30	ug/l	R	ND	0.30	ug/l	R				
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.056	0.020	mg/l	---	0.0098	0.020	mg/l	J				
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---				
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Antimony - Dissolved	7440-36-0	0.00050	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Arsenic	7440-38-2	0.0011	0.0020	mg/l	UB	0.0014	0.0020	mg/l	UB				
Arsenic - Dissolved	7440-38-2	0.00084	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB				
Barium	7440-39-3	0.46	0.0020	mg/l	---	0.048	0.0020	mg/l	---				
Barium - Dissolved	7440-39-3	0.40	0.0020	mg/l	---	0.036	0.0020	mg/l	---				
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Calcium	7440-70-2	42.5	1.0	mg/l	---	85.5	1.0	mg/l	---				
Calcium - Dissolved	7440-70-2	39.0	1.0	mg/l	---	87.5	1.0	mg/l	---				
Chromium	7440-47-3	0.0038	0.0020	mg/l	---	0.00080	0.0020	mg/l	J				
Chromium - Dissolved	7440-47-3	0.00079	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Cobalt	7440-48-4	0.0034	0.0020	mg/l	---	0.019	0.0020	mg/l	---				
Cobalt - Dissolved	7440-48-4	0.0030	0.0020	mg/l	---	0.019	0.0020	mg/l	---				
Copper	7440-50-8	0.00053	0.0020	mg/l	J	0.00071	0.0020	mg/l	J				
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Iron	7439-89-6	70.1	0.025	mg/l	---	22.2	0.025	mg/l	---				
Iron - Dissolved	7439-89-6	51.4	0.025	mg/l	---	9.8	0.025	mg/l	---				
Lead	7439-92-1	0.013	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Lead - Dissolved	7439-92-1	0.0020	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Magnesium	7439-95-4	4.4	1.0	mg/l	---	19.3	1.0	mg/l	---				
Magnesium - Dissolved	7439-95-4	4.1	1.0	mg/l	---	20.0	1.0	mg/l	---				
Manganese	7439-96-5	0.75	0.0020	mg/l	---	15.7	0.040	mg/l	---				
Manganese - Dissolved	7439-96-5	0.64	0.0020	mg/l	---	14.2	0.20	mg/l	---				
Nickel	7440-02-0	0.013	0.0020	mg/l	---	0.0033	0.0020	mg/l	---				
Nickel - Dissolved	7440-02-0	0.012	0.0020	mg/l	---	0.0041	0.0020	mg/l	---				
Potassium	7440-09-7	2.4	1.0	mg/l	---	2.8	1.0	mg/l	---				
Potassium - Dissolved	7440-09-7	2.2	1.0	mg/l	---	2.8	1.0	mg/l	---				
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Sodium	7440-23-5	4.1	1.0	mg/l	---	8.2	1.0	mg/l	---				
Sodium - Dissolved	7440-23-5	3.5	1.0	mg/l	---	8.1	1.0	mg/l	---				
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Vanadium	7440-62-2	0.0039	0.0020	mg/l	B	0.0033	0.0020	mg/l	B				
Vanadium - Dissolved	7440-62-2	0.0013	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB				
Zinc	7440-66-6	0.034	0.025	mg/l	---	ND	0.025	mg/l	---				
Zinc - Dissolved	7440-66-6	0.010	0.025	mg/l	J	ND	0.025	mg/l	---				
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---				
OSW-9056A													
Chloride	16887-00-6	1.45	1.00	mg/l	---	2.00	1.00	mg/l	---				
Sulfate	14808-79-8	ND	1.00	mg/l	---	ND	1.00	mg/l	---				
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	217	10.0	mg/l	---	326	10.0	mg/l	---				
Total Alkalinity as CaCO3	E-14506	217	10.0	mg/l	---	326	10.0	mg/l	---				

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84420-1

		Sample Name:	SC-1-080415				RW-6A-080415				TB-01-080515			
		Lab Sample ID:	490844201				490844202				490844203			
		Sample Date:	8/4/2015				8/4/2015				8/4/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
3-Phenylbut-1-ene - TIC	934-10-1					4.3	---	ug/l	NJ				
4-Isopropyltoluene - TIC	99-87-6	0.26	1.0	ug/l	J								
Benzene, (1-methyl-1-propenyl)-, (E)- - TIC	768-00-3					4.7	---	ug/l	NJ				
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3	5.7	---	ug/l	NJ	10	---	ug/l	NJ				
Benzene, 1,2,3,5-tetramethyl- - TIC	527-53-7	3.4	---	ug/l	NJ								
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2					3.8	---	ug/l	NJ				
Benzene, 1-ethyl-2,4-dimethyl- - TIC	874-41-9					13	---	ug/l	NJ				
Benzene, 2-ethenyl-1,4-dimethyl- - TIC	2039-89-6	5.8	---	ug/l	NJ	15	---	ug/l	NJ				
Benzene, 2-ethyl-1,4-dimethyl- - TIC	1758-88-9	4.9	---	ug/l	NJ								
Benzene, 4-ethyl-1,2-dimethyl- - TIC	934-80-5					3.3	---	ug/l	NJ				
Cyclohexane	110-82-7	2.0	5.0	ug/l	J	4.1	5.0	ug/l	J				
Cyclopentane, methyl- - TIC	96-37-7	3.3	---	ug/l	NJ	10	---	ug/l	NJ				
Ethyl acrylate - TIC	140-88-5	0.63	5.0	ug/l	NJ								
Indane - TIC	496-11-7	4.5	---	ug/l	NJ	19	---	ug/l	NJ				
n-Butylbenzene - TIC	104-51-8	0.95	1.0	ug/l	J								
N-Propylbenzene - TIC	103-65-1	0.58	1.0	ug/l	J								
Total Alkanes - TIC	Tic1	0.00	---	ug/l	NJ	0.00	---	ug/l	NJ	0.00	---	ug/l	NJ
GC/MS SVOC													
OSW-8270D													
.alpha.-Pinene - TIC	80-56-8					3.8	---	ug/l	NJ				
1-Phenyl-1-butene - TIC	824-90-8	4.4	---	ug/l	NJ	6.8	---	ug/l	NJ				
2(3H)-Benzothiazolone - TIC	934-34-9	6.3	---	ug/l	NJ	4.2	---	ug/l	NJ				
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3	4.9	---	ug/l	NJ	7.0	---	ug/l	NJ				
Benzene, 1,2,3-trimethyl- - TIC	526-73-8	6.4	---	ug/l	NJ								
Benzene, 4-ethyl-1,2-dimethyl- - TIC	934-80-5	3.9	---	ug/l	NJ								
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8	8.0	---	ug/l	NJ								
Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethy - TIC	2437-95-8	4.0	---	ug/l	NJ								
Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7					4.8	---	ug/l	NJ				
Indane - TIC	496-11-7	3.6	---	ug/l	NJ	10	---	ug/l	NJ				
Phenol, 4,4'-(1-methylethylidene)bis- - TIC	80-05-7					13	---	ug/l	NJ				
Squalene - TIC	7683-64-9	7.5	---	ug/l	NJ								
OSW-8270DSim													
Pentachlorophenol	87-86-5	ND	0.30	ug/l	R	ND	0.30	ug/l	R				
Metals													
OSW-6020A													
Arsenic	7440-38-2	0.0011	0.0020	mg/l	UB	0.0014	0.0020	mg/l	UB				
Arsenic - Dissolved	7440-38-2	0.00084	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB				
Vanadium	7440-62-2	0.0039	0.0020	mg/l	B	0.0033	0.0020	mg/l	B				
Vanadium - Dissolved	7440-62-2	0.0013	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB				

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Loc: 490
84420

09/11/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filterl)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
				Preservation Code:																		
1	SC-1-080415	8/4/15	10:40	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
2	RW-6A-080415	8/4/15	14:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
3	TB-01-080515	8/5/15	–	–	Water	N	N	✓	✓													
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	8/5/2015 820	T	James Thieson	8-5-2015 820	TA
James Thieson	8/5/2015 1210		[signature]	8.6.15@0850	TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.3/0.8c

E-Mail Date: 2015-10-06
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-84595-1

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1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-84595-1	8/05-06/2015	8/07/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions). The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.

ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
GCMS SVOC-SIM
Client samples -001, -002, -003, -004 and -005 were re-analyzed outside of the referenced holding time (QC batch 273404) in response to low QC batch LCS recoveries for pentachlorophenol (QC batch 272220) so these re-analysis results should be considered to be estimated and qualified with UJ flags if non-detect and J flags if detected for pentachlorophenol results.
PCB
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
METALS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
INORGANICS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:
GCMS VOC
CCV/ICV – Sequences had outliers biased high that did not affect client sample results (associated results were either non-detect or outliers were not associated with target analytes).
GCMS SVOC – ICV was used in place of CCV for sequence confirmation of 8/11. ICV outliers for Caprolactam (low bias) and Benzaldehyde (high bias) did not affect qualification of client sample results.
METALS – Internal standard outliers as noted in raw data were not associated with final reported sample results.
CRQL's outside of lab criteria biased high did not affect qualification of client sample results.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for non-aroclor 1016/1260 peaks on the secondary columns but these outliers did not affect sample quantitation. There was no ending CCV reported for the sequences evaluated.

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following significant QC anomalies were identified during verification of the analytical report:

GCMS SVOC QC batch 272218 LCS recoveries were outliers biased high for benzaldehyde and QC batch 272220 biased low and less than 10% for pentachlorophenol. Client samples original analyses results for pentachlorophenol should be considered to be unusable and qualified with R flags if non-detect and estimated with J flags if detected. Sample re-analysis results for pentachlorophenol were prepped outside of the referenced holding time but with acceptable LCS recoveries so these re-analysis results should be considered to be estimated and qualified with J flags if detected and UJ flags if non-detect. Benzaldehyde results did not require qualification

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch 273831 method blank had a detection below the RL for carbon disulfide. Qualification of client sample results was not required based on these method blank detections.

GCMS VOC trip blank had a detection below the RL for acetone. Client sample -004 acetone results should be considered to be non-detect at the RL and qualified with a UB flag.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code.

GCMS SVOC QC batch 272218 and 272220 and GCMS VOC QC batch 274395 and 273958 and PCB QC batch did not include MS recovery data due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

Metals method blanks had detections below the RL in QC batch 272053 for arsenic and vanadium and in QC batch 272304 for arsenic and vanadium and in QC batch 272910 for vanadium. Client samples -001 and -003 total and dissolved arsenic results and client sample -005 dissolved arsenic results and client samples -001, -002, -003 and -005 dissolved vanadium results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -002 dissolved arsenic results and client samples -001, -002, -003, -004, -005 total vanadium and sample -004 dissolved vanadium results should be considered to be non-detect at the concentration reported and qualified with B flags.

Metals QC batch 272053 and 272910 and Mercury QC batch 272423 and Cyanide QC batch 271876 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD’s were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6ºC after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 84595-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Spectroscopy(D)	Metals by ICP Mass Spectroscopy	(Manual Cold Vapor)(D)	(Manual Cold Vapor)	AMENABLE (AUTOMATED COLORIMETRI	Anions by IC	Alkalinity Prep
490845951	RW-6-080515	8/5/2015	10:30:00	X	X	X	X	X	X	X	X	X	X	X	X
490845952	OB-20A-080515	8/5/2015	10:35:00	X	X	X	X	X	X	X	X	X	X	X	X
490845953	OB-19-080515	8/5/2015	10:40:00	X	X	X	X	X	X	X	X	X	X	X	X
490845954	RW-5-080515	8/5/2015	2:35:00	X	X	X	X	X	X	X	X	X	X	X	X
490845955	OB-20B-080515	8/5/2015	2:10:00	X	X	X	X	X	X	X	X	X	X	X	X
490845956	TB-02-080615	8/6/2015	1:01:00	X	X										
490845957	TB-02-080615	8/6/2015	1:01:00	X	X										

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84595-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84595-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84595-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84595-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84595-1

		Sample Name:	RW-6-080515				OB-20A-080515				OB-19-080515			
		Lab Sample ID:	490845951				490845952				490845953			
		Sample Date:	8/5/2015				8/5/2015				8/5/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	0.62	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8												
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	1.2	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Benzene, 1,4-diethyl- - TIC	105-05-5												
Benzene, 2-ethenyl-1,4-dimethyl- - TIC	2039-89-6												
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	3.3	1.0	ug/l	---	ND	1.0	ug/l	---	0.39	1.0	ug/l	J
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	0.37	1.0	ug/l	J	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	0.48	5.0	ug/l	J	0.19	5.0	ug/l	J	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Hexane - TIC	110-54-3												
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	0.33	5.0	ug/l	J	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	0.35	5.0	ug/l	J	ND	5.0	ug/l	---
Naphthalene - TIC	91-20-3												
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Total Alkanes TIC - TIC	Tic1												
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84595-1

		Sample Name:	RW-6-080515				OB-20A-080515				OB-19-080515			
		Lab Sample ID:	490845951				490845952				490845953			
		Sample Date:	8/5/2015				8/5/2015				8/5/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	1.5	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8	3.4	---	ug/l	NJ	4.2	---	ug/l	NJ				
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Diethyltoluamide - TIC	134-62-3	7.4	---	ug/l	NJ								
Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	0.1	0.30	ug/l	J	ND	0.30	ug/l	UJ	ND	0.30	ug/l	UJ

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84595-1

		Sample Name:	RW-6-080515				OB-20A-080515				OB-19-080515			
		Lab Sample ID:	490845951				490845952				490845953			
		Sample Date:	8/5/2015				8/5/2015				8/5/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.012	0.020	mg/l	J	0.084	0.020	mg/l	---	0.071	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic	7440-38-2	0.0015	0.0020	mg/l	UB	0.0071	0.0020	mg/l	---	0.0016	0.0020	mg/l	UB
Arsenic - Dissolved	7440-38-2	0.0011	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B	0.00087	0.0020	mg/l	UB
Barium	7440-39-3	0.44	0.0020	mg/l	---	0.14	0.0020	mg/l	---	0.086	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.38	0.0020	mg/l	---	0.12	0.0020	mg/l	---	0.076	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	77.0	1.0	mg/l	---	28.2	1.0	mg/l	---	13.1	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	75.4	1.0	mg/l	---	28.1	1.0	mg/l	---	12.7	1.0	mg/l	---
Chromium	7440-47-3	0.0029	0.0020	mg/l	---	0.0011	0.0020	mg/l	J	0.00095	0.0020	mg/l	J
Chromium - Dissolved	7440-47-3	0.00087	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	0.0016	0.0020	mg/l	J	0.00099	0.0020	mg/l	J	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	0.0014	0.0020	mg/l	J	0.00088	0.0020	mg/l	J	ND	0.0020	mg/l	---
Copper	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0075	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Iron	7439-89-6	36.3	0.025	mg/l	---	31.7	0.025	mg/l	---	16.5	0.025	mg/l	---
Iron - Dissolved	7439-89-6	26.1	0.025	mg/l	---	19.8	0.025	mg/l	---	4.7	0.025	mg/l	---
Lead	7439-92-1	0.00025	0.0020	mg/l	J	0.00044	0.0020	mg/l	J	0.00044	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	13.6	1.0	mg/l	---	2.9	1.0	mg/l	---	2.5	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	13.7	1.0	mg/l	---	2.9	1.0	mg/l	---	2.4	1.0	mg/l	---
Manganese	7439-96-5	7.4	0.020	mg/l	---	0.76	0.0020	mg/l	---	0.29	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	7.4	0.020	mg/l	---	0.79	0.0020	mg/l	---	0.31	0.0020	mg/l	---
Nickel	7440-02-0	0.0011	0.0020	mg/l	J	0.0011	0.0020	mg/l	J	0.0020	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.0019	0.0020	mg/l	J	0.0018	0.0020	mg/l	J	0.0015	0.0020	mg/l	J
Potassium	7440-09-7	2.9	1.0	mg/l	---	2.1	1.0	mg/l	---	0.80	1.0	mg/l	J
Potassium - Dissolved	7440-09-7	2.9	1.0	mg/l	---	2.0	1.0	mg/l	---	0.79	1.0	mg/l	J
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	0.00066	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.00069	0.0020	mg/l	J
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	6.8	1.0	mg/l	---	3.3	1.0	mg/l	---	3.3	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	6.5	1.0	mg/l	---	3.1	1.0	mg/l	---	3.2	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0027	0.0020	mg/l	B	0.0026	0.0020	mg/l	B	0.0041	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.0014	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	0.017	0.025	mg/l	J	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	0.0072	0.010	mg/l	J	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	5.97	1.00	mg/l	---	1.75	1.00	mg/l	---	1.21	1.00	mg/l	---
Sulfate	14808-79-8	1.41	1.00	mg/l	---	ND	1.00	mg/l	---	1.14	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	284	10.0	mg/l	---	122	10.0	mg/l	---	53.0	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	284	10.0	mg/l	---	122	10.0	mg/l	---	53.0	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84595-1

		Sample Name:	RW-5-080515				OB-20B-080515				TB-02-080615			
		Lab Sample ID:	490845954				490845955				490845956			
		Sample Date:	8/5/2015				8/5/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	0.26	1.0	ug/l	J	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8					0.26	1.0	ug/l	J				
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	4.9	25	ug/l	UB	ND	25	ug/l	---	7.5	25	ug/l	J
Benzene	71-43-2	ND	1.0	ug/l	---	0.27	1.0	ug/l	J	ND	1.0	ug/l	---
Benzene, 1,4-diethyl- - TIC	105-05-5					3.6	---	ug/l	NJ				
Benzene, 2-ethenyl-1,4-dimethyl- - TIC	2039-89-6					2.8	---	ug/l	NJ				
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	1.4	1.0	ug/l	---	1.8	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	0.87	5.0	ug/l	J	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Hexane - TIC	110-54-3					0.21	2.0	ug/l	J				
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	0.54	5.0	ug/l	J	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Naphthalene - TIC	91-20-3					1.6	5.0	ug/l	J				
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Total Alkanes TIC - TIC	Tic1					0.21	---	ug/l	NJ				
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84595-1

		Sample Name:	RW-5-080515				OB-20B-080515				TB-02-080615			
		Lab Sample ID:	490845954				490845955				490845956			
		Sample Date:	8/5/2015				8/5/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	6.7	10	ug/l	J	0.95	10	ug/l	J	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---				
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---				
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---				
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---				
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---				
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---				
2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---				
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---				
2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---				
2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---				
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---				
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---				
3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---				
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---				
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---				
4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---				
4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---				
Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---				
Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---				
Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---				
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8					4.4	---	ug/l	NJ				
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---				
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---				
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---				
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---				
Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---				
Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---				
Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---				
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---				
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---				
Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---				
Diethyltoluamide - TIC	134-62-3												
Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---				
Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---				
Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---				
Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---				
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---				
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---				
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---				
Naphthalene	91-20-3	ND	2.0	ug/l	---	1.0	2.0	ug/l	J				
Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---				
Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---				
Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---				
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---				
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---				
Pentachlorophenol	87-86-5	ND	0.30	ug/l	UJ	ND	0.30	ug/l	UJ				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84595-1

		Sample Name:	RW-5-080515				OB-20B-080515				TB-02-080615			
		Lab Sample ID:	490845954				490845955				490845956			
		Sample Date:	8/5/2015				8/5/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.40	0.020	mg/l	---	0.066	0.020	mg/l	---				
Aluminum - Dissolved	7429-90-5	0.16	0.020	mg/l	---	ND	0.020	mg/l	---				
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Antimony - Dissolved	7440-36-0	0.00069	0.0020	mg/l	J	0.00050	0.0020	mg/l	J				
Arsenic	7440-38-2	0.0089	0.0020	mg/l	---	0.0015	0.0020	mg/l	J				
Arsenic - Dissolved	7440-38-2	0.0072	0.0020	mg/l	---	0.0011	0.0020	mg/l	UB				
Barium	7440-39-3	0.0094	0.0020	mg/l	---	0.084	0.0020	mg/l	---				
Barium - Dissolved	7440-39-3	0.0055	0.0020	mg/l	---	0.063	0.0020	mg/l	---				
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Calcium	7440-70-2	17.7	1.0	mg/l	---	62.6	1.0	mg/l	---				
Calcium - Dissolved	7440-70-2	13.6	1.0	mg/l	---	58.9	1.0	mg/l	---				
Chromium	7440-47-3	0.0037	0.0020	mg/l	---	0.00069	0.0020	mg/l	J				
Chromium - Dissolved	7440-47-3	0.0014	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Cobalt	7440-48-4	ND	0.0020	mg/l	---	0.030	0.0020	mg/l	---				
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	0.028	0.0020	mg/l	---				
Copper	7440-50-8	0.0089	0.0020	mg/l	---	0.00065	0.0020	mg/l	J				
Copper - Dissolved	7440-50-8	0.0045	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Iron	7439-89-6	2.3	0.025	mg/l	---	42.5	0.025	mg/l	---				
Iron - Dissolved	7439-89-6	0.73	0.025	mg/l	---	28.3	0.025	mg/l	---				
Lead	7439-92-1	0.0066	0.0020	mg/l	---	0.00028	0.0020	mg/l	J				
Lead - Dissolved	7439-92-1	0.0024	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Magnesium	7439-95-4	3.2	1.0	mg/l	---	11.6	1.0	mg/l	---				
Magnesium - Dissolved	7439-95-4	2.6	1.0	mg/l	---	11.2	1.0	mg/l	---				
Manganese	7439-96-5	0.29	0.0020	mg/l	---	10.2	0.020	mg/l	---				
Manganese - Dissolved	7439-96-5	0.11	0.0020	mg/l	---	10.6	0.20	mg/l	---				
Nickel	7440-02-0	0.0036	0.0020	mg/l	---	0.0058	0.0020	mg/l	---				
Nickel - Dissolved	7440-02-0	0.0034	0.0020	mg/l	---	0.0072	0.0020	mg/l	---				
Potassium	7440-09-7	58.6	1.0	mg/l	---	3.0	1.0	mg/l	---				
Potassium - Dissolved	7440-09-7	53.5	1.0	mg/l	---	2.8	1.0	mg/l	---				
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Sodium	7440-23-5	44.0	1.0	mg/l	---	4.8	1.0	mg/l	---				
Sodium - Dissolved	7440-23-5	40.6	1.0	mg/l	---	4.8	1.0	mg/l	---				
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Vanadium	7440-62-2	0.0049	0.0020	mg/l	B	0.0039	0.0020	mg/l	B				
Vanadium - Dissolved	7440-62-2	0.0034	0.0020	mg/l	B	0.0011	0.0020	mg/l	UB				
Zinc	7440-66-6	0.22	0.025	mg/l	---	ND	0.025	mg/l	---				
Zinc - Dissolved	7440-66-6	0.069	0.025	mg/l	---	ND	0.025	mg/l	---				
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---				
OSW-9056A													
Chloride	16887-00-6	1.54	1.00	mg/l	---	1.62	1.00	mg/l	---				
Sulfate	14808-79-8	16.0	1.00	mg/l	---	ND	1.00	mg/l	---				
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	46.1	10.0	mg/l	---	261	10.0	mg/l	---				
Total Alkalinity as CaCO3	E-14506	178	10.0	mg/l	---	261	10.0	mg/l	---				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84595-1

Sample Name: TB-02-080615
Lab Sample ID: 490845957
Sample Date: 8/6/2015

Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier
GC/MS VOC					
OSW-8260C					
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8				
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---
Benzene, 1,4-diethyl- - TIC	105-05-5				
Benzene, 2-ethenyl-1,4-dimethyl- - TIC	2039-89-6				
Bromoform	75-25-2	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---
Hexane - TIC	110-54-3				
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---
Naphthalene - TIC	91-20-3				
Styrene	100-42-5	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---
Total Alkanes TIC - TIC	Tic1				
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84595-1

Sample Name: TB-02-080615
Lab Sample ID: 490845957
Sample Date: 8/6/2015

Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier
GC/MS SVOC					
OSW-8260CSim					
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---
OSW-8270D					
1,2,4,5-Tetrachlorobenzene	95-94-3				
2,2'-oxybis[1-chloropropane]	108-60-1				
2,3,4,6-Tetrachlorophenol	58-90-2				
2,4,5-Trichlorophenol	95-95-4				
2,4,6-Trichlorophenol	88-06-2				
2,4-Dichlorophenol	120-83-2				
2,4-Dimethylphenol	105-67-9				
2,4-Dinitrophenol	51-28-5				
2,4-Dinitrotoluene	121-14-2				
2,6-Dinitrotoluene	606-20-2				
2-Chloronaphthalene	91-58-7				
2-Chlorophenol	95-57-8				
2-Methylnaphthalene	91-57-6				
2-Methylphenol	95-48-7				
2-Nitroaniline	88-74-4				
2-Nitrophenol	88-75-5				
3 & 4 Methylphenol	65794-96-9				
3,3'-Dichlorobenzidine	91-94-1				
3-Nitroaniline	99-09-2				
4,6-Dinitro-2-methylphenol	534-52-1				
4-Bromophenyl phenyl ether	101-55-3				
4-Chloro-3-methylphenol	59-50-7				
4-Chloroaniline	106-47-8				
4-Chlorophenyl phenyl ether	7005-72-3				
4-Nitroaniline	100-01-6				
4-Nitrophenol	100-02-7				
Acenaphthene	83-32-9				
Acenaphthylene	208-96-8				
Acetophenone	98-86-2				
Anthracene	120-12-7				
Atrazine	1912-24-9				
Benzaldehyde	100-52-7				
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8				
Benzo[g,h,i]perylene	191-24-2				
Benzo[k]fluoranthene	207-08-9				
Bis(2-chloroethoxy)methane	111-91-1				
Bis(2-chloroethyl)ether	111-44-4				
Bis(2-ethylhexyl) phthalate	117-81-7				
Butyl benzyl phthalate	85-68-7				
Caprolactam	105-60-2				
Carbazole	86-74-8				
Chrysene	218-01-9				
Di-n-butyl phthalate	84-74-2				
Di-n-octyl phthalate	117-84-0				
Dibenz(a,h)anthracene	53-70-3				
Dibenzofuran	132-64-9				
Diethyl phthalate	84-66-2				
Diethyltoluamide - TIC	134-62-3				
Dimethyl phthalate	131-11-3				
Diphenyl	92-52-4				
Fluoranthene	206-44-0				
Fluorene	86-73-7				
Hexachlorocyclopentadiene	77-47-4				
Hexachloroethane	67-72-1				
Indeno[1,2,3-cd]pyrene	193-39-5				
Isophorone	78-59-1				
N-Nitrosodi-n-propylamine	621-64-7				
N-Nitrosodiphenylamine	86-30-6				
Naphthalene	91-20-3				
Nitrobenzene	98-95-3				
Phenanthrene	85-01-8				
Phenol	108-95-2				
Pyrene	129-00-0				
OSW-8270DSim					
Benzo[a]anthracene	56-55-3				
Benzo[a]pyrene	50-32-8				
Benzo[b]fluoranthene	205-99-2				
Hexachlorobenzene	118-74-1				
Hexachlorobutadiene	87-68-3				
N-Nitrosodimethylamine	62-75-9				
Pentachlorophenol	87-86-5				

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84595-1

		Sample Name:	RW-6-080515				OB-20A-080515				OB-19-080515				RW-5-080515				OB-20B-080515			
		Lab Sample ID:	490845951				490845952				490845953				490845954				490845955			
		Sample Date:	8/5/2015				8/5/2015				8/5/2015				8/5/2015				8/5/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																					
OSW-8260C																					
1,2,3-Trimethylbenzene - TIC	526-73-8																	0.26	1.0	ug/l	J
Acetone	67-64-1													4.9	25	ug/l	UB				
Benzene, 1,4-diethyl- - TIC	105-05-5																	3.6	---	ug/l	NJ
Benzene, 2-ethenyl-1,4-dimethyl- - TIC	2039-89-6																	2.8	---	ug/l	NJ
Hexane - TIC	110-54-3																	0.21	2.0	ug/l	J
Naphthalene - TIC	91-20-3																	1.6	5.0	ug/l	J
Total Alkanes TIC - TIC	Tic1																	0.21	---	ug/l	NJ
GC/MS SVOC																					
OSW-8270D																					
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8	3.4	---	ug/l	NJ	4.2	---	ug/l	NJ									4.4	---	ug/l	NJ
Diethyltoluamide - TIC	134-62-3	7.4	---	ug/l	NJ																
OSW-8270DSim																					
Pentachlorophenol - original run	87-86-5	ND	0.30	ug/l	R	ND	0.30	ug/l	R	ND	0.30	ug/l	R	ND	0.30	ug/l	R	ND	0.30	ug/l	R
Pentachlorophenol - re-analysis	87-86-5	0.1	0.30	ug/l	J	ND	0.30	ug/l	UJ	ND	0.30	ug/l	UJ	ND	0.30	ug/l	UJ	ND	0.30	ug/l	UJ
Metals																					
OSW-6020A																					
Arsenic	7440-38-2	0.0015	0.0020	mg/l	UB					0.0016	0.0020	mg/l	UB								
Arsenic - Dissolved	7440-38-2	0.0011	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B	0.00087	0.0020	mg/l	UB					0.0011	0.0020	mg/l	UB
Vanadium	7440-62-2	0.0027	0.0020	mg/l	B	0.0026	0.0020	mg/l	B	0.0041	0.0020	mg/l	B	0.0049	0.0020	mg/l	B	0.0039	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.0014	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB	0.0034	0.0020	mg/l	B	0.0011	0.0020	mg/l	UB

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
84595

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

09/14/2015

Client Information	Sampler: Robert Lowtenberg	Lab PM: Brown, Shali	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com	Page:
Company: Cornerstone Environmental Group, LLC/ FORD			Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:		
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package		
State, Zip: NY, 10941			
Phone: 845-695-0252(Tel)	PO #:		
Email: tim.roeper@cornerstoneeg.com	WO #:		
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filter)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
				Preservation Code:																		
1	RW-6-080515	8/5/15	10:30	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
2	OB-20A-080515	8/5/15	10:35	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
3	OB-19-080515	8/5/15	10:40	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
4	RW-5-080515	8/5/15	14:35	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
5	OB-20B-080515	8/5/15	14:40	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
6-7	TB-02-080615	8/6/15	—	—	Water	N	N	✓	✓													
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment.

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	8/6/15 810		James Thiesen	8/6/15 810	TA
James [signature]	8/6/15 1345	TA	[signature]	8/7/15 0800	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

E-Mail Date: 2015-10-07
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-84672-1

PREPARED BY:
CADENA, INC.
1099 Highland Drive
Ann Arbor, MI 48108
Telephone: 517-819-0356
Fax: 734-975-6709
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Date: 2015-10-07
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APPENDIX 4 QUALFIED RESULTS SUMMARY

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ATTACHMENT A CHAIN OF CUSTODY DOCUMENT(S)

1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-84672-1	8/06-07/2015	8/08/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
GCMS SVOC and SIM
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
PCB
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
METALS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
INORGANICS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:
GCMS VOC
CCV/ICV – Sequences had outliers biased high that did not affect client sample results (associated results were either non-detect or outliers were not associated with target analytes).
GCMS VOC-SIM
QC batch 274966 MS recovery outliers were not determined using samples from this submittal so qualification was not required based on these sample-specific QC outliers.
GCMS SVOC – CCAL and ICV outliers were either biased high or not target analytes for this submittal so did not affect client sample results. This includes analytical batch 274426 CCV as noted below where target analyte benzo(a)pyrene was an outlier biased high – batch included analysis of sample -004 as well as the MBLK/LCS for prep batch 274147.
METALS – Internal standard outliers, serial dilution and PDS outliers as noted in raw data were not associated with final reported sample results.
CRQL's outside of lab criteria biased high did not affect qualification of client sample results.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not affect sample quantitation. There was no ending CCV reported for the sequences evaluated.

VERIFICATION SUMMARY
The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

GCMS VOC QC batch 273831 method blank had a detection below the RL for carbon disulfide. Qualification of client sample results was not required based on these method blank detections.

GCMS VOC trip blank was non-detect for all target analytes.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

GCMS VOC QC batch 273958 did not include MS recovery data due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

GCMS SVOC PAH analytical batch 274426 CCV response outliers were not used to qualify client sample results as part of this level 2 verification review. This level 4 data package QC information will be evaluated as part of the pending validation review and data will be qualified if applicable.

GCMS SVOC QC batch 272786 LCS recoveries were outliers biased high for benzaldehyde. Qualification of client sample results was not required based on this high bias QC outlier.

GCMS SVOC sample -001 MS/MSD recoveries were outliers for multiple analytes biased high along with several MS/MSD RPD outliers. Qualification of client sample results was not required based on these high bias QC outliers.

GCMS SVOC SIM QC batch 274147 LCS recoveries were outliers biased low and less than 10% for pentachlorophenol. Client samples were not analyzed as part of this QC batch so qualification of client sample results was not required based on this low bias QC outlier.

GCMS SVOC SIM sample -001 MS/MSD RPD only was an outlier for pentachlorophenol and caprolactam. Qualification of client sample results was not required based on these QC outliers alone.

Metals method blanks had detections below the RL in QC batch 272053 for arsenic and vanadium and in QC batch 272304 for copper and vanadium and in QC batch 272584 for arsenic and vanadium. Client samples -001, -002, -003, -004, -008, -009 total arsenic results and client samples-001, -002, -003, -004, -005 and -006 dissolved arsenic results and client samples -001, -004, -005, -006, -008 total and dissolved vanadium results and client sample -008 dissolved copper result should be considered to be non-detect at the RL and qualified with UB flags. Client samples -007 total arsenic results and client samples -002, -003, -009 total and dissolved vanadium results should be considered to be non-detect at the concentration reported and qualified with B flags.

Metals sample -001 MS recovery and MS/MSD RPD were outliers with the recoveries biased high for zinc and manganese. Client sample -001 total manganese results should be considered to be estimated and qualified with a J flag.

GCMS-SIM VOC QC batch 274966 and Cyanide QC batch 271876 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Cyanide QC batch 273142 sample -001 MS/MSD recoveries were outliers biased low. Client sample -001 cyanide result should be considered to be estimated and qualified with a UJ flag. QC batch 272365 MS recovery only outlier for sample -00 did not require qualification of client sample results.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD’s were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6ºC after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 84672-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	Mercury (Manual Cold Vapor)(D)	Mercury (Manual Cold Vapor)	TOTAL AND AMENABLE COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Anions by IC	Alkalinity Prep
490846721	RW-7-080615	8/6/2015	10:05:00	X	X	X	X	X	X	X	X	X	X	X	X
4908467210	TB-03-080715	8/7/2015	1:00:00	X	X										
490846722	OB-21-080615	8/6/2015	10:35:00	X	X	X	X	X	X	X	X	X	X	X	X
490846723	Dup-01-080615	8/6/2015	12:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490846724	OB-6-080615	8/6/2015	10:05:00	X	X	X	X	X	X	X	X	X	X	X	X
490846725	OB-11R-080615	8/6/2015	12:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490846726	OB-27-080615	8/6/2015	3:20:00	X	X	X	X	X	X	X	X	X	X	X	X
490846727	OB-30C-080615	8/6/2015	3:05:00	X	X	X	X	X	X	X	X	X	X	X	X
490846728	OB-30B-080615	8/6/2015	3:10:00	X	X	X	X	X	X	X	X	X	X	X	X
490846729	RW-3 (77-87)-080615	8/6/2015	2:35:00	X	X	X	X	X	X	X	X	X	X	X	X

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84672-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84672-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84672-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84672-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	RW-7-080615				TB-03-080715				OB-21-080615			
		Lab Sample ID:	490846721				4908467210				490846722			
		Sample Date:	8/6/2015				8/7/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8												
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1H-Indene, 2,3-dihydro-1,2-dimethyl- - TIC	17057-82-8												
1H-Indene, 2,3-dihydro-1,6-dimethyl- - TIC	17059-48-2												
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9												
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Phenylbut-1-ene - TIC	934-10-1												
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Benzene, (1-methyl-1-propenyl)-, (E)- - TIC	768-00-3												
Benzene, (3-methyl-2-butenyl)- - TIC	4489-84-3												
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3												
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2												
Benzene, 1,3-diethyl- - TIC	141-93-5												
Benzene, 1-ethyl-2,4-dimethyl- - TIC	874-41-9												
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Cyclopentane, methyl- - TIC	96-37-7												
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Hexane - TIC	110-54-3												
Indan, 1-methyl- - TIC	767-58-8												
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	0.31	5.0	ug/l	J
Naphthalene - TIC	91-20-3												
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Total Alkanes TIC - TIC	Tic1												
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2												
Unknown - TIC	Tic3												
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	RW-7-080615				TB-03-080715				OB-21-080615			
		Lab Sample ID:	490846721				4908467210				490846722			
		Sample Date:	8/6/2015				8/7/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
(-)-10-Camphorsulfonyl chloride - TIC	39262-22-1												
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---					ND	10	ug/l	---
1,4-Dioxane - TIC	123-91-1												
1-Methylnaphthalene - TIC	90-12-0												
1-Phenyl-1-butene - TIC	824-90-8												
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9												
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---					ND	10	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---					ND	10	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---					ND	10	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---					ND	10	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---					ND	10	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---					ND	10	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---					ND	25	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---					ND	10	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---					ND	10	ug/l	---
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---					ND	10	ug/l	---
2-Chlorophenol	95-57-8	ND	10	ug/l	---					ND	10	ug/l	---
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---					ND	2.0	ug/l	---
2-Methylphenol	95-48-7	ND	10	ug/l	---					ND	10	ug/l	---
2-Nitroaniline	88-74-4	ND	25	ug/l	---					ND	25	ug/l	---
2-Nitrophenol	88-75-5	ND	10	ug/l	---					ND	10	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---					ND	10	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---					ND	10	ug/l	---
3-Nitroaniline	99-09-2	ND	25	ug/l	---					ND	25	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---					ND	25	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---					ND	10	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---					ND	10	ug/l	---
4-Chloroaniline	106-47-8	ND	10	ug/l	---					ND	10	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---					ND	10	ug/l	---
4-Nitroaniline	100-01-6	ND	25	ug/l	---					ND	25	ug/l	---
4-Nitrophenol	100-02-7	ND	25	ug/l	---					ND	25	ug/l	---
Acenaphthene	83-32-9	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Acenaphthylene	208-96-8	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Acetophenone	98-86-2	ND	10	ug/l	---					ND	10	ug/l	---
Anthracene	120-12-7	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Atrazine	1912-24-9	ND	10	ug/l	---					ND	10	ug/l	---
Benzaldehyde	100-52-7	ND	10	ug/l	---					ND	10	ug/l	---
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2												
Benzene, 1,4-bis(1-methylethenyl)- - TIC	1605-18-1												
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8												
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---					ND	10	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---					ND	10	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---					ND	10	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---					ND	10	ug/l	---
Caprolactam	105-60-2	ND	10	ug/l	---					ND	10	ug/l	---
Carbazole	86-74-8	ND	10	ug/l	---					ND	10	ug/l	---
Chrysene	218-01-9	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---					ND	10	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---					ND	10	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Dibenzofuran	132-64-9	ND	10	ug/l	---					ND	10	ug/l	---
Diethyl phthalate	84-66-2	ND	10	ug/l	---					ND	10	ug/l	---
Dimethyl phthalate	131-11-3	ND	10	ug/l	---					ND	10	ug/l	---
Diphenyl	92-52-4	ND	10	ug/l	---					ND	10	ug/l	---
Fluoranthene	206-44-0	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Fluorene	86-73-7	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---					ND	10	ug/l	---
Hexachloroethane	67-72-1	ND	10	ug/l	---					ND	10	ug/l	---
Indane - TIC	496-11-7												
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Isophorone	78-59-1	ND	10	ug/l	---					ND	10	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---					ND	10	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---					ND	10	ug/l	---
Naphthalene	91-20-3	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Naphthalene, 1-ethyl- - TIC	1127-76-0												
Naphthalene, 2,7-dimethyl- - TIC	582-16-1												
Nitrobenzene	98-95-3	ND	10	ug/l	---					ND	10	ug/l	---
Phenanthrene	85-01-8	ND	2.0	ug/l	---					ND	2.0	ug/l	---
Phenol	108-95-2	ND	10	ug/l	---					ND	10	ug/l	---
Phenol, 4,4'-(1-methylethylidene)bis- - TIC	80-05-7												
Phenol, p-tert-butyl- - TIC	98-54-4												
Pyrene	129-00-0	ND	2.0	ug/l	---					ND	2.0	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	RW-7-080615				TB-03-080715				OB-21-080615			
		Lab Sample ID:	490846721				4908467210				490846722			
		Sample Date:	8/6/2015				8/7/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---					ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---					ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---					ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---					ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---					ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---					ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---					0.10	0.30	ug/l	J
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.66	ug/l	---					ND	0.64	ug/l	---
PCB-1221	11104-28-2	ND	0.66	ug/l	---					ND	0.64	ug/l	---
PCB-1232	11141-16-5	ND	0.66	ug/l	---					ND	0.64	ug/l	---
PCB-1242	53469-21-9	ND	0.66	ug/l	---					ND	0.64	ug/l	---
PCB-1248	12672-29-6	ND	0.66	ug/l	---					ND	0.64	ug/l	---
PCB-1254	11097-69-1	ND	0.66	ug/l	---					ND	0.64	ug/l	---
PCB-1260	11096-82-5	ND	0.66	ug/l	---					ND	0.64	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.66	ug/l	---					ND	0.64	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.38	0.020	mg/l	---					2.2	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	0.42	0.020	mg/l	---					0.64	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---					ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.0014	0.0020	mg/l	J					0.00070	0.0020	mg/l	J
Arsenic	7440-38-2	0.00074	0.0020	mg/l	UB					0.0014	0.0020	mg/l	UB
Arsenic - Dissolved	7440-38-2	0.00072	0.0020	mg/l	UB					0.00056	0.0020	mg/l	UB
Barium	7440-39-3	0.0021	0.0020	mg/l	---					0.016	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.0014	0.0020	mg/l	J					0.0070	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---					ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---					ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---					ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---					ND	0.0010	mg/l	---
Calcium	7440-70-2	12.1	1.0	mg/l	---					11.6	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	11.6	1.0	mg/l	---					10.8	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---					0.0030	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---					0.00072	0.0020	mg/l	J
Cobalt	7440-48-4	ND	0.0020	mg/l	---					0.0021	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---					ND	0.0020	mg/l	---
Copper	7440-50-8	0.0012	0.0020	mg/l	J					0.016	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---					0.0016	0.0020	mg/l	J
Iron	7439-89-6	0.26	0.025	mg/l	---					3.5	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.14	0.025	mg/l	---					0.50	0.025	mg/l	---
Lead	7439-92-1	0.00048	0.0020	mg/l	J					0.0018	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---					0.00024	0.0020	mg/l	J
Magnesium	7439-95-4	4.2	1.0	mg/l	---					5.5	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	4.1	1.0	mg/l	---					4.8	1.0	mg/l	---
Manganese	7439-96-5	0.0042	0.0020	mg/l	J					0.15	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.0019	0.0020	mg/l	J					0.0099	0.0020	mg/l	---
Nickel	7440-02-0	0.00051	0.0020	mg/l	J					0.0050	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---					0.0011	0.0020	mg/l	J
Potassium	7440-09-7	0.90	1.0	mg/l	J					1.5	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	0.86	1.0	mg/l	J					1.1	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---					ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---					ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---					ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---					ND	0.0020	mg/l	---
Sodium	7440-23-5	4.2	1.0	mg/l	---					3.9	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	3.9	1.0	mg/l	---					3.7	1.0	mg/l	---
Thallium	7440-28-0	0.00037	0.0020	mg/l	J					0.00055	0.0020	mg/l	J
Thallium - Dissolved	7440-28-0	0.00064	0.0020	mg/l	J					0.00077	0.0020	mg/l	J
Vanadium	7440-62-2	0.0019	0.0020	mg/l	UB					0.0050	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.0018	0.0020	mg/l	UB					0.0025	0.0020	mg/l	B
Zinc	7440-66-6	ND	0.025	mg/l	---					0.085	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---					ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---					ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---					ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	UJ					ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	1.86	1.00	mg/l	---					20.0	1.00	mg/l	---
Sulfate	14808-79-8	10.8	1.00	mg/l	---					10.5	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	40.8	10.0	mg/l	---					46.0	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	40.8	10.0	mg/l	---					46.0	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	Dup-01-080615				OB-6-080615				OB-11R-080615			
		Lab Sample ID:	490846723				490846724				490846725			
		Sample Date:	8/6/2015				8/6/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	0.32	1.0	ug/l	J
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8												
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1H-Indene, 2,3-dihydro-1,2-dimethyl- - TIC	17057-82-8												
1H-Indene, 2,3-dihydro-1,6-dimethyl- - TIC	17059-48-2												
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9									4.8	---	ug/l	NJ
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Phenylbut-1-ene - TIC	934-10-1									4.7	---	ug/l	NJ
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	2.9	1.0	ug/l	---
Benzene, (1-methyl-1-propenyl)-, (E)- - TIC	768-00-3												
Benzene, (3-methyl-2-butenyl)- - TIC	4489-84-3												
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3												
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2												
Benzene, 1,3-diethyl- - TIC	141-93-5												
Benzene, 1-ethyl-2,4-dimethyl- - TIC	874-41-9												
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	23	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	0.37	1.0	ug/l	J
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	1.9	5.0	ug/l	J
Cyclopentane, methyl- - TIC	96-37-7									4.0	---	ug/l	NJ
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Hexane - TIC	110-54-3									0.36	2.0	ug/l	J
Indan, 1-methyl- - TIC	767-58-8									2.7	---	ug/l	NJ
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	0.36	1.0	ug/l	J
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	0.50	5.0	ug/l	J
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	0.23	5.0	ug/l	J
Naphthalene - TIC	91-20-3												
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Total Alkanes TIC - TIC	Tic1									0.36	---	ug/l	NJ
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2												
Unknown - TIC	Tic3												
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	4.3	10	ug/l	J
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	Dup-01-080615				OB-6-080615				OB-11R-080615			
		Lab Sample ID:	490846723				490846724				490846725			
		Sample Date:	8/6/2015				8/6/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
(-)-10-Camphorsulfonyl chloride - TIC	39262-22-1									7.6	---	ug/l	NJ
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,4-Dioxane - TIC	123-91-1									1.5	10	ug/l	J
1-Methylnaphthalene - TIC	90-12-0												
1-Phenyl-1-butene - TIC	824-90-8												
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9												
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2												
Benzene, 1,4-bis(1-methylethenyl)- - TIC	1605-18-1												
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8									5.9	---	ug/l	NJ
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Indane - TIC	496-11-7												
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Naphthalene, 1-ethyl- - TIC	1127-76-0												
Naphthalene, 2,7-dimethyl- - TIC	582-16-1												
Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Phenol, 4,4'-(1-methylethylidene)bis- - TIC	80-05-7												
Phenol, p-tert-butyl- - TIC	98-54-4									3.4	---	ug/l	NJ
Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	Dup-01-080615				OB-6-080615				OB-11R-080615			
		Lab Sample ID:	490846723				490846724				490846725			
		Sample Date:	8/6/2015				8/6/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.64	ug/l	---	ND	0.66	ug/l	---	ND	0.66	ug/l	---
PCB-1221	11104-28-2	ND	0.64	ug/l	---	ND	0.66	ug/l	---	ND	0.66	ug/l	---
PCB-1232	11141-16-5	ND	0.64	ug/l	---	ND	0.66	ug/l	---	ND	0.66	ug/l	---
PCB-1242	53469-21-9	ND	0.64	ug/l	---	ND	0.66	ug/l	---	ND	0.66	ug/l	---
PCB-1248	12672-29-6	ND	0.64	ug/l	---	ND	0.66	ug/l	---	ND	0.66	ug/l	---
PCB-1254	11097-69-1	ND	0.64	ug/l	---	ND	0.66	ug/l	---	ND	0.66	ug/l	---
PCB-1260	11096-82-5	ND	0.64	ug/l	---	ND	0.66	ug/l	---	ND	0.66	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.64	ug/l	---	ND	0.66	ug/l	---	ND	0.66	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	2.2	0.020	mg/l	---	ND	0.020	mg/l	---	0.072	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	1.1	0.020	mg/l	---	ND	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.00054	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic	7440-38-2	0.0013	0.0020	mg/l	UB	0.00070	0.0020	mg/l	UB	0.025	0.0020	mg/l	---
Arsenic - Dissolved	7440-38-2	0.00098	0.0020	mg/l	UB	0.00076	0.0020	mg/l	UB	0.00089	0.0020	mg/l	UB
Barium	7440-39-3	0.017	0.0020	mg/l	---	0.020	0.0020	mg/l	---	0.098	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.010	0.0020	mg/l	---	0.020	0.0020	mg/l	---	0.044	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	11.8	1.0	mg/l	---	24.3	1.0	mg/l	---	60.2	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	10.9	1.0	mg/l	---	23.8	1.0	mg/l	---	55.8	1.0	mg/l	---
Chromium	7440-47-3	0.0032	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00056	0.0020	mg/l	J
Chromium - Dissolved	7440-47-3	0.0012	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	0.0020	0.0020	mg/l	---	0.0073	0.0020	mg/l	---	0.0022	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	0.0076	0.0020	mg/l	---	0.0017	0.0020	mg/l	J
Copper	7440-50-8	0.015	0.0020	mg/l	---	0.0030	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	0.0029	0.0020	mg/l	---	0.0012	0.0020	mg/l	J	ND	0.0020	mg/l	---
Iron	7439-89-6	3.3	0.025	mg/l	---	3.8	0.025	mg/l	---	70.4	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.88	0.025	mg/l	---	0.32	0.025	mg/l	---	5.4	0.025	mg/l	---
Lead	7439-92-1	0.0017	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	0.00034	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	5.6	1.0	mg/l	---	5.9	1.0	mg/l	---	7.4	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	5.0	1.0	mg/l	---	5.9	1.0	mg/l	---	7.4	1.0	mg/l	---
Manganese	7439-96-5	0.15	0.0020	mg/l	---	0.76	0.0020	mg/l	---	11.9	0.20	mg/l	---
Manganese - Dissolved	7439-96-5	0.022	0.0020	mg/l	---	0.73	0.0020	mg/l	---	11.9	0.20	mg/l	---
Nickel	7440-02-0	0.0051	0.0020	mg/l	---	0.0018	0.0020	mg/l	J	0.00086	0.0020	mg/l	J
Nickel - Dissolved	7440-02-0	0.0012	0.0020	mg/l	J	0.0016	0.0020	mg/l	J	0.90	0.20	mg/l	---
Potassium	7440-09-7	1.5	1.0	mg/l	---	1.9	1.0	mg/l	---	2.8	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	1.2	1.0	mg/l	---	1.8	1.0	mg/l	---	2.6	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	15.5	1.0	mg/l	---	15.8	1.0	mg/l	---	3.7	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	3.9	1.0	mg/l	---	15.7	1.0	mg/l	---	3.5	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	0.00029	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0050	0.0020	mg/l	B	0.0015	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0033	0.0020	mg/l	B	0.0012	0.0020	mg/l	UB	0.0012	0.0020	mg/l	UB
Zinc	7440-66-6	0.011	0.025	mg/l	J	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	10.0	1.00	mg/l	---	14.7	1.00	mg/l	---	5.37	1.00	mg/l	---
Sulfate	14808-79-8	9.73	1.00	mg/l	---	21.8	1.00	mg/l	---	ND	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	43.1	10.0	mg/l	---	82.5	10.0	mg/l	---	241	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	43.1	10.0	mg/l	---	82.5	10.0	mg/l	---	241	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	OB-27-080615				OB-30C-080615				OB-30B-080615			
		Lab Sample ID:	490846726				490846727				490846728			
		Sample Date:	8/6/2015				8/6/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	0.38	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8	3.4	1.0	ug/l	---								
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1H-Indene, 2,3-dihydro-1,2-dimethyl- - TIC	17057-82-8	5.4	---	ug/l	NJ								
1H-Indene, 2,3-dihydro-1,6-dimethyl- - TIC	17059-48-2	11	---	ug/l	NJ								
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9	5.2	---	ug/l	NJ								
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Phenylbut-1-ene - TIC	934-10-1												
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	3.0	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Benzene, (1-methyl-1-propenyl)-, (E)- - TIC	768-00-3	3.8	---	ug/l	NJ								
Benzene, (3-methyl-2-butenyl)- - TIC	4489-84-3	3.4	---	ug/l	NJ								
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3	19	---	ug/l	NJ								
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2	8.4	---	ug/l	NJ								
Benzene, 1,3-diethyl- - TIC	141-93-5	10	---	ug/l	NJ								
Benzene, 1-ethyl-2,4-dimethyl- - TIC	874-41-9	7.3	---	ug/l	NJ								
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	83	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	0.39	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	1.6	5.0	ug/l	J	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Cyclopentane, methyl- - TIC	96-37-7												
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Hexane - TIC	110-54-3												
Indan, 1-methyl- - TIC	767-58-8	6.0	---	ug/l	NJ								
Isopropylbenzene	98-82-8	2.3	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	0.28	1.0	ug/l	J	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	0.98	5.0	ug/l	J	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	0.33	5.0	ug/l	J	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Naphthalene - TIC	91-20-3	5.9	5.0	ug/l	---								
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Total Alkanes TIC - TIC	Tic1												
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2	4.6	---	ug/l	NJ								
Unknown - TIC	Tic3	3.3	---	ug/l	NJ								
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	6.2	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	OB-27-080615				OB-30C-080615				OB-30B-080615			
		Lab Sample ID:	490846726				490846727				490846728			
		Sample Date:	8/6/2015				8/6/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
(-)-10-Camphorsulfonyl chloride - TIC	39262-22-1												
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,4-Dioxane - TIC	123-91-1	2.2	10	ug/l	J								
1-Methylnaphthalene - TIC	90-12-0	2.4	2.0	ug/l	---								
1-Phenyl-1-butene - TIC	824-90-8	5.2	---	ug/l	NJ								
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9	9.0	---	ug/l	NJ								
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2	3.6	---	ug/l	NJ								
Benzene, 1,4-bis(1-methylethenyl)- - TIC	1605-18-1	3.4	---	ug/l	NJ								
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8												
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Indane - TIC	496-11-7	4.9	---	ug/l	NJ								
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Naphthalene	91-20-3	2.5	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Naphthalene, 1-ethyl- - TIC	1127-76-0	4.5	---	ug/l	NJ								
Naphthalene, 2,7-dimethyl- - TIC	582-16-1	4.0	---	ug/l	NJ								
Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Phenol, 4,4'-(1-methylethylidene)bis- - TIC	80-05-7	6.2	---	ug/l	NJ								
Phenol, p-tert-butyl- - TIC	98-54-4												
Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	OB-27-080615				OB-30C-080615				OB-30B-080615			
		Lab Sample ID:	490846726				490846727				490846728			
		Sample Date:	8/6/2015				8/6/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.013	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.013	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.013	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.0052	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.10	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.65	ug/l	---	ND	0.66	ug/l	---	ND	0.63	ug/l	---
PCB-1221	11104-28-2	ND	0.65	ug/l	---	ND	0.66	ug/l	---	ND	0.63	ug/l	---
PCB-1232	11141-16-5	ND	0.65	ug/l	---	ND	0.66	ug/l	---	ND	0.63	ug/l	---
PCB-1242	53469-21-9	ND	0.65	ug/l	---	ND	0.66	ug/l	---	ND	0.63	ug/l	---
PCB-1248	12672-29-6	ND	0.65	ug/l	---	ND	0.66	ug/l	---	ND	0.63	ug/l	---
PCB-1254	11097-69-1	ND	0.65	ug/l	---	ND	0.66	ug/l	---	ND	0.63	ug/l	---
PCB-1260	11096-82-5	ND	0.65	ug/l	---	ND	0.66	ug/l	---	ND	0.63	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.65	ug/l	---	ND	0.66	ug/l	---	ND	0.63	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.064	0.020	mg/l	---	1.8	0.020	mg/l	---	0.082	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	0.11	0.020	mg/l	---	0.011	0.020	mg/l	J
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	0.00050	0.0020	mg/l	J	0.00061	0.0020	mg/l	J
Arsenic	7440-38-2	0.026	0.0020	mg/l	---	0.0023	0.0020	mg/l	B	0.00089	0.0020	mg/l	UB
Arsenic - Dissolved	7440-38-2	0.00092	0.0020	mg/l	UB	0.0012	0.0020	mg/l	J	0.00058	0.0020	mg/l	J
Barium	7440-39-3	0.070	0.0020	mg/l	---	0.025	0.0020	mg/l	---	0.029	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.043	0.0020	mg/l	---	0.015	0.0020	mg/l	---	0.028	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	38.1	1.0	mg/l	---	38.2	1.0	mg/l	---	24.5	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	36.3	1.0	mg/l	---	37.3	1.0	mg/l	---	24.9	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---	0.0029	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	0.0041	0.0020	mg/l	---	0.0014	0.0020	mg/l	J	0.0022	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	0.0037	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0022	0.0020	mg/l	---
Copper	7440-50-8	ND	0.0020	mg/l	---	0.0037	0.0020	mg/l	---	0.0012	0.0020	mg/l	J
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0015	0.0020	mg/l	UB
Iron	7439-89-6	52.0	0.025	mg/l	---	3.0	0.025	mg/l	---	0.13	0.025	mg/l	---
Iron - Dissolved	7439-89-6	5.1	0.025	mg/l	---	0.099	0.025	mg/l	---	0.019	0.025	mg/l	J
Lead	7439-92-1	ND	0.0020	mg/l	---	0.0013	0.0020	mg/l	J	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00033	0.0020	mg/l	J
Magnesium	7439-95-4	5.0	1.0	mg/l	---	16.7	1.0	mg/l	---	5.5	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	5.0	1.0	mg/l	---	16.5	1.0	mg/l	---	5.7	1.0	mg/l	---
Manganese	7439-96-5	8.0	0.020	mg/l	---	0.16	0.0020	mg/l	---	1.6	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	8.2	0.010	mg/l	---	0.066	0.0020	mg/l	---	1.6	0.0020	mg/l	---
Nickel	7440-02-0	0.0024	0.0020	mg/l	---	0.0038	0.0020	mg/l	---	0.0023	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.0027	0.010	mg/l	J	0.0014	0.0020	mg/l	J	0.0031	0.0020	mg/l	---
Potassium	7440-09-7	1.6	1.0	mg/l	---	5.2	1.0	mg/l	---	2.5	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	1.5	1.0	mg/l	---	5.0	1.0	mg/l	---	2.5	1.0	mg/l	---
Selenium	7782-49-2	0.00077	0.0020	mg/l	J	0.0024	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	0.0020	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	3.1	1.0	mg/l	---	8.7	1.0	mg/l	---	23.8	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	3.0	1.0	mg/l	---	8.6	1.0	mg/l	---	24.0	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0016	0.0020	mg/l	UB	0.0084	0.0020	mg/l	---	0.0015	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0012	0.0020	mg/l	UB	0.0059	0.0020	mg/l	---	0.0017	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	2.98	1.00	mg/l	---	34.0	1.00	mg/l	---	33.5	1.00	mg/l	---
Sulfate	14808-79-8	ND	1.00	mg/l	---	24.5	1.00	mg/l	---	18.6	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	174	10.0	mg/l	---	111	10.0	mg/l	---	67.3	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	174	10.0	mg/l	---	111	10.0	mg/l	---	67.3	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

Sample Name: RW-3 (77-87)-080615
Lab Sample ID: 490846729
Sample Date: 8/6/2015

Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier
GC/MS VOC					
OSW-8260C					
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	0.26	1.0	ug/l	J
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8				
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---
1H-Indene, 2,3-dihydro-1,2-dimethyl- - TIC	17057-82-8				
1H-Indene, 2,3-dihydro-1,6-dimethyl- - TIC	17059-48-2				
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9				
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---
3-Phenylbut-1-ene - TIC	934-10-1				
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---
Benzene, (1-methyl-1-propenyl)-, (E)- - TIC	768-00-3				
Benzene, (3-methyl-2-butenyl)- - TIC	4489-84-3				
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3				
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2				
Benzene, 1,3-diethyl- - TIC	141-93-5				
Benzene, 1-ethyl-2,4-dimethyl- - TIC	874-41-9				
Bromoform	75-25-2	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---
Cyclopentane, methyl- - TIC	96-37-7				
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---
Hexane - TIC	110-54-3				
Indan, 1-methyl- - TIC	767-58-8				
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---
Naphthalene - TIC	91-20-3				
Styrene	100-42-5	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---
Total Alkanes TIC - TIC	Tic1				
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---
Unknown - TIC	Tic2				
Unknown - TIC	Tic3				
Vinyl chloride	75-01-4	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---
OSW-8260CSim					
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	22	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

Sample Name: RW-3 (77-87)-080615
Lab Sample ID: 490846729
Sample Date: 8/6/2015

Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier
GC/MS SVOC					
OSW-8270D					
(-)-10-Camphorsulfonyl chloride - TIC	39262-22-1				
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---
1,4-Dioxane - TIC	123-91-1	9.0	10	ug/l	J
1-Methylnaphthalene - TIC	90-12-0				
1-Phenyl-1-butene - TIC	824-90-8				
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9				
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---
2-Chlorophenol	95-57-8	ND	10	ug/l	---
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---
2-Methylphenol	95-48-7	ND	10	ug/l	---
2-Nitroaniline	88-74-4	ND	25	ug/l	---
2-Nitrophenol	88-75-5	ND	10	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---
3-Nitroaniline	99-09-2	ND	25	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---
4-Chloroaniline	106-47-8	ND	10	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---
4-Nitroaniline	100-01-6	ND	25	ug/l	---
4-Nitrophenol	100-02-7	ND	25	ug/l	---
Acenaphthene	83-32-9	ND	2.0	ug/l	---
Acenaphthylene	208-96-8	ND	2.0	ug/l	---
Acetophenone	98-86-2	ND	10	ug/l	---
Anthracene	120-12-7	ND	2.0	ug/l	---
Atrazine	1912-24-9	ND	10	ug/l	---
Benzaldehyde	100-52-7	ND	10	ug/l	---
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2				
Benzene, 1,4-bis(1-methylethenyl)- - TIC	1605-18-1				
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8				
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---
Caprolactam	105-60-2	ND	10	ug/l	---
Carbazole	86-74-8	ND	10	ug/l	---
Chrysene	218-01-9	ND	2.0	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---
Dibenzofuran	132-64-9	ND	10	ug/l	---
Diethyl phthalate	84-66-2	ND	10	ug/l	---
Dimethyl phthalate	131-11-3	ND	10	ug/l	---
Diphenyl	92-52-4	ND	10	ug/l	---
Fluoranthene	206-44-0	ND	2.0	ug/l	---
Fluorene	86-73-7	ND	2.0	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---
Hexachloroethane	67-72-1	ND	10	ug/l	---
Indane - TIC	496-11-7				
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---
Isophorone	78-59-1	ND	10	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---
Naphthalene	91-20-3	ND	2.0	ug/l	---
Naphthalene, 1-ethyl- - TIC	1127-76-0				
Naphthalene, 2,7-dimethyl- - TIC	582-16-1				
Nitrobenzene	98-95-3	ND	10	ug/l	---
Phenanthrene	85-01-8	ND	2.0	ug/l	---
Phenol	108-95-2	ND	10	ug/l	---
Phenol, 4,4'-(1-methylethylidene)bis- - TIC	80-05-7				
Phenol, p-tert-butyl- - TIC	98-54-4				
Pyrene	129-00-0	ND	2.0	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

Sample Name: RW-3 (77-87)-080615
Lab Sample ID: 490846729
Sample Date: 8/6/2015

Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier
OSW-8270DSim					
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---
GC Other					
OSW-8082A					
PCB-1016	12674-11-2	ND	0.66	ug/l	---
PCB-1221	11104-28-2	ND	0.66	ug/l	---
PCB-1232	11141-16-5	ND	0.66	ug/l	---
PCB-1242	53469-21-9	ND	0.66	ug/l	---
PCB-1248	12672-29-6	ND	0.66	ug/l	---
PCB-1254	11097-69-1	ND	0.66	ug/l	---
PCB-1260	11096-82-5	ND	0.66	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.66	ug/l	---
Metals					
OSW-6020A					
Aluminum	7429-90-5	0.013	0.020	mg/l	J
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---
Arsenic	7440-38-2	0.00088	0.0020	mg/l	UB
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---
Barium	7440-39-3	0.050	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.045	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---
Calcium	7440-70-2	58.8	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	57.4	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---
Cobalt	7440-48-4	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---
Copper	7440-50-8	0.00090	0.0020	mg/l	J
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---
Iron	7439-89-6	0.082	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.012	0.025	mg/l	J
Lead	7439-92-1	0.00026	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---
Magnesium	7439-95-4	15.6	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	15.7	1.0	mg/l	---
Manganese	7439-96-5	0.096	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.093	0.0020	mg/l	---
Nickel	7440-02-0	0.0094	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.0069	0.0020	mg/l	---
Potassium	7440-09-7	2.3	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	2.2	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---
Sodium	7440-23-5	7.7	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	7.5	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0020	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.0020	0.0020	mg/l	B
Zinc	7440-66-6	0.016	0.025	mg/l	J
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---
OSW-7470A					
Mercury	7439-97-6	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---
General Chemistry					
OSW-9012B					
Cyanide, Total	57-12-5	ND	0.010	mg/l	---
OSW-9056A					
Chloride	16887-00-6	2190	5.00	mg/l	---
Sulfate	14808-79-8	139	1.00	mg/l	---
Prep					
APHA-2320B					
Bicarbonate Alkalinity as CaCO3	E-14508	202	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	202	10.0	mg/l	---

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

	Sample Name:	RW-7-080615				OB-21-080615				Dup-01-080615				OB-6-080615				OB-11R-080615				OB-27-080615			
	Lab Sample ID:	490846721				490846722				490846723				490846724				490846725				490846726			
	Sample Date:	8/6/2015				8/6/2015				8/6/2015				8/6/2015				8/6/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																									
OSW-8260C																									
1H-Indene, 2,3-dihydro-1,2-dimethyl- - TIC	17057-82-8																					5.4	---	ug/l	NJ
1H-Indene, 2,3-dihydro-1,6-dimethyl- - TIC	17059-48-2																					11	---	ug/l	NJ
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9																	4.8	---	ug/l	NJ	5.2	---	ug/l	NJ
3-Phenylbut-1-ene - TIC	934-10-1																	4.7	---	ug/l	NJ				
Benzene, (1-methyl-1-propenyl)-, (E)- - TIC	768-00-3																					3.8	---	ug/l	NJ
Benzene, (3-methyl-2-butenyl)- - TIC	4489-84-3																					3.4	---	ug/l	NJ
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3																					19	---	ug/l	NJ
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2																					8.4	---	ug/l	NJ
Benzene, 1,3-diethyl- - TIC	141-93-5																					10	---	ug/l	NJ
Benzene, 1-ethyl-2,4-dimethyl- - TIC	874-41-9																					7.3	---	ug/l	NJ
Cyclopentane, methyl- - TIC	96-37-7																	4.0	---	ug/l	NJ				
Hexane - TIC	110-54-3																	0.36	2.0	ug/l	J				
Indan, 1-methyl- - TIC	767-58-8																	2.7	---	ug/l	NJ	6.0	---	ug/l	NJ
Total Alkanes TIC - TIC	Tic1																	0.36	---	ug/l	NJ				
Unknown - TIC	Tic2																					4.6	---	ug/l	NJ
Unknown - TIC	Tic3																					3.3	---	ug/l	NJ
GC/MS SVOC																									
OSW-8270D																									
(-)-10-Camphorsulfonyl chloride - TIC	39262-22-1																	7.6	---	ug/l	NJ				
1,4-Dioxane - TIC	123-91-1																	1.5	10	ug/l	J	2.2	10	ug/l	J
1-Phenyl-1-butene - TIC	824-90-8																					5.2	---	ug/l	NJ
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9																					9.0	---	ug/l	NJ
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2																					3.6	---	ug/l	NJ
Benzene, 1,4-bis(1-methylethenyl)- - TIC	1605-18-1																					3.4	---	ug/l	NJ
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8																	5.9	---	ug/l	NJ				
Indane - TIC	496-11-7																					4.9	---	ug/l	NJ
Naphthalene, 1-ethyl- - TIC	1127-76-0																					4.5	---	ug/l	NJ
Naphthalene, 2,7-dimethyl- - TIC	582-16-1																					4.0	---	ug/l	NJ
Phenol, 4,4'-(1-methylethylidene)bis- - TIC	80-05-7																					6.2	---	ug/l	NJ
Phenol, p-tert-butyl- - TIC	98-54-4																	3.4	---	ug/l	NJ				
Metals																									
OSW-6020A																									
Arsenic	7440-38-2	0.00074	0.0020	mg/l	UB	0.0014	0.0020	mg/l	UB	0.0013	0.0020	mg/l	UB	0.00070	0.0020	mg/l	UB								
Arsenic - Dissolved	7440-38-2	0.00072	0.0020	mg/l	UB	0.00056	0.0020	mg/l	UB	0.00098	0.0020	mg/l	UB	0.00076	0.0020	mg/l	UB	0.00089	0.0020	mg/l	UB	0.00092	0.0020	mg/l	UB
Copper - Dissolved	7440-50-8																								
Manganese	7439-96-5	0.0042	0.0020	mg/l	J																				
Vanadium	7440-62-2	0.0019	0.0020	mg/l	UB	0.0050	0.0020	mg/l	B	0.0050	0.0020	mg/l	B	0.0015	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB	0.0016	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0018	0.0020	mg/l	UB	0.0025	0.0020	mg/l	B	0.0033	0.0020	mg/l	B	0.0012	0.0020	mg/l	UB	0.0012	0.0020	mg/l	UB	0.0012	0.0020	mg/l	UB
General Chemistry																									
OSW-9012B																									
Cyanide, Total	57-12-5	ND	0.010	mg/l	UJ																				

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84672-1

		Sample Name:	OB-30C-080615				OB-30B-080615				RW-3 (77-87)-080615			
		Lab Sample ID:	490846727				490846728				490846729			
		Sample Date:	8/6/2015				8/6/2015				8/6/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1H-Indene, 2,3-dihydro-1,2-dimethyl- - TIC	17057-82-8												
1H-Indene, 2,3-dihydro-1,6-dimethyl- - TIC	17059-48-2												
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9												
3-Phenylbut-1-ene - TIC	934-10-1												
Benzene, (1-methyl-1-propenyl)-, (E)- - TIC	768-00-3												
Benzene, (3-methyl-2-butenyl)- - TIC	4489-84-3												
Benzene, 1,2,3,4-tetramethyl- - TIC	488-23-3												
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2												
Benzene, 1,3-diethyl- - TIC	141-93-5												
Benzene, 1-ethyl-2,4-dimethyl- - TIC	874-41-9												
Cyclopentane, methyl- - TIC	96-37-7												
Hexane - TIC	110-54-3												
Indan, 1-methyl- - TIC	767-58-8												
Total Alkanes TIC - TIC	Tic1												
Unknown - TIC	Tic2												
Unknown - TIC	Tic3												
GC/MS SVOC													
OSW-8270D													
(-)-10-Camphorsulfonyl chloride - TIC	39262-22-1												
1,4-Dioxane - TIC	123-91-1									9.0	10	ug/l	J
1-Phenyl-1-butene - TIC	824-90-8												
1H-Indene, 2,3-dihydro-4,7-dimethyl- - TIC	6682-71-9												
Benzene, 1,2,4,5-tetramethyl- - TIC	95-93-2												
Benzene, 1,4-bis(1-methylethenyl)- - TIC	1605-18-1												
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8												
Indane - TIC	496-11-7												
Naphthalene, 1-ethyl- - TIC	1127-76-0												
Naphthalene, 2,7-dimethyl- - TIC	582-16-1												
Phenol, 4,4'-(1-methylethylidene)bis- - TIC	80-05-7												
Phenol, p-tert-butyl- - TIC	98-54-4												
Metals													
OSW-6020A													
Arsenic	7440-38-2	0.0023	0.0020	mg/l	B	0.00089	0.0020	mg/l	UB	0.00088	0.0020	mg/l	UB
Arsenic - Dissolved	7440-38-2												
Copper - Dissolved	7440-50-8					0.0015	0.0020	mg/l	UB				
Manganese	7439-96-5												
Vanadium	7440-62-2					0.0015	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2					0.0017	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5												

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
84672
#1
O

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

09/15/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Carrier:	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	8082A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filtert)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
RW-7-080615 MS/MSD	8/6/15	10:05	G	Water	N	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
OB-21-080615	8/6/15	10:35	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Dup-01-080615	8/6/15	12:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
OB-6-080615	8/6/15	10:05	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
OB-11R-080615	8/6/15	12:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
OB-27-080615	8/6/15	15:20	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
OB-30C-080615	8/6/15	15:05	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
OB-30B-080615	8/6/15	15:10	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
~~RW-3-080615~~				Water																	
RW-3 (77-87)-080615	8/6/15	14:35	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
TB-03-080715	8/7/15	—	—	Water	N	N	✓	✓													

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	8/7/15 730	CE	James Thro	8/7/15 730	TA
James Thro	8/7/15 1320	TA	[signature]		
[signature]	8/10/15 1800		Uwe Hal 1.6/0.9/1.1/0.9/0.1/2.0/0.1	8/11/15 930	TAN

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

E-Mail Date: 2015-10-27
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-85153-1

PREPARED BY:
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1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-85153-1	8/12-13/2015	8/14-15/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
GCMS SVOC and SIM
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
PCB
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
METALS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
INORGANICS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:
GCMS VOC
CCV/ICV – CCV for analytical batch 275550 analyzed on 8/23 has %D outliers (20% max) biased low for target analytes acetone and biased high for target analytes cyclohexane and cyclohexanone (%D was less than 30% for all). Qualification of client sample results was not made based on these CCV percent difference outliers as only analyte detection associated with these outliers was already J flagged due to being detected below the RL.
GCMS VOC-SIM
No additional non-conforming observations to report.
GCMS SVOC
Sample was received at a pH of 10 (recommended pH 7) for sample -007 GCMS SVOC analysis. Sample pH was adjusted to pH 2 prior to initial extraction so sample preservation non-conformance did not require qualification.
METALS
PDS and SERIAL DILUTION analytical sequence outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.
CRQL's outside of lab criteria biased high did not affect qualification of client sample results.
NOTE: QC batch 27599 thallium raw data results for samples -001 and -002 did not match the reported results. Lab inquiry in progress – database and report will be corrected if applicable pending lab response.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not affect sample quantitation. There was no ending CCV reported for the sequences evaluated.

Laboratory "P" flag outliers noted for quantification differences determined from the two analytical columns were associated with surrogate recoveries only for samples that were non-detect on both columns so qualification was not required based on these "P" flags.

LABORATORY FOLLOW-UP

Total thallium results for client samples -001 and -002 were re-visited with the lab as the reported results were marginally different from raw data values. Revised level 4 laboratory data package was received 2015-10-27 and original data was confirmed using updated data package.

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank had a detection below the RL for methylene chloride. Client samples -003, -004, -005, -006 and -007 methylene chloride results should be considered to be non-detect at the RL and qualified with UB flags.

GCMS VOC QC batch 275550 LCS recovery was an outlier biased high for cis-1,2-dichloroethylene. Qualification of client sample results was not required based on this high bias QC outlier.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

GCMS SVOC QC batch 274686 and PCB QC batch 277885 and PAH QC batch 274580 did not include MS recovery data due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

GCMS SVOC QC batch 274686 LCS recoveries were outliers biased high for benzaldehyde. Qualification of client sample results was not required based on this high bias QC outlier. LCS/LCSduplicate RPD only was an outlier for pentachlorophenol so qualification was not required based on this QC outlier alone.

GCMS SVOC QC batch 274686 method blank had detections above the RL for benzo(ghi)perylene, dibenzo(ah)anthracene and indeno(123cd)pyrene. Client sample -004 benzo(ghi)perylene results should be considered to be non-detect at the RL and qualified with a UB flag.

PCB results qualified by the laboratory with P flags indicating that the relative percent difference between confirmatory results was greater than 40% were not qualified as part of this level 2 verification review but will be evaluated in the level 4 validation package review.

Metals method blanks had detections below the RL in QC batch 272053 for total arsenic, manganese, antimony and vanadium and in QC batch 275991 for aluminum and above the RL in QC batch 274351 for vanadium. Client samples -001, -003, -006 total arsenic results and client samples -001, -002, -004 total antimony results and client samples -001, -003, -004 total vanadium results and client samples -001, -003, -004 dissolved vanadium results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -004 total arsenic results and client samples -005, -006 total vanadium results and client sample -007 total manganese results and client samples -002, -005, -006 and -007 dissolved vanadium results and client samples -001 and -003 total aluminum results should be considered to be non-detect at the concentration reported and qualified with B flags.

Metals QC batch 276031, 273945 and 275991 and Cyanide QC batch 273559 and 274313 MS recovery

outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD’s were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6ºC after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 85153-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Spectroscopy(D)	Metals by ICP Mass Spectroscopy	(Manual Cold Vapor)(D)	(Manual Cold Vapor)	TOTAL AND AMENABLE COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Inorganic Anions by IC	Alkalinity Prep
490851531	PM AirShaft-50-081215	8/12/2015	10:05:00	X	X	X	X	X	X	X	X	X	X	X	X
490851532	OB-25-081215	8/12/2015	9:50:00	X	X	X	X	X	X	X	X	X	X	X	X
490851533	OB-2-081215	8/12/2015	12:55:00	X	X	X	X	X	X	X	X	X	X	X	X
490851534	SC-2-081215	8/12/2015	2:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490851535	RW-13(150-170)-081215	8/12/2015	11:10:00	X	X	X	X	X	X	X	X	X	X	X	X
490851536	OB-29-081215	8/12/2015	3:30:00	X	X	X	X	X	X	X	X	X	X	X	X
490851537	RW-12(130-140)-081215	8/12/2015	2:50:00	X	X	X	X	X	X	X	X	X	X	X	X
490851538	TB-06-081315	8/13/2015	1:00:00	X	X										

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85153-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85153-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85153-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85153-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	PM AirShaft-50-081215				OB-25-081215				OB-2-081215			
		Lab Sample ID:	490851531				490851532				490851533			
		Sample Date:	8/12/2015				8/12/2015				8/12/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Hexanol, 2-ethyl- - TIC	104-76-7												
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Hydroxymandelic acid, ethyl ester, di- - TIC	1000071-88-9												
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	0.22	5.0	ug/l	UB
Silanol, dimethyl(1,1,2-trimethylpropyl) - TIC	55644-10-5					3.2	---	ug/l	NJ				
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2												
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	PM AirShaft-50-081215				OB-25-081215				OB-2-081215			
		Lab Sample ID:	490851531				490851532				490851533			
		Sample Date:	8/12/2015				8/12/2015				8/12/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8												
	15-Crown-5 - TIC	33100-27-5												
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Methoxybenzhydrazide - TIC	3290-99-1												
	4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzocycloheptatriene - TIC	264-09-5												
	Benzo[b]triphenylene - TIC	215-58-7												
	Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethylene glycol monododecyl ether - TIC	3055-93-4												
	Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5												
	Ethanol, 2-[2-(2-butoxyethoxy)ethoxy]- - TIC	143-22-6												
	Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexadecane - TIC	544-76-3	4.0	---	ug/l	NJ								
	Hexagol - TIC	2615-15-8									16	---	ug/l	NJ
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	n-Hexadecanoic acid - TIC	57-10-3									6.8	---	ug/l	NJ
	N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Octadec-9-enoic acid - TIC	1000190-13-7												
	Octadecanoic acid - TIC	57-11-4									5.5	---	ug/l	NJ
	Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Phenol, 4-(1,1,3,3-tetramethylbutyl)- - TIC	140-66-9												
	Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Tetradecane - TIC	629-59-4					4.8	---	ug/l	NJ				
	Tetradecanoic acid - TIC	544-63-8	3.7	---	ug/l	NJ								
	Tridecanoic acid - TIC	638-53-9					3.6	---	ug/l	NJ				
	[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0												

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	PM AirShaft-50-081215				OB-25-081215				OB-2-081215			
		Lab Sample ID:	490851531				490851532				490851533			
		Sample Date:	8/12/2015				8/12/2015				8/12/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.050	0.020	mg/l	B	12.8	0.020	mg/l	---	0.046	0.020	mg/l	B
Aluminum - Dissolved	7429-90-5	0.016	0.020	mg/l	J	1.8	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	0.00061	0.0020	mg/l	UB	0.00083	0.0020	mg/l	UB	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.00053	0.0020	mg/l	J	0.0013	0.0020	mg/l	J	0.00064	0.0020	mg/l	J
Arsenic	7440-38-2	0.0013	0.0020	mg/l	UB	0.0041	0.0020	mg/l	---	0.0012	0.0020	mg/l	UB
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	0.0010	0.0020	mg/l	J	ND	0.0020	mg/l	---
Barium	7440-39-3	0.0093	0.0020	mg/l	---	0.076	0.0020	mg/l	---	0.0052	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.0094	0.0020	mg/l	---	0.036	0.0020	mg/l	---	0.0054	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	0.0018	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	0.00064	0.0010	mg/l	J	ND	0.0010	mg/l	---
Calcium	7440-70-2	6.4	1.0	mg/l	---	43.4	1.0	mg/l	---	12.1	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	6.1	1.0	mg/l	---	39.5	1.0	mg/l	---	12.8	1.0	mg/l	---
Chromium	7440-47-3	0.00076	0.0020	mg/l	J	0.0063	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	0.0020	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	ND	0.0020	mg/l	---	0.0053	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	0.00082	0.0020	mg/l	J	ND	0.0020	mg/l	---
Copper	7440-50-8	0.0024	0.0020	mg/l	---	0.031	0.0020	mg/l	---	0.0020	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	0.0017	0.0020	mg/l	J	0.0082	0.0020	mg/l	---	0.0013	0.0020	mg/l	J
Iron	7439-89-6	0.47	0.025	mg/l	---	8.1	0.025	mg/l	---	0.12	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.14	0.025	mg/l	---	1.6	0.025	mg/l	---	ND	0.025	mg/l	---
Lead	7439-92-1	0.0045	0.0020	mg/l	---	0.011	0.0020	mg/l	---	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	0.00082	0.0020	mg/l	J	0.0010	0.0020	mg/l	J	ND	0.0020	mg/l	---
Magnesium	7439-95-4	1.8	1.0	mg/l	---	9.8	1.0	mg/l	---	4.5	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	1.8	1.0	mg/l	---	7.8	1.0	mg/l	---	4.6	1.0	mg/l	---
Manganese	7439-96-5	0.017	0.0020	mg/l	---	0.34	0.0020	mg/l	---	0.0054	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.0094	0.0020	mg/l	---	0.051	0.0020	mg/l	---	0.00081	0.0020	mg/l	J
Nickel	7440-02-0	0.0088	0.0020	mg/l	---	0.010	0.0020	mg/l	---	0.00070	0.0020	mg/l	J
Nickel - Dissolved	7440-02-0	0.0078	0.0020	mg/l	---	0.0024	0.0020	mg/l	---	ND	0.0020	mg/l	---
Potassium	7440-09-7	0.51	1.0	mg/l	J	7.7	1.0	mg/l	---	1.2	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	0.47	1.0	mg/l	J	7.3	1.0	mg/l	---	1.3	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	0.0017	0.0020	mg/l	J	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	2.8	1.0	mg/l	---	69.9	1.0	mg/l	---	3.6	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	2.7	1.0	mg/l	---	67.7	1.0	mg/l	---	3.9	1.0	mg/l	---
Thallium	7440-28-0	0.00067	0.0020	mg/l	J	0.00021	0.0020	mg/l	J	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0016	0.0020	mg/l	UB	0.011	0.0020	mg/l	---	0.0015	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0017	0.0020	mg/l	UB	0.0050	0.0020	mg/l	B	0.0018	0.0020	mg/l	UB
Zinc	7440-66-6	1.6	0.13	mg/l	---	0.052	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	1.6	0.025	mg/l	---	0.013	0.025	mg/l	J	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	1.13	1.00	mg/l	---	91.7	1.00	mg/l	---	2.18	1.00	mg/l	---
Sulfate	14808-79-8	4.35	1.00	mg/l	---	9.24	1.00	mg/l	---	10.1	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	24.0	10.0	mg/l	---	124	10.0	mg/l	---	37.6	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	24.0	10.0	mg/l	---	124	10.0	mg/l	---	37.6	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	SC-2-081215				RW-13(150-170)-081215				OB-29-081215			
		Lab Sample ID:	490851534				490851535				490851536			
		Sample Date:	8/12/2015				8/12/2015				8/12/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Hexanol, 2-ethyl- - TIC	104-76-7												
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Hydroxymandelic acid, ethyl ester, di- - TIC	1000071-88-9												
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	0.23	5.0	ug/l	UB	0.34	5.0	ug/l	UB	0.28	5.0	ug/l	UB
Silanol, dimethyl(1,1,2-trimethylpropyl) - TIC	55644-10-5												
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2												
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	SC-2-081215				RW-13(150-170)-081215				OB-29-081215			
		Lab Sample ID:	490851534				490851535				490851536			
		Sample Date:	8/12/2015				8/12/2015				8/12/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8												
	15-Crown-5 - TIC	33100-27-5	62	---	ug/l	NJ								
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Methoxybenzhydrazide - TIC	3290-99-1	5.6	---	ug/l	NJ								
	4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzocycloheptatriene - TIC	264-09-5	3.6	---	ug/l	NJ								
	Benzo[b]triphenylene - TIC	215-58-7	25	---	ug/l	NJ								
	Benzo[g,h,i]perylene	191-24-2	0.81	2.0	ug/l	UB	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethylene glycol monododecyl ether - TIC	3055-93-4												
	Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5												
	Ethanol, 2-[2-(2-butoxyethoxy)ethoxy]- - TIC	143-22-6												
	Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexadecane - TIC	544-76-3												
	Hexagol - TIC	2615-15-8												
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	n-Hexadecanoic acid - TIC	57-10-3	4.8	---	ug/l	NJ								
	N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Octadec-9-enoic acid - TIC	1000190-13-7	4.6	---	ug/l	NJ								
	Octadecanoic acid - TIC	57-11-4	4.3	---	ug/l	NJ								
	Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Phenol	108-95-2	3.1	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
	Phenol, 4-(1,1,3,3-tetramethylbutyl)- - TIC	140-66-9												
	Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Tetradecane - TIC	629-59-4												
	Tetradecanoic acid - TIC	544-63-8												
	Tridecanoic acid - TIC	638-53-9												
	[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0	8.5	---	ug/l	NJ								

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	SC-2-081215				RW-13(150-170)-081215				OB-29-081215			
		Lab Sample ID:	490851534				490851535				490851536			
		Sample Date:	8/12/2015				8/12/2015				8/12/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.088	0.020	mg/l	---	0.53	0.020	mg/l	---	1.7	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	0.84	0.020	mg/l	---
Antimony	7440-36-0	0.00077	0.0020	mg/l	UB	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00073	0.0020	mg/l	J
Arsenic	7440-38-2	0.0021	0.0020	mg/l	B	0.0046	0.0020	mg/l	---	0.0015	0.0020	mg/l	UB
Arsenic - Dissolved	7440-38-2	0.0046	0.0020	mg/l	---	0.0020	0.0020	mg/l	---	0.012	0.0020	mg/l	---
Barium	7440-39-3	0.032	0.0020	mg/l	---	0.031	0.0020	mg/l	---	0.013	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.040	0.0020	mg/l	---	0.36	0.0020	mg/l	---	0.015	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	65.7	1.0	mg/l	---	31.9	1.0	mg/l	---	13.9	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	452	50.0	mg/l	---	92.9	100	mg/l	J	47.4	1.0	mg/l	---
Chromium	7440-47-3	0.00052	0.0020	mg/l	J	0.00090	0.0020	mg/l	J	0.0018	0.0020	mg/l	J
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	0.0019	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.00075	0.0020	mg/l	J
Cobalt - Dissolved	7440-48-4	0.00083	0.0020	mg/l	J	ND	0.20	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	0.0030	0.0020	mg/l	---	0.00074	0.0020	mg/l	J	0.0031	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	0.00084	0.0020	mg/l	J	ND	0.0020	mg/l	---
Iron	7439-89-6	0.30	0.025	mg/l	---	0.65	0.025	mg/l	---	1.2	0.025	mg/l	---
Iron - Dissolved	7439-89-6	13.3	0.025	mg/l	---	2.7	0.025	mg/l	---	0.018	0.025	mg/l	J
Lead	7439-92-1	0.00058	0.0020	mg/l	J	0.00033	0.0020	mg/l	J	0.00054	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	0.00031	0.0020	mg/l	J	ND	0.0020	mg/l	---
Magnesium	7439-95-4	15.2	1.0	mg/l	---	6.8	1.0	mg/l	---	4.1	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	123	50.0	mg/l	---	24.5	100	mg/l	J	ND	1.0	mg/l	---
Manganese	7439-96-5	0.21	0.0020	mg/l	---	0.092	0.0020	mg/l	---	0.036	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	1.1	0.10	mg/l	---	0.22	0.20	mg/l	---	ND	0.0020	mg/l	---
Nickel	7440-02-0	0.0030	0.0020	mg/l	---	0.0084	0.0020	mg/l	---	0.0022	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.00067	0.0020	mg/l	J	0.00093	0.0020	mg/l	J	0.00097	0.0020	mg/l	J
Potassium	7440-09-7	2.7	1.0	mg/l	---	1.8	1.0	mg/l	---	1.3	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	6.9	1.0	mg/l	---	9.3	1.0	mg/l	---	10.8	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0038	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	7.3	1.0	mg/l	---	9.9	1.0	mg/l	---	3.2	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	64.1	1.0	mg/l	---	153	100	mg/l	---	131	20.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0015	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B	0.0028	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.0016	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B	0.015	0.0020	mg/l	B
Zinc	7440-66-6	0.030	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	1.93	1.00	mg/l	---	3.66	1.00	mg/l	---	3.22	1.00	mg/l	---
Sulfate	14808-79-8	27.4	1.00	mg/l	---	16.5	1.00	mg/l	---	5.38	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	208	10.0	mg/l	---	96.4	10.0	mg/l	---	44.6	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	208	10.0	mg/l	---	96.4	10.0	mg/l	---	44.6	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	RW-12(130-140)-081215				TB-06-081315			
		Lab Sample ID:	490851537				490851538			
		Sample Date:	8/12/2015				8/13/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC									
OSW-8260C									
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Hexanol, 2-ethyl- - TIC	104-76-7	3.1	---	ug/l	NJ				
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---
3-Hydroxymandelic acid, ethyl ester, di- - TIC	1000071-88-9	5.4	---	ug/l	NJ				
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	0.27	1.0	ug/l	J	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	0.66	5.0	ug/l	J	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	0.22	5.0	ug/l	UB	0.22	5.0	ug/l	J
Silanol, dimethyl(1,1,2-trimethylpropyl) - TIC	55644-10-5								
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2	5.2	---	ug/l	NJ				
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim									
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	RW-12(130-140)-081215				TB-06-081315			
		Lab Sample ID:	490851537				490851538			
		Sample Date:	8/12/2015				8/13/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC									
OSW-8270D									
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---				
1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8	14	---	ug/l	NJ				
15-Crown-5 - TIC	33100-27-5								
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---				
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---				
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---				
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---				
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---				
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---				
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---				
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---				
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---				
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---				
2-Chlorophenol	95-57-8	ND	10	ug/l	---				
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---				
2-Methylphenol	95-48-7	ND	10	ug/l	---				
2-Nitroaniline	88-74-4	ND	25	ug/l	---				
2-Nitrophenol	88-75-5	ND	10	ug/l	---				
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---				
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---				
3-Nitroaniline	99-09-2	ND	25	ug/l	---				
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---				
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---				
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---				
4-Chloroaniline	106-47-8	ND	10	ug/l	---				
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---				
4-Methoxybenzhydrazide - TIC	3290-99-1								
4-Nitroaniline	100-01-6	ND	25	ug/l	---				
4-Nitrophenol	100-02-7	ND	25	ug/l	---				
Acenaphthene	83-32-9	ND	2.0	ug/l	---				
Acenaphthylene	208-96-8	ND	2.0	ug/l	---				
Acetophenone	98-86-2	ND	10	ug/l	---				
Anthracene	120-12-7	ND	2.0	ug/l	---				
Atrazine	1912-24-9	ND	10	ug/l	---				
Benzaldehyde	100-52-7	ND	10	ug/l	---				
Benzocycloheptatriene - TIC	264-09-5								
Benzo[b]triphenylene - TIC	215-58-7								
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---				
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---				
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---				
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---				
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---				
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---				
Caprolactam	105-60-2	ND	10	ug/l	---				
Carbazole	86-74-8	ND	10	ug/l	---				
Chrysene	218-01-9	ND	2.0	ug/l	---				
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---				
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---				
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---				
Dibenzofuran	132-64-9	ND	10	ug/l	---				
Diethyl phthalate	84-66-2	ND	10	ug/l	---				
Diethylene glycol monododecyl ether - TIC	3055-93-4	16	---	ug/l	NJ				
Dimethyl phthalate	131-11-3	ND	10	ug/l	---				
Diphenyl	92-52-4	ND	10	ug/l	---				
Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5	20	---	ug/l	NJ				
Ethanol, 2-[2-(2-butoxyethoxy)ethoxy]- - TIC	143-22-6	8.2	---	ug/l	NJ				
Fluoranthene	206-44-0	ND	2.0	ug/l	---				
Fluorene	86-73-7	ND	2.0	ug/l	---				
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---				
Hexachloroethane	67-72-1	ND	10	ug/l	---				
Hexadecane - TIC	544-76-3								
Hexagol - TIC	2615-15-8								
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---				
Isophorone	78-59-1	ND	10	ug/l	---				
n-Hexadecanoic acid - TIC	57-10-3	19	---	ug/l	NJ				
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---				
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---				
Naphthalene	91-20-3	ND	2.0	ug/l	---				
Nitrobenzene	98-95-3	ND	10	ug/l	---				
Octadec-9-enoic acid - TIC	1000190-13-7								
Octadecanoic acid - TIC	57-11-4	9.8	---	ug/l	NJ				
Phenanthrene	85-01-8	ND	2.0	ug/l	---				
Phenol	108-95-2	ND	10	ug/l	---				
Phenol, 4-(1,1,3,3-tetramethylbutyl)- - TIC	140-66-9	18	---	ug/l	NJ				
Pyrene	129-00-0	ND	2.0	ug/l	---				
Tetradecane - TIC	629-59-4								
Tetradecanoic acid - TIC	544-63-8								
Tridecanoic acid - TIC	638-53-9								
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0								

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	RW-12(130-140)-081215				TB-06-081315			
		Lab Sample ID:	490851537				490851538			
		Sample Date:	8/12/2015				8/13/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim										
	Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---				
	Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---				
	Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---				
	Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---				
	Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---				
	N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---				
	Pentachlorophenol	87-86-5	ND	0.30	ug/l	---				
GC Other										
OSW-8082A										
	PCB-1016	12674-11-2	ND	0.50	ug/l	---				
	PCB-1221	11104-28-2	ND	0.50	ug/l	---				
	PCB-1232	11141-16-5	ND	0.50	ug/l	---				
	PCB-1242	53469-21-9	ND	0.50	ug/l	---				
	PCB-1248	12672-29-6	ND	0.50	ug/l	---				
	PCB-1254	11097-69-1	ND	0.50	ug/l	---				
	PCB-1260	11096-82-5	ND	0.50	ug/l	---				
	Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---				
Metals										
OSW-6020A										
	Aluminum	7429-90-5	0.90	0.020	mg/l	---				
	Aluminum - Dissolved	7429-90-5	0.30	0.020	mg/l	---				
	Antimony	7440-36-0	ND	0.0020	mg/l	---				
	Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---				
	Arsenic	7440-38-2	0.013	0.0020	mg/l	---				
	Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---				
	Barium	7440-39-3	0.015	0.0020	mg/l	---				
	Barium - Dissolved	7440-39-3	0.0089	0.0020	mg/l	---				
	Beryllium	7440-41-7	ND	0.0020	mg/l	---				
	Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---				
	Cadmium	7440-43-9	ND	0.0010	mg/l	---				
	Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---				
	Calcium	7440-70-2	44.7	1.0	mg/l	---				
	Calcium - Dissolved	7440-70-2	14.2	1.0	mg/l	---				
	Chromium	7440-47-3	ND	0.0020	mg/l	---				
	Chromium - Dissolved	7440-47-3	0.00054	0.0020	mg/l	J				
	Cobalt	7440-48-4	ND	0.0020	mg/l	---				
	Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---				
	Copper	7440-50-8	ND	0.0020	mg/l	---				
	Copper - Dissolved	7440-50-8	0.00074	0.0020	mg/l	J				
	Iron	7439-89-6	0.11	0.025	mg/l	---				
	Iron - Dissolved	7439-89-6	0.32	0.025	mg/l	---				
	Lead	7439-92-1	ND	0.0020	mg/l	---				
	Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---				
	Magnesium	7439-95-4	0.14	1.0	mg/l	J				
	Magnesium - Dissolved	7439-95-4	4.0	1.0	mg/l	---				
	Manganese	7439-96-5	0.0027	0.0020	mg/l	B				
	Manganese - Dissolved	7439-96-5	0.0067	0.0020	mg/l	---				
	Nickel	7440-02-0	0.0024	0.0020	mg/l	---				
	Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---				
	Potassium	7440-09-7	10.4	1.0	mg/l	---				
	Potassium - Dissolved	7440-09-7	1.3	1.0	mg/l	---				
	Selenium	7782-49-2	0.0038	0.0020	mg/l	---				
	Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---				
	Silver	7440-22-4	ND	0.0020	mg/l	---				
	Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---				
	Sodium	7440-23-5	98.8	10.0	mg/l	---				
	Sodium - Dissolved	7440-23-5	3.9	1.0	mg/l	---				
	Thallium	7440-28-0	ND	0.0020	mg/l	---				
	Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---				
	Vanadium	7440-62-2	0.015	0.0020	mg/l	---				
	Vanadium - Dissolved	7440-62-2	0.0022	0.0020	mg/l	B				
	Zinc	7440-66-6	ND	0.025	mg/l	---				
	Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---				
OSW-7470A										
	Mercury	7439-97-6	ND	0.00020	mg/l	---				
	Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---				
General Chemistry										
OSW-9012B										
	Cyanide, Total	57-12-5	ND	0.010	mg/l	---				
OSW-9056A										
	Chloride	16887-00-6	21.5	1.00	mg/l	---				
	Sulfate	14808-79-8	145	1.00	mg/l	---				
Prep										
APHA-2320B										
	Bicarbonate Alkalinity as CaCO3	E-14508	ND	10.0	mg/l	---				
	Total Alkalinity as CaCO3	E-14506	159	10.0	mg/l	---				

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85153-1

		Sample Name:	PM AirShaft-50-081215				OB-25-081215				OB-2-081215				SC-2-081215				RW-13(150-170)-081215				OB-29-081215				RW-12(130-140)-081215			
		Lab Sample ID:	490851531				490851532				490851533				490851534				490851535				490851536				490851537			
		Sample Date:	8/12/2015				8/12/2015				8/12/2015				8/12/2015				8/12/2015				8/12/2015				8/12/2015			
Analyte	**Cas No.**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																														
OSW-8260C																														
1-Hexanol, 2-ethyl- - TIC	104-76-7																										3.1	---	ug/l	NJ
3-Hydroxymandelic acid, ethyl ester, di- - TIC	1000071-88-9																										5.4	---	ug/l	NJ
Methylene Chloride	75-09-2										0.22	5.0	ug/l	UB	0.23	5.0	ug/l	UB	0.34	5.0	ug/l	UB	0.28	5.0	ug/l	UB	0.22	5.0	ug/l	UB
Silanol, dimethyl(1,1,2-trimethylpropyl) - TIC	55644-10-5						3.2	---	ug/l	NJ																				
Unknown - TIC	Tic2																										5.2	---	ug/l	NJ
GC/MS SVOC																														
OSW-8270D																														
1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8																										14	---	ug/l	NJ
15-Crown-5 - TIC	33100-27-5														62	---	ug/l	NJ												
4-Methoxybenzhydrazide - TIC	3290-99-1														5.6	---	ug/l	NJ												
Benzocycloheptatriene - TIC	264-09-5														3.6	---	ug/l	NJ												
Benzo[b]triphenylene - TIC	215-58-7														25	---	ug/l	NJ												
Benzo[g,h,i]perylene	191-24-2														0.81	2.0	ug/l	UB												
Diethylene glycol monododecyl ether - TIC	3055-93-4																										16	---	ug/l	NJ
Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5																										20	---	ug/l	NJ
Ethanol, 2-[2-(2-butoxyethoxy)ethoxy]- - TIC	143-22-6																										8.2	---	ug/l	NJ
Hexadecane - TIC	544-76-3		4.0	---	ug/l	NJ																								
Hexagol - TIC	2615-15-8										16	---	ug/l	NJ																
n-Hexadecanoic acid - TIC	57-10-3										6.8	---	ug/l	NJ	4.8	---	ug/l	NJ									19	---	ug/l	NJ
Octadec-9-enoic acid - TIC	1000190-13-7														4.6	---	ug/l	NJ												
Octadecanoic acid - TIC	57-11-4										5.5	---	ug/l	NJ	4.3	---	ug/l	NJ									9.8	---	ug/l	NJ
Phenol, 4-(1,1,3,3-tetramethylbutyl)- - TIC	140-66-9																										18	---	ug/l	NJ
Tetradecane - TIC	629-59-4						4.8	---	ug/l	NJ																				
Tetradecanoic acid - TIC	544-63-8		3.7	---	ug/l	NJ																								
Tridecanoic acid - TIC	638-53-9						3.6	---	ug/l	NJ																				
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0														8.5	---	ug/l	NJ												
Metals																														
OSW-6020A																														
Aluminum	7429-90-5		0.050	0.020	mg/l	B					0.046	0.020	mg/l	B																
Antimony	7440-36-0		0.00061	0.0020	mg/l	UB	0.00083	0.0020	mg/l	UB					0.00077	0.0020	mg/l	UB												
Arsenic	7440-38-2		0.0013	0.0020	mg/l	UB					0.0012	0.0020	mg/l	UB	0.0021	0.0020	mg/l	B					0.0015	0.0020	mg/l	UB				
Manganese	7439-96-5																										0.0027	0.0020	mg/l	B
Vanadium	7440-62-2		0.0016	0.0020	mg/l	UB					0.0015	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B	0.0028	0.0020	mg/l	B				
Vanadium - Dissolved	7440-62-2		0.0017	0.0020	mg/l	UB	0.0050	0.0020	mg/l	B	0.0018	0.0020	mg/l	UB	0.0016	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B	0.015	0.0020	mg/l	B	0.0022	0.0020	mg/l	B

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENT

Loc: 490
85153
09/17/2015

Client Information	Sampler: Robert Lowfenberg	Lab PM: Brown, Shali	Carrier Tracking No(s):
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com	COC No: 490-41539-14078.2
Company: Cornerstone Environmental Group, LLC/ FORD			Page:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:		Job #:
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package		
State, Zip: NY, 10941			
Phone: 845-695-0252(Tel)	PO #:		
Email: tim.roeper@cornerstoneeg.com	WO #:		
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2SO3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filter)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
PMAirShaft-50-081215	8/12/15	10:05	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					-1
OB-25-081215	8/12/15	09:50	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					2
OB-2-081215	8/12/15	12:55	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					3
SC-2-081215	8/12/15	14:25	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					4
RW-13(150-170)-081215	8/12/15	11:10	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					5
OB-29-081215	8/12/15	15:30	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					6
RW-12(130-140)-081215	8/12/15	14:50	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					7
TB-06-081315	8/13/15	—	—	Water	N	N	✓	✓													8
				Water																	
				Water																	
				Water																	

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by:	Date/Time: 8/13/15 830	Company: TA	Received by: James Thorson	Date/Time: 8/13/15 830	Company: TA
Relinquished by: James Thorson	Date/Time: 8/13/15 1225	Company: TA	Received by:	Date/Time: 8-14-15 @ 0955	Company: TAN
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 21/20/0.4/4		

E-Mail Date: 2015-10-14
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-85229-1

PREPARED BY:
CADENA, INC.
1099 Highland Drive
Ann Arbor, MI 48108
Telephone: 517-819-0356
Fax: 734-975-6709
Contact: Jim Tomalia (jtomalia@cadenaco.com)
Date: 2015-10-14
www.CADENACO.com

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ATTACHMENT A CHAIN OF CUSTODY DOCUMENT(S)

1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-85229-1	8/13-14/2015	8/15/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM
GCMS VOC CCVIS 490-276265/2 responses were outliers biased low for target analytes bromomethane. Client samples (all) bromomethane results should be considered to be estimated and qualified with UJ flags. Remaining CCV outliers were either for non-target analytes or were high bias outliers associated with non-detect sample results.
GCMS SVOC and SIM
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
PCB
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
METALS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
INORGANICS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:
GCMS VOC
CCV outliers were not associated with target analytes for this submittal.
GCMS VOC-SIM
No additional non-conforming observations to report.
GCMS SVOC
Sample-001 was received at a pH of 12 (recommended preservation pH is 7). Sample was adjusted to pH 2 prior to initial prep so qualification based on initial sample pH was not required.
GCMS SVOC-SIM
Sample-001 was received at a pH of 11 (recommended preservation pH is 7). Sample was adjusted to pH 2 prior to initial prep so qualification based on initial sample pH was not required.
METALS
Total metals PDS performed on sample -012 had outliers biased low for barium, calcium, magnesium, potassium, sodium and zinc with zinc, sodium and calcium results subject to 4X rule so were not used for qualification. Qualification of client sample results were assigned based on MS/MSD recovery data for sample -012 so no further qualification was required based on these PDS recovery outliers. Dissolved PDS sample -012 outliers were subject to 4X rule so were not used for qualification.
CRQL's were consistently within lab control limits with the exception of potassium which was consistently biased high.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not affect sample quantitation.

RAW DATA NOT INCLUDED IN ORIGINAL LAB LEVEL 4 DATA PACKAGE:
Metals – raw instrument data from 9/2 for samples 85229-1, -2, -3, -4, -5 and -7 was not included for total potassium, sodium, calcium, copper, manganese and nickel. (Received 2015-10-27).

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank was non-detect for all target analytes.

GCMS VOC QC batch 276265 method blank had a detection below the RL for toluene. Client sample -001 toluene results should be considered to be non-detect at the RL and qualified with a UB flag.

GCMS-SIM SVOC surrogate recoveries were outliers biased high for 2 out of 3 surrogates in client sample -012. Qualification of client sample results was not required based on these high bias QC outliers.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

PCB QC batch 277885 did not include MS recovery data due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

(See Validation Summary above for observations associated with this verification comment) Laboratory case narrative indicated that sample preservation for client sample -001 was outside of method criteria biased high (pH was 11). The lab submittal did not indicate which method was referenced for this potential sample preservation outlier so qualification was not applied based on the case narrative comment alone. This potential preservation outlier will be evaluated further as part of the pending level 4 data package validation review.

GCMS SVOC QC batch 274736 LCS recoveries were outliers biased high for bis-2-chloroethylether. Qualification of client sample results was not required based on this high bias QC outlier.

GCMS SVOC surrogate recoveries were outliers biased high for 1 out of 3 acid fraction surrogates in client samples -001 and -007. Qualification of client sample results was not required based on these high bias QC outliers alone.

GCMS SVOC MS/MSD recovery data for client sample -012 was not reported in laboratory submittal QC summary other than the associated surrogate recovery results. These recoveries will be evaluated further as part of the level 4 data package review. (note: validation review showed no recovery outliers for the sample -012 MS/MSD QC sample)

Metals method blanks had detections below the RL in QC batch 274876 for manganese and vanadium and in QC batch 275634 for arsenic and vanadium. Client samples -010 and -011 total arsenic results and client samples -001 total manganese results and client samples -001, -011, -012 total vanadium results and client samples -003, -004, -005, -006, -007, -010, -011, -012, -008 dissolved vanadium results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -008 and -012 total arsenic results and client samples -002, -003, -004, -005, -006, -007, -008 total vanadium results and client samples -002 dissolved vanadium results should be considered to be non-detect at the concentration reported and qualified

with B flags.

Metals QC batch 274876 and Cyanide QC batch 275318 and Chloride QC batch 276233 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Metals sample -012 MS/MSD recoveries were not considered to be statistically reliable due to elevated levels of target analyte in the original sample matrix relative to the amount spiked (4X rule) so were not used to qualify results for total and dissolved calcium, iron, manganese, sodium and zinc. MSD recovery only was an outlier for dissolved selenium so qualification was not required based on this QC outlier alone.

Cyanide client sample -012 and -001 MS/MSD recoveries were outliers biased low. Client samples -001 and -012 cyanide results should be considered to be estimated and qualified with UJ flags if non-detect and J flags if detected.

Chloride client sample -012 MS/MSD recoveries were outliers biased low. Client sample -012 chloride results should be considered to be estimated and qualified with a J flag.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD’s were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6ºC after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 85229-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	Mercury (Manual Cold Vapor)(D)	Mercury (Manual Cold Vapor)	TOTAL AND AMENABLE CYANIDE (AUTOMATED COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Inorganic Anions by IC	Alkalinity Prep
490852291	RW-13 (100-120)- 081315	8/13/2015	9:15:00	X	X	X	X	X	X	X	X	X	X	X	X
4908522910	OB-10-081415	8/14/2015	10:20:00	X	X	X	X	X	X	X	X	X	X	X	X
4908522911	DUP-03-081415	8/14/2015	12:00:00	X	X	X	X	X	X	X	X	X	X	X	X
4908522912	CM-50-081415	8/14/2015	10:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490852292	OB-24-081315	8/13/2015	9:50:00	X	X	X	X	X	X	X	X	X	X	X	X
490852293	OB-14A-081315	8/13/2015	10:55:00	X	X	X	X	X	X	X	X	X	X	X	X
490852294	OB-14B-081315	8/13/2015	10:20:00	X	X	X	X	X	X	X	X	X	X	X	X
490852295	OB-16-081315	8/13/2015	3:45:00	X	X	X	X	X	X	X	X	X	X	X	X
490852296	OB-18-081315	8/13/2015	2:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490852297	OB-28-081315	8/13/2015	3:15:00	X	X	X	X	X	X	X	X	X	X	X	X
490852298	OB-17-081315	8/13/2015	2:05:00	X	X	X	X	X	X	X	X	X	X	X	X
490852299	TB-07-081415	8/14/2015	1:00:00	X	X										

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85229-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

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FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85229-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

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FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
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Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

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LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85229-1
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Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	RW-13 (100-120)- 081315				OB-10-081415				DUP-03-081415			
		Lab Sample ID:	490852291				4908522910				4908522911			
		Sample Date:	8/13/2015				8/14/2015				8/14/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Hexanol, 2-ethyl- - TIC	104-76-7	6.7	---	ug/l	NJ								
2-Butanone (MEK)	78-93-3	3.2	50	ug/l	J	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	41	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	0.14	5.0	ug/l	J	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	0.65	1.0	ug/l	UB	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	RW-13 (100-120)- 081315				OB-10-081415				DUP-03-081415			
		Lab Sample ID:	490852291				4908522910				4908522911			
		Sample Date:	8/13/2015				8/14/2015				8/14/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8	26	---	ug/l	NJ								
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-HYDRAZINO-2-IMIDAZOLINE - TIC	1000239-54-7	43	---	ug/l	NJ								
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3	21	---	ug/l	NJ								
Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Allyldimethylphenylsilane - TIC	18001-18-8	10	---	ug/l	NJ								
Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Benzyl Alcohol - TIC	100-51-6	14	---	ug/l	NJ								
Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethy - TIC	2437-95-8					29	---	ug/l	NJ				
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7												
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Dodecanoic acid - TIC	143-07-7	10	---	ug/l	NJ								
Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5	96	---	ug/l	NJ								
Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Furan, tetrahydro-2,5-dipropyl- - TIC	4457-62-9	9.5	---	ug/l	NJ								
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
n-Hexadecanoic acid - TIC	57-10-3	85	---	ug/l	NJ								
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Octadecanoic acid - TIC	57-11-4	100	---	ug/l	NJ								
Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Phenol	108-95-2	6.6	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
Phenol, 4-(1,1-dimethylpropyl)- - TIC	80-46-6	12	---	ug/l	NJ								
Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
Pyridine, 3-butyl-, 1-oxide - TIC	31396-33-5												
Triethylene glycol monododecyl ether - TIC	3055-94-5	8.3	---	ug/l	NJ								

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	RW-13 (100-120)- 081315				OB-10-081415				DUP-03-081415			
		Lab Sample ID:	490852291				4908522910				4908522911			
		Sample Date:	8/13/2015				8/14/2015				8/14/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	5.6	0.020	mg/l	---	ND	0.020	mg/l	---	ND	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	4.8	0.020	mg/l	---	ND	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.00063	0.0020	mg/l	J	0.00051	0.0020	mg/l	J	ND	0.0020	mg/l	---
Arsenic	7440-38-2	0.0032	0.0020	mg/l	---	0.0013	0.0020	mg/l	UB	0.0013	0.0020	mg/l	UB
Arsenic - Dissolved	7440-38-2	0.0021	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.024	0.0020	mg/l	---	0.0068	0.0020	mg/l	---	0.0069	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.021	0.0020	mg/l	---	0.0065	0.0020	mg/l	---	0.0062	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	24.9	1.0	mg/l	---	13.4	1.0	mg/l	---	13.9	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	26.2	1.0	mg/l	---	14.0	1.0	mg/l	---	13.7	1.0	mg/l	---
Chromium	7440-47-3	0.055	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	0.050	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	0.019	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	0.013	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Iron	7439-89-6	0.38	0.025	mg/l	---	0.25	0.025	mg/l	---	0.29	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.31	0.025	mg/l	---	0.013	0.025	mg/l	J	ND	0.025	mg/l	---
Lead	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	ND	1.0	mg/l	---	3.8	1.0	mg/l	---	4.0	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	ND	1.0	mg/l	---	4.1	1.0	mg/l	---	4.1	1.0	mg/l	---
Manganese	7439-96-5	0.00060	0.0020	mg/l	UB	0.029	0.0020	mg/l	---	0.033	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	ND	0.0020	mg/l	---	0.00078	0.0020	mg/l	J	0.00064	0.0020	mg/l	J
Nickel	7440-02-0	0.0028	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0013	0.0020	mg/l	J
Nickel - Dissolved	7440-02-0	0.0016	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Potassium	7440-09-7	232	10.0	mg/l	---	1.2	1.0	mg/l	---	1.3	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	209	20.0	mg/l	---	1.2	1.0	mg/l	---	1.2	1.0	mg/l	---
Selenium	7782-49-2	0.012	0.0020	mg/l	---	0.00080	0.0020	mg/l	J	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	0.011	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	246	10.0	mg/l	---	3.1	1.0	mg/l	---	3.3	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	210	20.0	mg/l	---	3.4	1.0	mg/l	---	3.3	1.0	mg/l	---
Thallium	7440-28-0	0.00090	0.0020	mg/l	J	0.00024	0.0020	mg/l	J	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	0.00089	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.039	0.0020	mg/l	---	0.0010	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.035	0.0020	mg/l	---	0.0016	0.0020	mg/l	UB	0.0016	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	UJ	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	25.9	5.00	mg/l	---	3.43	1.00	mg/l	---	3.39	1.00	mg/l	---
Sulfate	14808-79-8	50.7	5.00	mg/l	---	5.88	1.00	mg/l	---	5.85	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	ND	10.0	mg/l	---	43.9	10.0	mg/l	---	43.6	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	547	10.0	mg/l	---	43.9	10.0	mg/l	---	43.6	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	CM-50-081415				OB-24-081315				OB-14A-081315			
		Lab Sample ID:	4908522912				490852292				490852293			
		Sample Date:	8/14/2015				8/13/2015				8/13/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Hexanol, 2-ethyl- - TIC	104-76-7												
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	0.41	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	CM-50-081415				OB-24-081315				OB-14A-081315			
		Lab Sample ID:	4908522912				490852292				490852293			
		Sample Date:	8/14/2015				8/13/2015				8/13/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8												
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-HYDRAZINO-2-IMIDAZOLINE - TIC	1000239-54-7												
	2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
	Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Allyldimethylphenylsilane - TIC	18001-18-8												
	Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Benzyl Alcohol - TIC	100-51-6												
	Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethy - TIC	2437-95-8												
	Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7									16	---	ug/l	NJ
	Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dodecanoic acid - TIC	143-07-7												
	Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5												
	Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Furan, tetrahydro-2,5-dipropyl- - TIC	4457-62-9												
	Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	n-Hexadecanoic acid - TIC	57-10-3												
	N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Octadecanoic acid - TIC	57-11-4												
	Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Phenol, 4-(1,1-dimethylpropyl)- - TIC	80-46-6												
	Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Pyridine, 3-butyl-, 1-oxide - TIC	31396-33-5												
	Triethylene glycol monododecyl ether - TIC	3055-94-5												

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	CM-50-081415				OB-24-081315				OB-14A-081315			
		Lab Sample ID:	4908522912				490852292				490852293			
		Sample Date:	8/14/2015				8/13/2015				8/13/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	ND	0.020	mg/l	---	0.060	0.020	mg/l	---	0.025	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	0.010	0.020	mg/l	J	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00061	0.0020	mg/l	J
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00074	0.0020	mg/l	J
Arsenic	7440-38-2	0.0023	0.0020	mg/l	B	0.0018	0.0020	mg/l	J	0.0092	0.0020	mg/l	---
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	0.00064	0.0020	mg/l	J	0.0012	0.0020	mg/l	J
Barium	7440-39-3	0.12	0.0020	mg/l	---	0.048	0.0020	mg/l	---	0.46	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.083	0.0020	mg/l	---	0.032	0.0020	mg/l	---	0.31	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	81.3	1.0	mg/l	---	99.2	1.0	mg/l	---	146	10.0	mg/l	---
Calcium - Dissolved	7440-70-2	83.7	1.0	mg/l	---	99.2	1.0	mg/l	---	115	20.0	mg/l	---
Chromium	7440-47-3	0.0021	0.0020	mg/l	---	0.00092	0.0020	mg/l	J	0.00077	0.0020	mg/l	J
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0012	0.0020	mg/l	J
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00088	0.0020	mg/l	J
Copper	7440-50-8	0.0015	0.0020	mg/l	J	0.0011	0.0020	mg/l	J	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Iron	7439-89-6	20.0	0.025	mg/l	---	0.17	0.025	mg/l	---	59.3	0.025	mg/l	---
Iron - Dissolved	7439-89-6	5.1	0.025	mg/l	---	0.014	0.025	mg/l	J	27.3	0.025	mg/l	---
Lead	7439-92-1	0.00039	0.0020	mg/l	J	0.00024	0.0020	mg/l	J	0.00086	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	22.7	1.0	mg/l	---	23.8	1.0	mg/l	---	10.9	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	24.0	1.0	mg/l	---	24.6	1.0	mg/l	---	10.2	1.0	mg/l	---
Manganese	7439-96-5	1.2	0.0020	mg/l	---	1.3	0.0020	mg/l	---	1.5	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	1.4	0.040	mg/l	---	0.022	0.0020	mg/l	---	1.8	0.040	mg/l	---
Nickel	7440-02-0	0.0052	0.0020	mg/l	---	0.0015	0.0020	mg/l	J	0.0026	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.0013	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.0013	0.0020	mg/l	J
Potassium	7440-09-7	4.5	1.0	mg/l	---	2.4	1.0	mg/l	---	5.8	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	4.6	1.0	mg/l	---	2.1	1.0	mg/l	---	5.1	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	85.7	1.0	mg/l	---	16.2	1.0	mg/l	---	18.4	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	90.4	1.0	mg/l	---	18.0	1.0	mg/l	---	17.5	1.0	mg/l	---
Thallium	7440-28-0	0.00051	0.0020	mg/l	J	0.00044	0.0020	mg/l	J	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	0.00060	0.0020	mg/l	J	0.00031	0.0020	mg/l	J	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0010	0.0020	mg/l	UB	0.0035	0.0020	mg/l	B	0.0040	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.0017	0.0020	mg/l	UB	0.0022	0.0020	mg/l	B	0.0017	0.0020	mg/l	UB
Zinc	7440-66-6	0.96	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	0.48	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	UJ	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	191	1.00	mg/l	J	86.8	1.00	mg/l	---	20.6	1.00	mg/l	---
Sulfate	14808-79-8	3.36	1.00	mg/l	---	27.3	1.00	mg/l	---	ND	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	229	10.0	mg/l	---	218	10.0	mg/l	---	377	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	229	10.0	mg/l	---	218	10.0	mg/l	---	377	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	OB-14B-081315				OB-16-081315				OB-18-081315			
		Lab Sample ID:	490852294				490852295				490852296			
		Sample Date:	8/13/2015				8/13/2015				8/13/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Hexanol, 2-ethyl- - TIC	104-76-7												
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	OB-14B-081315				OB-16-081315				OB-18-081315			
		Lab Sample ID:	490852294				490852295				490852296			
		Sample Date:	8/13/2015				8/13/2015				8/13/2015			
Analyte		**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8												
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-HYDRAZINO-2-IMIDAZOLINE - TIC	1000239-54-7												
	2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
	Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Allyldimethylphenylsilane - TIC	18001-18-8												
	Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Benzyl Alcohol - TIC	100-51-6												
	Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethy - TIC	2437-95-8												
	Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7												
	Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dodecanoic acid - TIC	143-07-7												
	Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5												
	Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Furan, tetrahydro-2,5-dipropyl- - TIC	4457-62-9												
	Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	n-Hexadecanoic acid - TIC	57-10-3												
	N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Octadecanoic acid - TIC	57-11-4												
	Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Phenol, 4-(1,1-dimethylpropyl)- - TIC	80-46-6												
	Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Pyridine, 3-butyl-, 1-oxide - TIC	31396-33-5					13	---	ug/l	NJ				
	Triethylene glycol monododecyl ether - TIC	3055-94-5												

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	OB-14B-081315				OB-16-081315				OB-18-081315			
		Lab Sample ID:	490852294				490852295				490852296			
		Sample Date:	8/13/2015				8/13/2015				8/13/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	0.27	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	0.017	0.020	mg/l	J
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic	7440-38-2	0.0025	0.0020	mg/l	---	0.012	0.0020	mg/l	---	0.0014	0.0020	mg/l	J
Arsenic - Dissolved	7440-38-2	0.0011	0.0020	mg/l	J	0.0023	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.041	0.0020	mg/l	---	0.10	0.0020	mg/l	---	0.010	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.041	0.0020	mg/l	---	0.069	0.0020	mg/l	---	0.0089	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	125	10.0	mg/l	---	170	10.0	mg/l	---	54.7	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	100	1.0	mg/l	---	142	20.0	mg/l	---	53.6	1.0	mg/l	---
Chromium	7440-47-3	0.00055	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.0012	0.0020	mg/l	J
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00067	0.0020	mg/l	J
Cobalt	7440-48-4	ND	0.0020	mg/l	---	0.0019	0.0020	mg/l	J	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	0.0018	0.0020	mg/l	J	ND	0.0020	mg/l	---
Copper	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Iron	7439-89-6	0.93	0.025	mg/l	---	20.1	0.025	mg/l	---	0.36	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.050	0.025	mg/l	---	2.9	0.025	mg/l	---	0.018	0.025	mg/l	J
Lead	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	28.8	1.0	mg/l	---	18.2	1.0	mg/l	---	10.8	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	29.9	1.0	mg/l	---	18.0	1.0	mg/l	---	11.0	1.0	mg/l	---
Manganese	7439-96-5	1.6	0.0020	mg/l	---	4.9	0.020	mg/l	---	0.013	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	3.3	0.040	mg/l	---	4.0	0.040	mg/l	---	0.00075	0.0020	mg/l	J
Nickel	7440-02-0	0.0019	0.0020	mg/l	J	0.0015	0.0020	mg/l	J	0.0014	0.0020	mg/l	J
Nickel - Dissolved	7440-02-0	0.0012	0.0020	mg/l	J	0.00070	0.0020	mg/l	J	ND	0.0020	mg/l	---
Potassium	7440-09-7	3.1	1.0	mg/l	---	10.6	1.0	mg/l	---	0.53	1.0	mg/l	J
Potassium - Dissolved	7440-09-7	2.9	1.0	mg/l	---	10.5	1.0	mg/l	---	0.39	1.0	mg/l	J
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	18.4	1.0	mg/l	---	34.2	1.0	mg/l	---	6.2	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	19.4	1.0	mg/l	---	34.4	1.0	mg/l	---	6.4	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0024	0.0020	mg/l	B	0.0025	0.0020	mg/l	B	0.0026	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.0016	0.0020	mg/l	UB	0.0016	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	0.011	0.025	mg/l	J	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	45.1	1.00	mg/l	---	56.6	1.00	mg/l	---	1.22	1.00	mg/l	---
Sulfate	14808-79-8	13.4	1.00	mg/l	---	3.37	1.00	mg/l	---	11.6	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	311	10.0	mg/l	---	401	10.0	mg/l	---	163	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	311	10.0	mg/l	---	401	10.0	mg/l	---	163	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	OB-28-081315				OB-17-081315				TB-07-081415			
		Lab Sample ID:	490852297				490852298				490852299			
		Sample Date:	8/13/2015				8/13/2015				8/14/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	0.78	1.0	ug/l	J	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Hexanol, 2-ethyl- - TIC	104-76-7												
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	17	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

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Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	OB-28-081315				OB-17-081315				TB-07-081415			
		Lab Sample ID:	490852297				490852298				490852299			
		Sample Date:	8/13/2015				8/13/2015				8/14/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---				
1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8												
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---				
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---				
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---				
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---				
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---				
2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---				
2-HYDRAZINO-2-IMIDAZOLINE - TIC	1000239-54-7												
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---				
2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---				
2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---				
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---				
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---				
3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---				
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---				
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---				
4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---				
4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---				
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---				
Allyldimethylphenylsilane - TIC	18001-18-8												
Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---				
Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---				
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Benzyl Alcohol - TIC	100-51-6												
Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethy - TIC	2437-95-8												
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---				
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---				
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---				
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---				
Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---				
Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---				
Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7												
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---				
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---				
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---				
Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---				
Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---				
Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---				
Dodecanoic acid - TIC	143-07-7												
Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5												
Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Furan, tetrahydro-2,5-dipropyl- - TIC	4457-62-9												
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---				
Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---				
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---				
n-Hexadecanoic acid - TIC	57-10-3												
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---				
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---				
Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---				
Octadecanoic acid - TIC	57-11-4												
Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---				
Phenol, 4-(1,1-dimethylpropyl)- - TIC	80-46-6												
Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Pyridine, 3-butyl-, 1-oxide - TIC	31396-33-5												
Triethylene glycol monododecyl ether - TIC	3055-94-5												

Analytical Results Summary

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		Sample Name:	OB-28-081315				OB-17-081315				TB-07-081415			
		Lab Sample ID:	490852297				490852298				490852299			
		Sample Date:	8/13/2015				8/13/2015				8/14/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---				
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---				
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---				
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---				
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Metals													
OSW-6020A													
Aluminum	7429-90-5	1.4	0.020	mg/l	---	0.051	0.020	mg/l	---				
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---				
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Arsenic	7440-38-2	0.0015	0.0020	mg/l	J	0.0050	0.0020	mg/l	B				
Arsenic - Dissolved	7440-38-2	0.00082	0.0020	mg/l	J	0.00058	0.0020	mg/l	J				
Barium	7440-39-3	0.084	0.0020	mg/l	---	0.016	0.0020	mg/l	---				
Barium - Dissolved	7440-39-3	0.073	0.0020	mg/l	---	0.013	0.0020	mg/l	---				
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Calcium	7440-70-2	141	10.0	mg/l	---	110	10.0	mg/l	---				
Calcium - Dissolved	7440-70-2	103	20.0	mg/l	---	99.3	1.0	mg/l	---				
Chromium	7440-47-3	0.0024	0.0020	mg/l	---	0.00073	0.0020	mg/l	J				
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cobalt	7440-48-4	0.0028	0.0020	mg/l	---	0.0010	0.0020	mg/l	J				
Cobalt - Dissolved	7440-48-4	0.0015	0.0020	mg/l	J	0.00088	0.0020	mg/l	J				
Copper	7440-50-8	0.0060	0.0020	mg/l	---	0.0011	0.0020	mg/l	J				
Copper - Dissolved	7440-50-8	0.0016	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Iron	7439-89-6	2.7	0.025	mg/l	---	6.1	0.025	mg/l	---				
Iron - Dissolved	7439-89-6	ND	0.025	mg/l	---	0.11	0.025	mg/l	---				
Lead	7439-92-1	0.0010	0.0020	mg/l	J	0.00036	0.0020	mg/l	J				
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Magnesium	7439-95-4	31.6	1.0	mg/l	---	31.0	1.0	mg/l	---				
Magnesium - Dissolved	7439-95-4	29.5	1.0	mg/l	---	31.6	1.0	mg/l	---				
Manganese	7439-96-5	4.4	0.020	mg/l	---	0.53	0.0020	mg/l	---				
Manganese - Dissolved	7439-96-5	0.54	0.040	mg/l	---	0.55	0.0020	mg/l	---				
Nickel	7440-02-0	0.0027	0.0020	mg/l	---	0.0014	0.0020	mg/l	J				
Nickel - Dissolved	7440-02-0	0.0016	0.0020	mg/l	J	0.00063	0.0020	mg/l	J				
Potassium	7440-09-7	4.6	1.0	mg/l	---	0.91	1.0	mg/l	J				
Potassium - Dissolved	7440-09-7	4.0	1.0	mg/l	---	0.81	1.0	mg/l	J				
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Sodium	7440-23-5	24.4	1.0	mg/l	---	14.8	1.0	mg/l	---				
Sodium - Dissolved	7440-23-5	24.2	1.0	mg/l	---	14.9	1.0	mg/l	---				
Thallium	7440-28-0	ND	0.0020	mg/l	---	0.00066	0.0020	mg/l	J				
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Vanadium	7440-62-2	0.0055	0.0020	mg/l	B	0.0028	0.0020	mg/l	B				
Vanadium - Dissolved	7440-62-2	0.0017	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB				
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---				
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---				
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---				
OSW-9056A													
Chloride	16887-00-6	89.4	1.00	mg/l	---	8.57	1.00	mg/l	---				
Sulfate	14808-79-8	18.1	1.00	mg/l	---	38.5	1.00	mg/l	---				
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	362	10.0	mg/l	---	328	10.0	mg/l	---				
Total Alkalinity as CaCO3	E-14506	362	10.0	mg/l	---	328	10.0	mg/l	---				

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	RW-13 (100-120)- 081315				OB-10-081415				DUP-03-081415				CM-50-081415				OB-24-081315			
		Lab Sample ID:	490852291				4908522910				4908522911				4908522912				490852292			
		Sample Date:	8/13/2015				8/14/2015				8/14/2015				8/14/2015				8/13/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																					
OSW-8260C																					
1-Hexanol, 2-ethyl- - TIC	104-76-7	6.7	---	ug/l	NJ																
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Toluene	108-88-3	0.65	1.0	ug/l	UB																
GC/MS SVOC																					
OSW-8270D																					
1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8	26	---	ug/l	NJ																
2-HYDRAZINO-2-IMIDAZOLINE - TIC	1000239-54-7	43	---	ug/l	NJ																
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3	21	---	ug/l	NJ																
Allyldimethylphenylsilane - TIC	18001-18-8	10	---	ug/l	NJ																
Benzyl Alcohol - TIC	100-51-6	14	---	ug/l	NJ																
Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethy - TIC	2437-95-8					29	---	ug/l	NJ												
Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7																				
Dodecanoic acid - TIC	143-07-7	10	---	ug/l	NJ																
Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5	96	---	ug/l	NJ																
Furan, tetrahydro-2,5-dipropyl- - TIC	4457-62-9	9.5	---	ug/l	NJ																
n-Hexadecanoic acid - TIC	57-10-3	85	---	ug/l	NJ																
Octadecanoic acid - TIC	57-11-4	100	---	ug/l	NJ																
Phenol, 4-(1,1-dimethylpropyl)- - TIC	80-46-6	12	---	ug/l	NJ																
Pyridine, 3-butyl-, 1-oxide - TIC	31396-33-5																				
Triethylene glycol monododecyl ether - TIC	3055-94-5	8.3	---	ug/l	NJ																
Metals																					
OSW-6020A																					
Arsenic	7440-38-2					0.0013	0.0020	mg/l	UB	0.0013	0.0020	mg/l	UB	0.0023	0.0020	mg/l	B				
Manganese	7439-96-5	0.00060	0.0020	mg/l	UB																
Vanadium	7440-62-2					0.0010	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB	0.0010	0.0020	mg/l	UB	0.0035	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2					0.0016	0.0020	mg/l	UB	0.0016	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB	0.0022	0.0020	mg/l	B
General Chemistry																					
OSW-9012B																					
Cyanide, Total	57-12-5	ND	0.010	mg/l	UJ									ND	0.010	mg/l	UJ				
OSW-9056A																					
Chloride	16887-00-6													191	1.00	mg/l	J				

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	OB-14A-081315				OB-14B-081315				OB-16-081315				OB-18-081315				OB-28-081315			
		Lab Sample ID:	490852293				490852294				490852295				490852296				490852297			
		Sample Date:	8/13/2015				8/13/2015				8/13/2015				8/13/2015				8/13/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																					
OSW-8260C																					
1-Hexanol, 2-ethyl- - TIC	104-76-7																				
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Toluene	108-88-3																				
GC/MS SVOC																					
OSW-8270D																					
1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8																				
2-HYDRAZINO-2-IMIDAZOLINE - TIC	1000239-54-7																				
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3																				
Allyldimethylphenylsilane - TIC	18001-18-8																				
Benzyl Alcohol - TIC	100-51-6																				
Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethy - TIC	2437-95-8																				
Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7	16	---	ug/l	NJ																
Dodecanoic acid - TIC	143-07-7																				
Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5																				
Furan, tetrahydro-2,5-dipropyl- - TIC	4457-62-9																				
n-Hexadecanoic acid - TIC	57-10-3																				
Octadecanoic acid - TIC	57-11-4																				
Phenol, 4-(1,1-dimethylpropyl)- - TIC	80-46-6																				
Pyridine, 3-butyl-, 1-oxide - TIC	31396-33-5									13	---	ug/l	NJ								
Triethylene glycol monododecyl ether - TIC	3055-94-5																				
Metals																					
OSW-6020A																					
Arsenic	7440-38-2																				
Manganese	7439-96-5																				
Vanadium	7440-62-2	0.0040	0.0020	mg/l	B	0.0024	0.0020	mg/l	B	0.0025	0.0020	mg/l	B	0.0026	0.0020	mg/l	B	0.0055	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.0017	0.0020	mg/l	UB	0.0016	0.0020	mg/l	UB	0.0016	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB
General Chemistry																					
OSW-9012B																					
Cyanide, Total	57-12-5																				
OSW-9056A																					
Chloride	16887-00-6																				

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85229-1

		Sample Name:	OB-17-081315				TB-07-081415			
		Lab Sample ID:	490852298				490852299			
		Sample Date:	8/13/2015				8/14/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC									
OSW-8260C									
1-Hexanol, 2-ethyl- - TIC	104-76-7								
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Toluene	108-88-3								
GC/MS SVOC									
OSW-8270D									
1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8								
2-HYDRAZINO-2-IMIDAZOLINE - TIC	1000239-54-7								
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3								
Allyldimethylphenylsilane - TIC	18001-18-8								
Benzyl Alcohol - TIC	100-51-6								
Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethy - TIC	2437-95-8								
Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7								
Dodecanoic acid - TIC	143-07-7								
Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5								
Furan, tetrahydro-2,5-dipropyl- - TIC	4457-62-9								
n-Hexadecanoic acid - TIC	57-10-3								
Octadecanoic acid - TIC	57-11-4								
Phenol, 4-(1,1-dimethylpropyl)- - TIC	80-46-6								
Pyridine, 3-butyl-, 1-oxide - TIC	31396-33-5								
Triethylene glycol monododecyl ether - TIC	3055-94-5								
Metals									
OSW-6020A									
Arsenic	7440-38-2	0.0050	0.0020	mg/l	B				
Manganese	7439-96-5								
Vanadium	7440-62-2	0.0028	0.0020	mg/l	B				
Vanadium - Dissolved	7440-62-2	0.0017	0.0020	mg/l	UB				
General Chemistry									
OSW-9012B									
Cyanide, Total	57-12-5								
OSW-9056A									
Chloride	16887-00-6								

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
85229
#2
N

TestAmerica

09/21/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Can	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page: 1 of 2
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filter)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
				Preservation Code:																		
1	RW-13 (100-120)-081315	8/13/15	09:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
2	OB-24-081315	8/13/15	09:50	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
3	OB-14A-081315	8/13/15	10:55	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
4	OB-14B-081315	8/13/15	10:20	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
5	OB-16-081315	8/13/15	15:45	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
6	OB-18-081315	8/13/15	14:25	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
7	OB-28-081315	8/13/15	15:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
8	OB-17-081315	8/13/15	14:05	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
9	TB-07-081415	8/14/15	—	—	Water	N	N	✓	✓													
10	OB-10-081415	8/14/15	10:20	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
11	DUP-03-081415	8/14/15	12:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 8/14 1440	Company TT
Relinquished by:	Date/Time: 8/14 1715	Company TT	Received by: 3.9/2.8/2.9/4.2 3.7/5.8/5.8/2.6/3.5	Date/Time: 8/15/15 0930	Company TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks.

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
85229
#3
K

TestAmerica

09/21/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Carrier T	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page: 2 of 2
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filter)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
					Preservation Code:																	
12	CM-50-081415 MS/MSD	8/14/15	10:25	G	Water	N	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	
					Water																	

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				8/14 1440	TA
Relinquished by:	Date/Time: 8/14 1715	Company TA	Received by: 3.9/2.8/2.9/4.2 3.7/5.8/5.8/2.6/3.5	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

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ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-85658-1

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1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-85658-1	8/19-20/2015	8/21/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM

GCMS VOC Continuing Calibration Verification standard 278001/3 analyzed on 9/1 had multiple responses outside of laboratory control limits. High bias outliers did not have an effect on client sample data or were not associated with target analytes for this submittal (cis-1,2-dichlroethylene was already qualified as estimated due to being detected below the RL so no further qualification was required based on the CCV outlier). Low bias recoveries were observed for target analyte methyl acetate and TIC analyte isopropylalcohol. The TIC analyte was already qualified as estimated due to being detected below the RL. All client sample methyl acetate results were non-detect so the associated reporting limits should be considered to be estimated and qualified with UJ flags based on the low bias CCV response.

GCMS SVOC and SIM

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

PCB

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

METALS

Metals Continuing Calibration Blank (CCB) CCB-490-275984/109 at 21:16 of 9/24 analytical sequence had a detection for selenium above the MDL but below the RL. Based on this CCB detection client sample 490-85658-3 total selenium result should be considered to be non-detect at the RL and qualified with a UB flag.

INORGANICS

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:

GCMS VOC

CCV outliers were not associated with target analytes for this submittal.

GCMS VOC-SIM

CCV for sequence 276673 on 8/27 had outliers that were not associated with reported sample results. ICV for sequence 277064 on 8/28 were reported on form VII as outliers based on known spike values reported. Verification with laboratory indicated that the known spike values should have been 10 and 0.5 (instead of 2000/100) as was historically reported for other sequences to these ICV recoveries were considered to be acceptable when compared to these historical values.

GCMS SVOC

CCV for sequence 276363 on 8/26 had outliers that were not associated with reported sample results.

GCMS SVOC-SIM

No additional observations to report based on review of level 4 data package.

METALS

QC batch PDS and SERIAL DILUTION outliers were not determined using samples from this submittal so qualification was not required based on these sample-specific QC outliers.
CRQL's were consistently within lab control limits with the exception of potassium which was consistently biased high.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not result in qualification of final client sample results.
RAW DATA NOT INCLUDED IN ORIGINAL LAB LEVEL 4 DATA PACKAGE:
No additional requests for data associated with this submittal were required of the laboratory.

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank had a detection below the RL for acetone. Qualification of client sample results was not required based on this trip blank detection.

GCMS-SIM VOC surrogate recoveries were outliers biased high for 1 out of 4 surrogates in client sample -002re-analysis and -007re-analysis. GCMS-SIM VOC detected results in these samples should be considered to be estimated and qualified with J flags. Non-detect results do not require qualification.

GCMS-SIM VOC QC batch 276673 LCS recovery was an outlier for ethylene dibromide. QC batch 276673 LCS/LCSduplicate recovery outliers were not associated with reportable results so qualification was not required based on these QC outliers.

GCMS-SIM VOC QC batch 277393 and 277754 and GCMS SVOC QC batch 276223 and PCB QC batch 278338 and PAH QC batch 276166 and cyanide batch 276486 did not include MS recovery data due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

GCMS VOC QC batch 278001 LCS recovery was an outlier biased high for cyclohexane. Qualification of client sample results was not required based on this QC outlier alone.

GCMS-SIM SVOC QC batch 276166 LCS/LCSduplicate RPD was an outlier for pentachlorophenol. Qualification of client sample results was not required based on this method blank detection.

GCMS SVOC QC batch 276223 LCSduplicate recovery only was an outlier biased high for benzaldehyde. Qualification of client sample results was not required based on this high bias QC outlier.

Metals method blanks had detections below the RL in QC batch 275634 for arsenic and vanadium and in QC batch 276235 for vanadium. Client samples -001, -002, -003, -004 and -006 dissolved vanadium results and client samples -002 and -005 total vanadium results and client samples -002, -004 and -005 total arsenic results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -001, -003, -004, -006 total vanadium results and client sample -005 dissolved vanadium result and client samples -001, -003 and -006 total arsenic results should be considered to be non-detect at the concentration reported and qualified with B flags.

GCMS VOC QC batch 278001 and Metals QC batch 276235 and 275634 MS recovery outliers were not determined

using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Cyanide client sample -006 MS/MSD recoveries were outliers biased low (MS/MSD RPD also an outlier). Client samples -006 cyanide results should be considered to be estimated and qualified with UJ flags if non-detect and J flags if detected.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.
If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.
CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent

sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6°C after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 85658-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	Mercury (Manual Cold Vapor)(D)	Mercury (Manual Cold Vapor)	TOTAL AND AMENABLE CYANIDE (AUTOMATED COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Inorganic Anions by IC	Alkalinity Prep
490856581	SR-3 Seep 2-081915	8/19/2015	11:15:00	X	X	X	X	X	X	X	X	X	X	X	X
490856582	SR-3 Pond-081915	8/19/2015	11:45:00	X	X	X	X	X	X	X	X	X	X	X	X
490856583	SR-3 Seep 1-081915	8/19/2015	12:10:00	X	X	X	X	X	X	X	X	X	X	X	X
490856584	Dup-04-081915	8/19/2015	12:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490856585	SW-NOB-02-081915	8/19/2015	2:30:00	X	X	X	X	X	X	X	X	X	X	X	X
490856586	SW-PAB-04-081915	8/19/2015	3:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490856587	RW-10 (120-130)-081915	8/19/2015	9:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490856588	TB-10-082015	8/20/2015	12:01:00	X	X										

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85658-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85658-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85658-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85658-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	SR-3 Seep 2-081915				SR-3 Pond-081915				SR-3 Seep 1-081915			
		Lab Sample ID:	490856581				490856582				490856583			
		Sample Date:	8/19/2015				8/19/2015				8/19/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	0.67	1.0	ug/l	J	ND	1.0	ug/l	---	0.33	1.0	ug/l	J
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	1.8	1.0	ug/l	---	ND	1.0	ug/l	---	0.83	1.0	ug/l	J
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	0.26	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropyl alcohol - TIC	67-63-0												
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2												
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSIM													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	1.3	10	ug/l	J	1.6	10	ug/l	J	2.0	10	ug/l	J
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	SR-3 Seep 2-081915				SR-3 Pond-081915				SR-3 Seep 1-081915			
		Lab Sample ID:	490856581				490856582				490856583			
		Sample Date:	8/19/2015				8/19/2015				8/19/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	1H-Pyrrole, 3,5-dimethyl-2-phenyl- - TIC	3274-53-1												
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,6-Dinitrotoluene	606-20-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2-Chlorophenol	95-57-8	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2-Methylnaphthalene	91-57-6	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	2-Methylphenol	95-48-7	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2-Naphthalenecarboxylic acid - TIC	93-09-4												
	2-Nitroaniline	88-74-4	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	2-Nitrophenol	88-75-5	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5												
	3-Nitroaniline	99-09-2	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	4-Chloroaniline	106-47-8	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	4-Nitroaniline	100-01-6	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	4-Nitrophenol	100-02-7	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
	Acenaphthene	83-32-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Acenaphthylene	208-96-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Acetophenone	98-86-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Anthracene	120-12-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Atrazine	1912-24-9	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Benzaldehyde	100-52-7	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Benzo[g,h,i]perylene	191-24-2	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Bis(2-chloroethoxy)methane	111-91-1	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Caprolactam	105-60-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Carbazole	86-74-8	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Chrysene	218-01-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Di-n-butyl phthalate	84-74-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Dibenzofuran	132-64-9	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Diethyl phthalate	84-66-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Diethyltoluamide - TIC	134-62-3					3.3	---	ug/l	NJ				
	Dimethyl phthalate	131-11-3	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Diphenyl	92-52-4	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Fluoranthene	206-44-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Fluorene	86-73-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Hexachlorocyclopentadiene	77-47-4	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Hexachloroethane	67-72-1	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Isophorone	78-59-1	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	n-Hexadecanoic acid - TIC	57-10-3	4.3	---	ug/l	NJ					4.0	---	ug/l	NJ
	N-Nitrosodi-n-propylamine	621-64-7	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Naphthalene	91-20-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Nitrobenzene	98-95-3	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Octadecanoic acid - TIC	57-11-4	4.1	---	ug/l	NJ	5.3	---	ug/l	NJ	3.5	---	ug/l	NJ
	Phenanthrene	85-01-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Phenol	108-95-2	ND	8.9	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Pyrene	129-00-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Tetradecanoic acid - TIC	544-63-8												
	Tridecanoic acid - TIC	638-53-9					5.8	---	ug/l	NJ				
OSW-8270DSIM														
	Benzo[a]anthracene	56-55-3	ND	0.047	ug/l	---	ND	0.044	ug/l	---	ND	0.045	ug/l	---
	Benzo[a]pyrene	50-32-8	ND	0.047	ug/l	---	ND	0.044	ug/l	---	ND	0.045	ug/l	---
	Benzo[b]fluoranthene	205-99-2	ND	0.047	ug/l	---	ND	0.044	ug/l	---	ND	0.045	ug/l	---
	Hexachlorobenzene	118-74-1	ND	0.019	ug/l	---	ND	0.018	ug/l	---	ND	0.018	ug/l	---
	Hexachlorobutadiene	87-68-3	ND	0.38	ug/l	---	ND	0.35	ug/l	---	ND	0.36	ug/l	---
	N-Nitrosodimethylamine	62-75-9	ND	0.75	ug/l	---	ND	0.70	ug/l	---	ND	0.73	ug/l	---
	Pentachlorophenol	87-86-5	ND	0.28	ug/l	---	ND	0.26	ug/l	---	ND	0.27	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	SR-3 Seep 2-081915				SR-3 Pond-081915				SR-3 Seep 1-081915			
		Lab Sample ID:	490856581				490856582				490856583			
		Sample Date:	8/19/2015				8/19/2015				8/19/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.063	0.020	mg/l	---	ND	0.020	mg/l	---	0.60	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0013	0.0020	mg/l	J
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic	7440-38-2	0.0027	0.0020	mg/l	B	0.0018	0.0020	mg/l	UB	0.0047	0.0020	mg/l	B
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.22	0.0020	mg/l	---	0.075	0.0020	mg/l	---	0.27	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.18	0.0020	mg/l	---	0.071	0.0020	mg/l	---	0.15	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	24.8	1.0	mg/l	---	27.6	1.0	mg/l	---	26.1	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	24.4	1.0	mg/l	---	26.5	1.0	mg/l	---	23.5	1.0	mg/l	---
Chromium	7440-47-3	0.0021	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0027	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	0.00069	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.0034	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0012	0.0020	mg/l	J
Copper	7440-50-8	0.0012	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.0061	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Iron	7439-89-6	43.2	0.025	mg/l	---	0.54	0.025	mg/l	---	74.4	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.018	0.025	mg/l	J	0.062	0.025	mg/l	---	ND	0.025	mg/l	---
Lead	7439-92-1	0.00081	0.0020	mg/l	J	0.00028	0.0020	mg/l	J	0.0043	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	3.8	1.0	mg/l	---	4.5	1.0	mg/l	---	4.0	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	3.9	1.0	mg/l	---	4.4	1.0	mg/l	---	3.7	1.0	mg/l	---
Manganese	7439-96-5	0.81	0.0020	mg/l	---	0.052	0.0020	mg/l	---	1.1	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.84	0.0020	mg/l	---	0.020	0.0020	mg/l	---	0.84	0.0020	mg/l	---
Nickel	7440-02-0	0.0012	0.0020	mg/l	J	0.00071	0.0020	mg/l	J	0.0046	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00092	0.0020	mg/l	J
Potassium	7440-09-7	1.6	1.0	mg/l	---	1.7	1.0	mg/l	---	1.6	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	1.5	1.0	mg/l	---	1.6	1.0	mg/l	---	1.3	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00098	0.0020	mg/l	UB
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	4.7	1.0	mg/l	---	6.3	1.0	mg/l	---	3.5	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	3.5	1.0	mg/l	---	10.9	1.0	mg/l	---	3.4	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0040	0.0020	mg/l	B	0.00093	0.0020	mg/l	UB	0.0048	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.00097	0.0020	mg/l	UB	0.0010	0.0020	mg/l	UB	0.00095	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	0.039	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	1.54	1.00	mg/l	---	4.20	1.00	mg/l	---	1.58	1.00	mg/l	---
Sulfate	14808-79-8	1.52	1.00	mg/l	---	1.12	1.00	mg/l	---	0.95	1.00	mg/l	J
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	91.4	10.0	mg/l	---	79.4	10.0	mg/l	---	82.5	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	91.4	10.0	mg/l	---	79.4	10.0	mg/l	---	82.5	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	Dup-04-081915				SW-NOB-02-081915				SW-PAB-04-081915			
		Lab Sample ID:	490856584				490856585				490856586			
		Sample Date:	8/19/2015				8/19/2015				8/19/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropyl alcohol - TIC	67-63-0												
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2												
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSIM													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	0.44	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	Dup-04-081915				SW-NOB-02-081915				SW-PAB-04-081915			
		Lab Sample ID:	490856584				490856585				490856586			
		Sample Date:	8/19/2015				8/19/2015				8/19/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	1H-Pyrrole, 3,5-dimethyl-2-phenyl- - TIC	3274-53-1												
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Naphthalenecarboxylic acid - TIC	93-09-4												
	2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5												
	3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
	Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyltoluamide - TIC	134-62-3												
	Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	n-Hexadecanoic acid - TIC	57-10-3												
	N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Octadecanoic acid - TIC	57-11-4												
	Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Tetradecanoic acid - TIC	544-63-8									3.4	---	ug/l	NJ
	Tridecanoic acid - TIC	638-53-9												
OSW-8270DSIM														
	Benzo[a]anthracene	56-55-3	ND	0.048	ug/l	---	ND	0.048	ug/l	---	ND	0.048	ug/l	---
	Benzo[a]pyrene	50-32-8	ND	0.048	ug/l	---	ND	0.048	ug/l	---	ND	0.048	ug/l	---
	Benzo[b]fluoranthene	205-99-2	ND	0.048	ug/l	---	ND	0.048	ug/l	---	ND	0.048	ug/l	---
	Hexachlorobenzene	118-74-1	ND	0.019	ug/l	---	ND	0.019	ug/l	---	ND	0.019	ug/l	---
	Hexachlorobutadiene	87-68-3	ND	0.38	ug/l	---	ND	0.38	ug/l	---	ND	0.38	ug/l	---
	N-Nitrosodimethylamine	62-75-9	ND	0.77	ug/l	---	ND	0.77	ug/l	---	ND	0.77	ug/l	---
	Pentachlorophenol	87-86-5	ND	0.29	ug/l	---	ND	0.29	ug/l	---	ND	0.29	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	Dup-04-081915				SW-NOB-02-081915				SW-PAB-04-081915			
		Lab Sample ID:	490856584				490856585				490856586			
		Sample Date:	8/19/2015				8/19/2015				8/19/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.20	0.020	mg/l	---	0.53	0.020	mg/l	---	0.20	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	0.018	0.020	mg/l	J	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	0.00057	0.0020	mg/l	J	ND	0.0020	mg/l	---
Arsenic	7440-38-2	0.0019	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.039	0.0020	mg/l	---	0.015	0.0020	mg/l	---	0.041	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.029	0.0020	mg/l	---	0.0064	0.0020	mg/l	---	0.030	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	27.3	1.0	mg/l	---	12.0	1.0	mg/l	---	27.5	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	26.4	1.0	mg/l	---	11.1	1.0	mg/l	---	27.3	1.0	mg/l	---
Chromium	7440-47-3	0.00053	0.0020	mg/l	J	0.0012	0.0020	mg/l	J	0.0037	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	0.0011	0.0020	mg/l	J	0.0018	0.0020	mg/l	J	0.0012	0.0020	mg/l	J
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Iron	7439-89-6	1.9	0.025	mg/l	---	1.1	0.025	mg/l	---	2.0	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.037	0.025	mg/l	---	0.16	0.025	mg/l	---	0.042	0.025	mg/l	---
Lead	7439-92-1	0.00044	0.0020	mg/l	J	0.0012	0.0020	mg/l	J	0.00049	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	5.6	1.0	mg/l	---	5.0	1.0	mg/l	---	5.7	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	5.6	1.0	mg/l	---	4.7	1.0	mg/l	---	5.8	1.0	mg/l	---
Manganese	7439-96-5	0.31	0.0020	mg/l	---	0.093	0.0020	mg/l	---	0.36	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.034	0.0020	mg/l	---	0.015	0.0020	mg/l	---	0.023	0.0020	mg/l	---
Nickel	7440-02-0	0.0010	0.0020	mg/l	J	0.0017	0.0020	mg/l	J	0.0011	0.0020	mg/l	J
Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Potassium	7440-09-7	1.2	1.0	mg/l	---	1.1	1.0	mg/l	---	1.2	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	1.1	1.0	mg/l	---	0.94	1.0	mg/l	J	1.1	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	12.1	1.0	mg/l	---	3.3	1.0	mg/l	---	20.9	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	5.7	1.0	mg/l	---	12.6	1.0	mg/l	---	6.0	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0015	0.0020	mg/l	UB	0.0030	0.0020	mg/l	B	0.0015	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0010	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B	0.0011	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	UJ
OSW-9056A													
Chloride	16887-00-6	6.11	1.00	mg/l	---	1.42	1.00	mg/l	---	6.41	1.00	mg/l	---
Sulfate	14808-79-8	3.98	1.00	mg/l	---	6.20	1.00	mg/l	---	3.95	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	83.0	10.0	mg/l	---	43.3	10.0	mg/l	---	83.0	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	83.0	10.0	mg/l	---	43.3	10.0	mg/l	---	83.0	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	RW-10 (120-130)-081915				TB-10-082015			
		Lab Sample ID:	490856587				490856588			
		Sample Date:	8/19/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC									
OSW-8260C									
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	5.3	50	ug/l	J	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	43	25	ug/l	---	3.5	25	ug/l	J
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	3.2	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropyl alcohol - TIC	67-63-0	48	50	ug/l	J				
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	0.22	1.0	ug/l	J	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2	27	---	ug/l	NJ				
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSIM									
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	RW-10 (120-130)-081915				TB-10-082015			
		Lab Sample ID:	490856587				490856588			
		Sample Date:	8/19/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC									
OSW-8270D									
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---				
1H-Pyrrole, 3,5-dimethyl-2-phenyl- - TIC	3274-53-1	3.5	---	ug/l	NJ				
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---				
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---				
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---				
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---				
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---				
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---				
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---				
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---				
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---				
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---				
2-Chlorophenol	95-57-8	ND	10	ug/l	---				
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---				
2-Methylphenol	95-48-7	ND	10	ug/l	---				
2-Naphthalenecarboxylic acid - TIC	93-09-4	5.6	---	ug/l	NJ				
2-Nitroaniline	88-74-4	ND	25	ug/l	---				
2-Nitrophenol	88-75-5	ND	10	ug/l	---				
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---				
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---				
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5	15	---	ug/l	NJ				
3-Nitroaniline	99-09-2	ND	25	ug/l	---				
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---				
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---				
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---				
4-Chloroaniline	106-47-8	ND	10	ug/l	---				
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---				
4-Nitroaniline	100-01-6	ND	25	ug/l	---				
4-Nitrophenol	100-02-7	ND	25	ug/l	---				
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3	7.7	---	ug/l	NJ				
Acenaphthene	83-32-9	ND	2.0	ug/l	---				
Acenaphthylene	208-96-8	ND	2.0	ug/l	---				
Acetophenone	98-86-2	ND	10	ug/l	---				
Anthracene	120-12-7	ND	2.0	ug/l	---				
Atrazine	1912-24-9	ND	10	ug/l	---				
Benzaldehyde	100-52-7	ND	10	ug/l	---				
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---				
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---				
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---				
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---				
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---				
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---				
Caprolactam	105-60-2	ND	10	ug/l	---				
Carbazole	86-74-8	ND	10	ug/l	---				
Chrysene	218-01-9	ND	2.0	ug/l	---				
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---				
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---				
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---				
Dibenzofuran	132-64-9	ND	10	ug/l	---				
Diethyl phthalate	84-66-2	ND	10	ug/l	---				
Diethyltoluamide - TIC	134-62-3								
Dimethyl phthalate	131-11-3	ND	10	ug/l	---				
Diphenyl	92-52-4	ND	10	ug/l	---				
Fluoranthene	206-44-0	ND	2.0	ug/l	---				
Fluorene	86-73-7	ND	2.0	ug/l	---				
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---				
Hexachloroethane	67-72-1	ND	10	ug/l	---				
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---				
Isophorone	78-59-1	ND	10	ug/l	---				
n-Hexadecanoic acid - TIC	57-10-3	9.9	---	ug/l	NJ				
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---				
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---				
Naphthalene	91-20-3	ND	2.0	ug/l	---				
Nitrobenzene	98-95-3	ND	10	ug/l	---				
Octadecanoic acid - TIC	57-11-4	8.7	---	ug/l	NJ				
Phenanthrene	85-01-8	ND	2.0	ug/l	---				
Phenol	108-95-2	8.6	10	ug/l	J				
Pyrene	129-00-0	ND	2.0	ug/l	---				
Tetradecanoic acid - TIC	544-63-8								
Tridecanoic acid - TIC	638-53-9								
OSW-8270DSIM									
Benzo[a]anthracene	56-55-3	ND	0.047	ug/l	---				
Benzo[a]pyrene	50-32-8	ND	0.047	ug/l	---				
Benzo[b]fluoranthene	205-99-2	ND	0.047	ug/l	---				
Hexachlorobenzene	118-74-1	ND	0.019	ug/l	---				
Hexachlorobutadiene	87-68-3	ND	0.38	ug/l	---				
N-Nitrosodimethylamine	62-75-9	ND	0.75	ug/l	---				
Pentachlorophenol	87-86-5	ND	0.28	ug/l	---				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	RW-10 (120-130)-081915				TB-10-082015			
		Lab Sample ID:	490856587				490856588			
		Sample Date:	8/19/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other									
OSW-8082A									
PCB-1016	12674-11-2	ND	0.50	ug/l	---				
PCB-1221	11104-28-2	ND	0.50	ug/l	---				
PCB-1232	11141-16-5	ND	0.50	ug/l	---				
PCB-1242	53469-21-9	ND	0.50	ug/l	---				
PCB-1248	12672-29-6	ND	0.50	ug/l	---				
PCB-1254	11097-69-1	ND	0.50	ug/l	---				
PCB-1260	11096-82-5	ND	0.50	ug/l	---				
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---				
Metals									
OSW-6020A									
Aluminum	7429-90-5	0.17	0.020	mg/l	---				
Aluminum - Dissolved	7429-90-5	0.13	0.020	mg/l	---				
Antimony	7440-36-0	ND	0.0020	mg/l	---				
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---				
Arsenic	7440-38-2	0.0075	0.0020	mg/l	---				
Arsenic - Dissolved	7440-38-2	0.0067	0.0020	mg/l	---				
Barium	7440-39-3	0.017	0.0020	mg/l	---				
Barium - Dissolved	7440-39-3	0.015	0.0020	mg/l	---				
Beryllium	7440-41-7	ND	0.0020	mg/l	---				
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---				
Cadmium	7440-43-9	ND	0.0010	mg/l	---				
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---				
Calcium	7440-70-2	50.8	1.0	mg/l	---				
Calcium - Dissolved	7440-70-2	46.0	1.0	mg/l	---				
Chromium	7440-47-3	ND	0.0020	mg/l	---				
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---				
Cobalt	7440-48-4	ND	0.0020	mg/l	---				
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---				
Copper	7440-50-8	ND	0.0020	mg/l	---				
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---				
Iron	7439-89-6	0.028	0.025	mg/l	---				
Iron - Dissolved	7439-89-6	ND	0.025	mg/l	---				
Lead	7439-92-1	ND	0.0020	mg/l	---				
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---				
Magnesium	7439-95-4	ND	1.0	mg/l	---				
Magnesium - Dissolved	7439-95-4	ND	1.0	mg/l	---				
Manganese	7439-96-5	ND	0.0020	mg/l	---				
Manganese - Dissolved	7439-96-5	ND	0.0020	mg/l	---				
Nickel	7440-02-0	0.013	0.0020	mg/l	---				
Nickel - Dissolved	7440-02-0	0.011	0.0020	mg/l	---				
Potassium	7440-09-7	28.6	1.0	mg/l	---				
Potassium - Dissolved	7440-09-7	24.6	1.0	mg/l	---				
Selenium	7782-49-2	0.0033	0.0020	mg/l	---				
Selenium - Dissolved	7782-49-2	0.0027	0.0020	mg/l	---				
Silver	7440-22-4	ND	0.0020	mg/l	---				
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---				
Sodium	7440-23-5	65.8	1.0	mg/l	---				
Sodium - Dissolved	7440-23-5	64.9	1.0	mg/l	---				
Thallium	7440-28-0	ND	0.0020	mg/l	---				
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---				
Vanadium	7440-62-2	0.0088	0.0020	mg/l	---				
Vanadium - Dissolved	7440-62-2	0.0071	0.0020	mg/l	---				
Zinc	7440-66-6	ND	0.025	mg/l	---				
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---				
OSW-7470A									
Mercury	7439-97-6	ND	0.00020	mg/l	---				
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---				
General Chemistry									
OSW-9012B									
Cyanide, Total	57-12-5	ND	0.010	mg/l	---				
OSW-9056A									
Chloride	16887-00-6	8.09	1.00	mg/l	---				
Sulfate	14808-79-8	134	1.00	mg/l	---				
Prep									
APHA-2320B									
Bicarbonate Alkalinity as CaCO3	E-14508	ND	10.0	mg/l	---				
Total Alkalinity as CaCO3	E-14506	121	10.0	mg/l	---				

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85658-1

		Sample Name:	SR-3 Seep 2-081915				SR-3 Pond-081915				SR-3 Seep 1-081915				Dup-04-081915				SW-NOB-02-081915				SW-PAB-04-081915				RW-10 (120-130)-081915				TB-10-082015			
		Lab Sample ID:	490856581				490856582				490856583				490856584				490856585				490856586				490856587				490856588			
		Sample Date:	8/19/2015				8/19/2015				8/19/2015				8/19/2015				8/19/2015				8/19/2015				8/19/2015				8/20/2015			
Analyte	**Cas No.**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																																		
OSW-8260C																																		
Isopropyl alcohol - TIC	67-63-0																										48	50	ug/l	J				
Methyl acetate	79-20-9		ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Unknown - TIC	Tic2																										27	---	ug/l	NJ				
GC/MS SVOC																																		
OSW-8260CSIM																																		
1,4-Dioxane	123-91-1						1.6	10	ug/l	J																								
OSW-8270D																																		
1H-Pyrrole, 3,5-dimethyl-2-phenyl- - TIC	3274-53-1																										3.5	---	ug/l	NJ				
2-Naphthalenecarboxylic acid - TIC	93-09-4																										5.6	---	ug/l	NJ				
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5																										15	---	ug/l	NJ				
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3																										7.7	---	ug/l	NJ				
Diethyltoluamide - TIC	134-62-3						3.3	---	ug/l	NJ																								
n-Hexadecanoic acid - TIC	57-10-3		4.3	---	ug/l	NJ					4.0	---	ug/l	NJ													9.9	---	ug/l	NJ				
Octadecanoic acid - TIC	57-11-4		4.1	---	ug/l	NJ	5.3	---	ug/l	NJ	3.5	---	ug/l	NJ													8.7	---	ug/l	NJ				
Tetradecanoic acid - TIC	544-63-8																						3.4	---	ug/l	NJ								
Tridecanoic acid - TIC	638-53-9						5.8	---	ug/l	NJ																								
Metals																																		
OSW-6020A																																		
Arsenic	7440-38-2		0.0027	0.0020	mg/l	B	0.0018	0.0020	mg/l	UB	0.0047	0.0020	mg/l	B	0.0019	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B								
Selenium	7782-49-2										0.00098	0.0020	mg/l	UB																				
Vanadium	7440-62-2		0.0040	0.0020	mg/l	B	0.00093	0.0020	mg/l	UB	0.0048	0.0020	mg/l	B	0.0015	0.0020	mg/l	UB	0.0030	0.0020	mg/l	B	0.0015	0.0020	mg/l	UB								
Vanadium - Dissolved	7440-62-2		0.00097	0.0020	mg/l	UB	0.0010	0.0020	mg/l	UB	0.00095	0.0020	mg/l	UB	0.0010	0.0020	mg/l	UB	0.0020	0.0020	mg/l	B	0.0011	0.0020	mg/l	UB								
General Chemistry																																		
OSW-9012B																																		
Cyanide, Total	57-12-5																						ND	0.010	mg/l	UJ								

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
85658

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

09/21/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Carri	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filter)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
				Preservation Code:																		
1	SR-3 Seep 2-081915	8/19/15	11:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
2	SR-3 Pond - 081915	8/19/15	11:45	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
3	SR-3 Seep 1 - 081915	8/19/15	12:10	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
4	Dup-04-081915	8/19/15	12:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
5	SW-NOB-02-081915	8/19/15	14:30	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
6	SW-PAB-04-081915	8/19/15	15:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
7	RW-10(120-130)-081915	8/19/15	09:25	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
8	TB-10-082015	8/20/15	—	—	Water	N	N	✓	✓													
					Water																	
					Water																	
					Water																	

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	8/20/15 915	Cornerst	[signature]	8/20/15 915	TA
[signature]	8-20-15 1230	TA	[signature]	8-21-15 0920	TAN

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.0, 1.0, 0.7

E-Mail Date: 2015-10-16
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-85779-1

PREPARED BY:
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1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-85779-1	8/20-21/2015	8/22/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM

GCMS VOC Continuing Calibration Verification standards 278001/3 analyzed on 9/1 and CCV 278444/2 analyzed on 9/2 had multiple responses outside of laboratory control limits. High bias outliers did not have an effect on client sample data or were not associated with target analytes for this submittal. Low bias recoveries were observed for target analytes chloromethane and methyl acetate in the CCV from 9/1 and chloromethane, bromomethane, acetone and methyl acetate from 9/2. The TIC analyte was already qualified as estimated due to being detected below the RL. All client sample methyl acetate and chloromethane results and client samples -001, -002, -003, -004, -005, -006, -007 acetone and bromomethane results were non-detect so the associated reporting limits should be considered to be estimated and qualified with UJ flags based on the low bias CCV responses.

GCMS SVOC and SIM

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

PCB

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

METALS

Metals Continuing Calibration Blank (CCB) CCB-490-277043/43 at 16:04 of 8/27 analytical sequence had a detection for selenium above the MDL but below the RL. Based on this CCB detection client samples 490-85779-002, -004, -005 and -007 total selenium results should be considered to be non-detect at the RL and qualified with UB flags.

Client sample -003 total sodium result was above the instrument linear dynamic range (LDR) so this result should be considered to be estimated and qualified with an E flag.

INORGANICS

CYANIDE – Sample -006 raw data recalculation generated a result of <0.007mg/L but the original lab report value was 0.0084mg/L for cyanide. Lab provided the following explanation for the discrepancy: 490-58779-06 – Cyanide - `The instrument/ raw data records the final result to the 4th exponent during the upload the data was transferred to TALS as the 3rd exponent. Result has been changed from 0.00845 to 0.000845. We will be getting you revised reports on this one.`

Revised data has been re-loaded to CLMS database and revised report posted to project. Revised data is reflected in this validation report as well.

The following observations **DID NOT** result in qualification but were noted during the validation review:

GCMS VOC

CCV outliers were not associated with target analytes for this submittal.

GCMS VOC-SIM

CCV for sequence 276673 on 8/27 had outliers that were not associated with reported sample results. ICV for sequence 277064 on 8/28 were reported on form VII as outliers based on known spike values reported. Verification with laboratory indicated that the known spike values should

have been 10 and 0.5 (instead of 2000/100) as was historically reported for other sequences to these ICV recoveries were considered to be acceptable when compared to these historical values.

GCMS SVOC

No additional observations to report based on review of level 4 data package.

GCMS SVOC-SIM

No additional observations to report based on review of level 4 data package.

METALS

QC batch PDS and SERIAL DILUTION outliers were not determined using samples from this submittal so qualification was not required based on these sample-specific QC outliers.

CRQL's were consistently within lab control limits with the exception of potassium which was consistently biased high.

PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not result in qualification of final client sample results.

RAW DATA NOT INCLUDED IN ORIGINAL LAB LEVEL 4 DATA PACKAGE:

CYANIDE – Confirmation was required from lab for sample -006 cyanide result which did not reconcile with re-calculated results.

DISSOLVED MERCURY – Sample raw data was not included – duplicate of total mercury run was reported instead.

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank had a detection below the RL for acetone. Client samples -008 and -010 acetone results should be considered to be non-detect at the RL and qualified with UB flags.

GCMS-SIM VOC surrogate recoveries were outliers biased high for 1 out of 4 surrogates in client sample -003. GCMS-SIM VOC detected results in this sample should be considered to be estimated and qualified with J flags. Non-detect results do not require qualification.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

GCMS VOC QC batch 278001 and 278444 LCS recovery was an outlier biased high for cyclohexane. Qualification of client sample results was not required based on these high bias QC outliers.

GCMS VOC QC batch 278444 method blank had a detection below the RL for methylene chloride. Qualification of client sample results was not required based on this method blank detection.

GCMS SVOC QC batch 276471 and 276884 MS recoveries were not reported in the laboratory submittal QC summary. These QC results will be evaluated as part of the level 4 data package review to follow. (no MS/MSD results were reported in level 4 data package for these batches either).

Metals method blanks had detections below the RL in QC batch 275892 and 276511 for total and dissolved vanadium. Client samples -001, -002, -003, -004, -005, -006, -007, -008, -009 and -010 dissolved vanadium results and client samples -001, -002, -003, -004, -008, -009 and -010 total vanadium results should be considered to be

non-detect at the RL and qualified with UB flags. Client samples -005, -006 and -007 total vanadium results should be considered to be non-detect at the concentration reported and qualified with B flags.

GCMS VOC QC batch 278001 and 278444 and Cyanide QC batch 276133 and Inorganic Ion QC batch 278255 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Cyanide sample -010 MS recovery only was an outlier biased low. Qualification of client sample results is not required based on this QC outlier alone.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.
If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.
All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.
CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified

as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD’s were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6ºC after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 85779-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	Mercury (Manual Cold Vapor)(D)	Mercury (Manual Cold Vapor)	TOTAL AND AMENABLE CYANIDE (AUTOMATED COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Inorganic Anions by IC	Alkalinity Prep
490857791	SW-PMB-02-082015	8/20/2015	9:30:00	X	X	X	X	X	X	X	X	X	X	X	X
4908577910	RW-8 (204-214)-082015	8/20/2015	2:15:00	X	X	X	X	X	X	X	X	X	X	X	X
4908577911	TB-11-082115	8/21/2015	12:01:00	X	X										
490857792	SW-PMB-01-082015	8/20/2015	10:10:00	X	X	X	X	X	X	X	X	X	X	X	X
490857793	SW-03-082015	8/20/2015	11:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490857794	SW-MRB-03-082015	8/20/2015	11:40:00	X	X	X	X	X	X	X	X	X	X	X	X
490857795	SW-MRB-02-082015	8/20/2015	12:15:00	X	X	X	X	X	X	X	X	X	X	X	X
490857796	SW-MRB-01-082015	8/20/2015	2:15:00	X	X	X	X	X	X	X	X	X	X	X	X
490857797	SW-MRB-00-082015	8/20/2015	3:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490857798	PMP-Pond-082015	8/20/2015	4:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490857799	RW-10A (51-61)-082015	8/20/2015	9:15:00	X	X	X	X	X	X	X	X	X	X	X	X

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85779-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85779-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85779-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85779-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	SW-PMB-02-082015				RW-8 (204-214)-082015				TB-11-082115			
		Lab Sample ID:	490857791				4908577910				4908577911			
		Sample Date:	8/20/2015				8/20/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	UJ	4.1	25	ug/l	UB	2.7	25	ug/l	J
Benzene	71-43-2	ND	1.0	ug/l	---	0.57	1.0	ug/l	J	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	2.3	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	SW-PMB-02-082015				RW-8 (204-214)-082015				TB-11-082115			
		Lab Sample ID:	490857791				4908577910				4908577911			
		Sample Date:	8/20/2015				8/20/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
14-Pentadecenoic acid - TIC	17351-34-7					23	---	ug/l	NJ				
2,2'-oxybis[1-chloropropane]	108-60-1	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2,3,4,6-Tetrachlorophenol	58-90-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2,4,5-Trichlorophenol	95-95-4	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2,4,6-Trichlorophenol	88-06-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2,4-Dichlorophenol	120-83-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2,4-Dimethylphenol	105-67-9	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2,4-Dinitrophenol	51-28-5	ND	22	ug/l	---	ND	23	ug/l	---				
2,4-Dinitrotoluene	121-14-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2,6-Dinitrotoluene	606-20-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2-Chloronaphthalene	91-58-7	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2-Chlorophenol	95-57-8	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2-Methylnaphthalene	91-57-6	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
2-Methylphenol	95-48-7	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
2-Nitroaniline	88-74-4	ND	22	ug/l	---	ND	23	ug/l	---				
2-Nitrophenol	88-75-5	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
3 & 4 Methylphenol	65794-96-9	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
3,3'-Dichlorobenzidine	91-94-1	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5					22	---	ug/l	NJ				
3-Nitroaniline	99-09-2	ND	22	ug/l	---	ND	23	ug/l	---				
4,6-Dinitro-2-methylphenol	534-52-1	ND	22	ug/l	---	ND	23	ug/l	---				
4-Bromophenyl phenyl ether	101-55-3	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
4-Chloro-3-methylphenol	59-50-7	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
4-Chloroaniline	106-47-8	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
4-Chlorophenyl phenyl ether	7005-72-3	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
4-Nitroaniline	100-01-6	ND	22	ug/l	---	ND	23	ug/l	---				
4-Nitrophenol	100-02-7	ND	22	ug/l	---	ND	23	ug/l	---				
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3					5.8	---	ug/l	NJ				
9-Octadecenamide, (Z)- - TIC	301-02-0					4.3	---	ug/l	NJ				
9-Octadecenoic acid, (E)- - TIC	112-79-8												
Acenaphthene	83-32-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Acenaphthylene	208-96-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Acetophenone	98-86-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Anthracene	120-12-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Atrazine	1912-24-9	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Benzaldehyde	100-52-7	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Benzenesulfonamide, N-butyl- - TIC	3622-84-2					37	---	ug/l	NJ				
Benzo[g,h,i]perylene	191-24-2	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Benzo[k]fluoranthene	207-08-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Bis(2-chloroethoxy)methane	111-91-1	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Bis(2-chloroethyl)ether	111-44-4	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Bis(2-ethylhexyl) phthalate	117-81-7	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Butyl benzyl phthalate	85-68-7	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Caprolactam	105-60-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Carbazole	86-74-8	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Cholestan-3-ol, 4-methyl-, (3.beta.,4.al - TIC	3903-57-9												
Chrysene	218-01-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Di-n-butyl phthalate	84-74-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Di-n-octyl phthalate	117-84-0	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Dibenz(a,h)anthracene	53-70-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Dibenzofuran	132-64-9	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Diethyl phthalate	84-66-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Diethyltoluamide - TIC	134-62-3												
Dimethyl phthalate	131-11-3	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Diphenyl	92-52-4	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Eicosane - TIC	112-95-8					3.1	---	ug/l	NJ				
Fluoranthene	206-44-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Fluorene	86-73-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Hexachlorocyclopentadiene	77-47-4	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Hexachloroethane	67-72-1	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Hexadeca-2,6,10,14-tetraen-1-ol, 3,7,11, - TIC	7614-21-3					3.1	---	ug/l	NJ				
Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Isophorone	78-59-1	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
N-Nitrosodi-n-propylamine	621-64-7	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
N-Nitrosodiphenylamine	86-30-6	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Naphthalene	91-20-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Nitrobenzene	98-95-3	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Nonanoic acid - TIC	112-05-0					69	---	ug/l	NJ				
Octadecanoic acid - TIC	57-11-4												
Oleic Acid - TIC	112-80-1												
Phenanthrene	85-01-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Phenol	108-95-2	ND	8.9	ug/l	---	ND	9.1	ug/l	---				
Pyrene	129-00-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---				
Tetradecanoic acid - TIC	544-63-8					6.9	---	ug/l	NJ				
Tridecanoic acid - TIC	638-53-9												
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0												

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	SW-PMB-02-082015				RW-8 (204-214)-082015				TB-11-082115			
		Lab Sample ID:	490857791				4908577910				4908577911			
		Sample Date:	8/20/2015				8/20/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---				
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---				
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---				
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---				
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.45	ug/l	---	ND	0.50	ug/l	---				
PCB-1221	11104-28-2	ND	0.45	ug/l	---	ND	0.50	ug/l	---				
PCB-1232	11141-16-5	ND	0.45	ug/l	---	ND	0.50	ug/l	---				
PCB-1242	53469-21-9	ND	0.45	ug/l	---	ND	0.50	ug/l	---				
PCB-1248	12672-29-6	ND	0.45	ug/l	---	ND	0.50	ug/l	---				
PCB-1254	11097-69-1	ND	0.45	ug/l	---	ND	0.50	ug/l	---				
PCB-1260	11096-82-5	ND	0.45	ug/l	---	ND	0.50	ug/l	---				
Polychlorinated biphenyls, Total	1336-36-3	ND	0.45	ug/l	---	ND	0.50	ug/l	---				
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.013	0.020	mg/l	J	ND	0.020	mg/l	---				
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---				
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Antimony - Dissolved	7440-36-0	0.00060	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Arsenic	7440-38-2	ND	0.0020	mg/l	---	0.0020	0.0020	mg/l	---				
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	0.0019	0.0020	mg/l	J				
Barium	7440-39-3	0.015	0.0020	mg/l	---	0.037	0.0020	mg/l	---				
Barium - Dissolved	7440-39-3	0.018	0.0020	mg/l	---	0.041	0.0020	mg/l	---				
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Calcium	7440-70-2	26.7	1.0	mg/l	---	67.5	1.0	mg/l	---				
Calcium - Dissolved	7440-70-2	46.9	1.0	mg/l	---	63.5	1.0	mg/l	---				
Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Copper	7440-50-8	ND	0.0020	mg/l	---	0.0011	0.0020	mg/l	J				
Copper - Dissolved	7440-50-8	0.0013	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Iron	7439-89-6	0.25	0.025	mg/l	---	1.5	0.025	mg/l	---				
Iron - Dissolved	7439-89-6	0.023	0.025	mg/l	J	0.24	0.025	mg/l	---				
Lead	7439-92-1	ND	0.0020	mg/l	---	0.00097	0.0020	mg/l	J				
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Magnesium	7439-95-4	8.7	1.0	mg/l	---	20.0	1.0	mg/l	---				
Magnesium - Dissolved	7439-95-4	13.1	1.0	mg/l	---	20.9	1.0	mg/l	---				
Manganese	7439-96-5	0.22	0.0020	mg/l	---	0.31	0.0020	mg/l	---				
Manganese - Dissolved	7439-96-5	0.16	0.0020	mg/l	---	0.27	0.0020	mg/l	---				
Nickel	7440-02-0	ND	0.0020	mg/l	---	0.035	0.0020	mg/l	---				
Nickel - Dissolved	7440-02-0	0.0087	0.0020	mg/l	---	0.024	0.0020	mg/l	---				
Potassium	7440-09-7	1.3	1.0	mg/l	---	10.3	1.0	mg/l	---				
Potassium - Dissolved	7440-09-7	3.8	1.0	mg/l	---	16.3	1.0	mg/l	---				
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Sodium	7440-23-5	56.3	1.0	mg/l	---	87.5	1.0	mg/l	---				
Sodium - Dissolved	7440-23-5	51.0	1.0	mg/l	---	92.5	1.0	mg/l	---				
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Vanadium	7440-62-2	0.0015	0.0020	mg/l	UB	0.0014	0.0020	mg/l	UB				
Vanadium - Dissolved	7440-62-2	0.0011	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB				
Zinc	7440-66-6	ND	0.025	mg/l	---	0.022	0.025	mg/l	J				
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---				
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---				
OSW-9056A													
Chloride	16887-00-6	87.0	1.00	mg/l	---	55.2	1.00	mg/l	---				
Sulfate	14808-79-8	7.16	1.00	mg/l	---	149	1.00	mg/l	---				
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	138	10.0	mg/l	---	216	10.0	mg/l	---				
Total Alkalinity as CaCO3	E-14506	138	10.0	mg/l	---	216	10.0	mg/l	---				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	SW-PMB-01-082015				SW-03-082015				SW-MRB-03-082015			
		Lab Sample ID:	490857792				490857793				490857794			
		Sample Date:	8/20/2015				8/20/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	UJ	ND	25	ug/l	UJ	ND	25	ug/l	UJ
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	0.73	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	SW-PMB-01-082015				SW-03-082015				SW-MRB-03-082015			
		Lab Sample ID:	490857792				490857793				490857794			
		Sample Date:	8/20/2015				8/20/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
14-Pentadecenoic acid - TIC	17351-34-7												
2,2'-oxybis[1-chloropropane]	108-60-1	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2-Chloronaphthalene	91-58-7	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2-Chlorophenol	95-57-8	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2-Methylnaphthalene	91-57-6	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
2-Methylphenol	95-48-7	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
2-Nitroaniline	88-74-4	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
2-Nitrophenol	88-75-5	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5												
3-Nitroaniline	99-09-2	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
4-Chloroaniline	106-47-8	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
4-Nitroaniline	100-01-6	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
4-Nitrophenol	100-02-7	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
9-Octadecenamide, (Z)- - TIC	301-02-0												
9-Octadecenoic acid, (E)- - TIC	112-79-8					3.2	---	ug/l	NJ				
Acenaphthene	83-32-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Acenaphthylene	208-96-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Acetophenone	98-86-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Anthracene	120-12-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Atrazine	1912-24-9	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Benzaldehyde	100-52-7	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Benzenesulfonamide, N-butyl- - TIC	3622-84-2												
Benzo[g,h,i]perylene	191-24-2	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Caprolactam	105-60-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Carbazole	86-74-8	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Cholestan-3-ol, 4-methyl-, (3.beta.,4.al - TIC	3903-57-9												
Chrysene	218-01-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Dibenzofuran	132-64-9	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Diethyl phthalate	84-66-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Diethyltoluamide - TIC	134-62-3												
Dimethyl phthalate	131-11-3	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Diphenyl	92-52-4	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Eicosane - TIC	112-95-8												
Fluoranthene	206-44-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Fluorene	86-73-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Hexachloroethane	67-72-1	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Hexadeca-2,6,10,14-tetraen-1-ol, 3,7,11, - TIC	7614-21-3												
Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Isophorone	78-59-1	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Naphthalene	91-20-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Nitrobenzene	98-95-3	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Nonanoic acid - TIC	112-05-0												
Octadecanoic acid - TIC	57-11-4	3.0	---	ug/l	NJ					3.8	---	ug/l	NJ
Oleic Acid - TIC	112-80-1												
Phenanthrene	85-01-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Phenol	108-95-2	ND	8.9	ug/l	---	ND	8.8	ug/l	---	ND	8.8	ug/l	---
Pyrene	129-00-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Tetradecanoic acid - TIC	544-63-8												
Tridecanoic acid - TIC	638-53-9	4.8	---	ug/l	NJ								
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0												

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
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		Sample Name:	SW-PMB-01-082015				SW-03-082015				SW-MRB-03-082015			
		Lab Sample ID:	490857792				490857793				490857794			
		Sample Date:	8/20/2015				8/20/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.43	ug/l	---	ND	0.43	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.43	ug/l	---	ND	0.43	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.43	ug/l	---	ND	0.43	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.43	ug/l	---	ND	0.43	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.43	ug/l	---	ND	0.43	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.43	ug/l	---	ND	0.43	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.43	ug/l	---	ND	0.43	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.43	ug/l	---	ND	0.43	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.071	0.020	mg/l	---	0.010	0.020	mg/l	J	0.027	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.00091	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.00094	0.0020	mg/l	J
Arsenic	7440-38-2	0.0010	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic - Dissolved	7440-38-2	0.00065	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.055	0.0020	mg/l	---	0.045	0.0020	mg/l	---	0.016	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.046	0.0020	mg/l	---	0.051	0.0020	mg/l	---	0.016	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	49.4	1.0	mg/l	---	45.9	1.0	mg/l	---	48.5	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	49.3	1.0	mg/l	---	46.8	1.0	mg/l	---	25.9	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	0.00078	0.0020	mg/l	J	ND	0.0020	mg/l	---
Cobalt	7440-48-4	0.00055	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00085	0.0020	mg/l	J
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	0.0011	0.0020	mg/l	J	0.00077	0.0020	mg/l	J
Iron	7439-89-6	7.8	0.025	mg/l	---	0.24	0.025	mg/l	---	0.42	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.56	0.025	mg/l	---	0.066	0.025	mg/l	---	0.036	0.025	mg/l	---
Lead	7439-92-1	0.00049	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.00029	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	9.1	1.0	mg/l	---	12.6	1.0	mg/l	---	12.8	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	9.5	1.0	mg/l	---	13.4	1.0	mg/l	---	8.8	1.0	mg/l	---
Manganese	7439-96-5	1.8	0.0020	mg/l	---	0.39	0.0020	mg/l	---	0.23	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	1.1	0.0020	mg/l	---	0.39	0.0020	mg/l	---	0.17	0.0020	mg/l	---
Nickel	7440-02-0	0.00053	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.00065	0.0020	mg/l	J	0.00086	0.0020	mg/l	J	0.00062	0.0020	mg/l	J
Potassium	7440-09-7	8.4	1.0	mg/l	---	2.0	1.0	mg/l	---	3.8	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	8.3	1.0	mg/l	---	2.1	1.0	mg/l	---	1.3	1.0	mg/l	---
Selenium	7782-49-2	0.00062	0.0020	mg/l	UB	ND	0.0020	mg/l	---	0.00097	0.0020	mg/l	UB
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	61.7	1.0	mg/l	---	284	1.0	mg/l	E	49.7	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	64.3	1.0	mg/l	---	309	5.0	mg/l	---	57.6	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0016	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.00090	0.0020	mg/l	UB	0.00092	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	112	1.00	mg/l	---	520	5.00	mg/l	---	126	1.00	mg/l	---
Sulfate	14808-79-8	1.76	1.00	mg/l	---	14.1	1.00	mg/l	---	6.40	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	147	10.0	mg/l	---	47.0	10.0	mg/l	---	38.7	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	147	10.0	mg/l	---	47.0	10.0	mg/l	---	38.7	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	SW-MRB-02-082015				SW-MRB-01-082015				SW-MRB-00-082015			
		Lab Sample ID:	490857795				490857796				490857797			
		Sample Date:	8/20/2015				8/20/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	UJ	ND	25	ug/l	UJ	ND	25	ug/l	UJ
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UB	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	0.33	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	SW-MRB-02-082015				SW-MRB-01-082015				SW-MRB-00-082015			
		Lab Sample ID:	490857795				490857796				490857797			
		Sample Date:	8/20/2015				8/20/2015				8/20/2015			
Analyte		**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	14-Pentadecenoic acid - TIC	17351-34-7												
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2,6-Dinitrotoluene	606-20-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2-Chlorophenol	95-57-8	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2-Methylnaphthalene	91-57-6	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	2-Methylphenol	95-48-7	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	2-Nitroaniline	88-74-4	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	2-Nitrophenol	88-75-5	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5												
	3-Nitroaniline	99-09-2	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	4-Chloroaniline	106-47-8	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	4-Nitroaniline	100-01-6	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	4-Nitrophenol	100-02-7	ND	22	ug/l	---	ND	22	ug/l	---	ND	22	ug/l	---
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
	9-Octadecenamide, (Z)- - TIC	301-02-0												
	9-Octadecenoic acid, (E)- - TIC	112-79-8												
	Acenaphthene	83-32-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Acenaphthylene	208-96-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Acetophenone	98-86-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Anthracene	120-12-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Atrazine	1912-24-9	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Benzaldehyde	100-52-7	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Benzenesulfonamide, N-butyl- - TIC	3622-84-2												
	Benzo[g,h,i]perylene	191-24-2	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Bis(2-chloroethoxy)methane	111-91-1	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Caprolactam	105-60-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Carbazole	86-74-8	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Cholestan-3-ol, 4-methyl-, (3.beta.,4.al - TIC	3903-57-9												
	Chrysene	218-01-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Di-n-butyl phthalate	84-74-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Dibenzofuran	132-64-9	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Diethyl phthalate	84-66-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Diethyltoluamide - TIC	134-62-3									17	---	ug/l	NJ
	Dimethyl phthalate	131-11-3	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Diphenyl	92-52-4	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Eicosane - TIC	112-95-8												
	Fluoranthene	206-44-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Fluorene	86-73-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Hexachlorocyclopentadiene	77-47-4	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Hexachloroethane	67-72-1	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Hexadeca-2,6,10,14-tetraen-1-ol, 3,7,11, - TIC	7614-21-3												
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Isophorone	78-59-1	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	N-Nitrosodi-n-propylamine	621-64-7	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Naphthalene	91-20-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Nitrobenzene	98-95-3	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Nonanoic acid - TIC	112-05-0												
	Octadecanoic acid - TIC	57-11-4												
	Oleic Acid - TIC	112-80-1	5.8	---	ug/l	NJ								
	Phenanthrene	85-01-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Phenol	108-95-2	ND	8.8	ug/l	---	ND	8.9	ug/l	---	ND	8.9	ug/l	---
	Pyrene	129-00-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
	Tetradecanoic acid - TIC	544-63-8												
	Tridecanoic acid - TIC	638-53-9	4.8	---	ug/l	NJ								
	[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0												

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	SW-MRB-02-082015				SW-MRB-01-082015				SW-MRB-00-082015			
		Lab Sample ID:	490857795				490857796				490857797			
		Sample Date:	8/20/2015				8/20/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.46	ug/l	---	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1221	11104-28-2	ND	0.46	ug/l	---	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1232	11141-16-5	ND	0.46	ug/l	---	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1242	53469-21-9	ND	0.46	ug/l	---	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1248	12672-29-6	ND	0.46	ug/l	---	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1254	11097-69-1	ND	0.46	ug/l	---	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1260	11096-82-5	ND	0.46	ug/l	---	ND	0.46	ug/l	---	ND	0.46	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.46	ug/l	---	ND	0.46	ug/l	---	ND	0.46	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.22	0.020	mg/l	---	0.16	0.020	mg/l	---	0.47	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	0.010	0.020	mg/l	J	0.011	0.020	mg/l	J	0.078	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.0032	0.0020	mg/l	---	0.0019	0.0020	mg/l	J	0.0015	0.0020	mg/l	J
Arsenic	7440-38-2	0.00080	0.0020	mg/l	J	0.00076	0.0020	mg/l	J	0.00065	0.0020	mg/l	J
Arsenic - Dissolved	7440-38-2	0.00054	0.0020	mg/l	J	0.00059	0.0020	mg/l	J	0.00060	0.0020	mg/l	J
Barium	7440-39-3	0.018	0.0020	mg/l	---	0.026	0.0020	mg/l	---	0.014	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.015	0.0020	mg/l	---	0.022	0.0020	mg/l	---	0.012	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	8.7	1.0	mg/l	---	9.7	1.0	mg/l	---	7.3	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	8.4	1.0	mg/l	---	9.4	1.0	mg/l	---	6.9	1.0	mg/l	---
Chromium	7440-47-3	0.0011	0.0020	mg/l	J	0.00059	0.0020	mg/l	J	0.00096	0.0020	mg/l	J
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00070	0.0020	mg/l	J
Cobalt	7440-48-4	0.0013	0.0020	mg/l	J	0.0022	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	0.00057	0.0020	mg/l	J	0.00060	0.0020	mg/l	J	ND	0.0020	mg/l	---
Copper	7440-50-8	0.00061	0.0020	mg/l	J	0.0016	0.0020	mg/l	J	0.0033	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	0.0015	0.0020	mg/l	J	0.0027	0.0020	mg/l	---
Iron	7439-89-6	8.7	0.025	mg/l	---	3.1	0.025	mg/l	---	1.3	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.84	0.025	mg/l	---	0.32	0.025	mg/l	---	0.33	0.025	mg/l	---
Lead	7439-92-1	0.00091	0.0020	mg/l	J	0.0012	0.0020	mg/l	J	0.00087	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00023	0.0020	mg/l	J
Magnesium	7439-95-4	2.7	1.0	mg/l	---	3.1	1.0	mg/l	---	2.5	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	2.8	1.0	mg/l	---	3.2	1.0	mg/l	---	2.5	1.0	mg/l	---
Manganese	7439-96-5	0.98	0.0020	mg/l	---	1.3	0.0020	mg/l	---	0.11	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.50	0.0020	mg/l	---	0.64	0.0020	mg/l	---	0.045	0.0020	mg/l	---
Nickel	7440-02-0	0.00063	0.0020	mg/l	J	0.0017	0.0020	mg/l	J	0.00073	0.0020	mg/l	J
Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---	0.0018	0.0020	mg/l	J	0.00079	0.0020	mg/l	J
Potassium	7440-09-7	0.28	1.0	mg/l	J	0.64	1.0	mg/l	J	1.1	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	0.27	1.0	mg/l	J	0.64	1.0	mg/l	J	1.1	1.0	mg/l	---
Selenium	7782-49-2	0.00093	0.0020	mg/l	UB	ND	0.0020	mg/l	---	0.00062	0.0020	mg/l	UB
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	5.7	1.0	mg/l	---	3.8	1.0	mg/l	---	2.5	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	4.3	1.0	mg/l	---	3.2	1.0	mg/l	---	2.5	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0025	0.0020	mg/l	B	0.0027	0.0020	mg/l	B	0.0032	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2	0.0010	0.0020	mg/l	UB	0.0013	0.0020	mg/l	UB	0.0019	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	0.018	0.025	mg/l	J	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	0.011	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	3.27	1.00	mg/l	---	1.16	1.00	mg/l	---	1.62	1.00	mg/l	---
Sulfate	14808-79-8	1.38	1.00	mg/l	---	1.61	1.00	mg/l	---	5.05	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	30.0	10.0	mg/l	---	37.1	10.0	mg/l	---	22.4	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	30.0	10.0	mg/l	---	37.1	10.0	mg/l	---	22.4	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	PMP-Pond-082015				RW-10A (51-61)-082015			
		Lab Sample ID:	490857798				490857799			
		Sample Date:	8/20/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC										
OSW-8260C										
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---		ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---		ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---		ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---		ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---		ND	10	ug/l	---
Acetone	67-64-1	9.0	25	ug/l	UB		ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ		ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---		ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---		ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ		ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---		ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---		ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---		ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---		ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---		ND	3.0	ug/l	---
OSW-8260CSim										
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---		ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---		ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---		ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---		ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	PMP-Pond-082015				RW-10A (51-61)-082015			
		Lab Sample ID:	490857798				490857799			
		Sample Date:	8/20/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC										
OSW-8270D										
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	8.6	ug/l	---		ND	13	ug/l	---
14-Pentadecenoic acid - TIC	17351-34-7									
2,2'-oxybis[1-chloropropane]	108-60-1	ND	8.6	ug/l	---		ND	13	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	8.6	ug/l	---		ND	13	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	8.6	ug/l	---		ND	13	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	8.6	ug/l	---		ND	13	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	8.6	ug/l	---		ND	13	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	8.6	ug/l	---		ND	13	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	22	ug/l	---		ND	31	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	8.6	ug/l	---		ND	13	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	8.6	ug/l	---		ND	13	ug/l	---
2-Chloronaphthalene	91-58-7	ND	8.6	ug/l	---		ND	13	ug/l	---
2-Chlorophenol	95-57-8	ND	8.6	ug/l	---		ND	13	ug/l	---
2-Methylnaphthalene	91-57-6	ND	1.7	ug/l	---		ND	2.5	ug/l	---
2-Methylphenol	95-48-7	ND	8.6	ug/l	---		ND	13	ug/l	---
2-Nitroaniline	88-74-4	ND	22	ug/l	---		ND	31	ug/l	---
2-Nitrophenol	88-75-5	ND	8.6	ug/l	---		ND	13	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	8.6	ug/l	---		ND	13	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	8.6	ug/l	---		ND	13	ug/l	---
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5									
3-Nitroaniline	99-09-2	ND	22	ug/l	---		ND	31	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	22	ug/l	---		ND	31	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	8.6	ug/l	---		ND	13	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	8.6	ug/l	---		ND	13	ug/l	---
4-Chloroaniline	106-47-8	ND	8.6	ug/l	---		ND	13	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	8.6	ug/l	---		ND	13	ug/l	---
4-Nitroaniline	100-01-6	ND	22	ug/l	---		ND	31	ug/l	---
4-Nitrophenol	100-02-7	ND	22	ug/l	---		ND	31	ug/l	---
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3									
9-Octadecenamide, (Z)- - TIC	301-02-0									
9-Octadecenoic acid, (E)- - TIC	112-79-8									
Acenaphthene	83-32-9	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Acenaphthylene	208-96-8	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Acetophenone	98-86-2	ND	8.6	ug/l	---		ND	13	ug/l	---
Anthracene	120-12-7	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Atrazine	1912-24-9	ND	8.6	ug/l	---		ND	13	ug/l	---
Benzaldehyde	100-52-7	ND	8.6	ug/l	---		ND	13	ug/l	---
Benzenesulfonamide, N-butyl- - TIC	3622-84-2									
Benzo[g,h,i]perylene	191-24-2	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	8.6	ug/l	---		ND	13	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	8.6	ug/l	---		ND	13	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	8.6	ug/l	---		ND	13	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	8.6	ug/l	---		ND	13	ug/l	---
Caprolactam	105-60-2	ND	8.6	ug/l	---		ND	13	ug/l	---
Carbazole	86-74-8	ND	8.6	ug/l	---		ND	13	ug/l	---
Cholestan-3-ol, 4-methyl-, (3.beta.,4.al - TIC	3903-57-9	3.7	---	ug/l	NJ					
Chrysene	218-01-9	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	8.6	ug/l	---		ND	13	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	8.6	ug/l	---		ND	13	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Dibenzofuran	132-64-9	ND	8.6	ug/l	---		ND	13	ug/l	---
Diethyl phthalate	84-66-2	ND	8.6	ug/l	---		ND	13	ug/l	---
Diethyltoluamide - TIC	134-62-3									
Dimethyl phthalate	131-11-3	ND	8.6	ug/l	---		ND	13	ug/l	---
Diphenyl	92-52-4	ND	8.6	ug/l	---		ND	13	ug/l	---
Eicosane - TIC	112-95-8									
Fluoranthene	206-44-0	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Fluorene	86-73-7	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	8.6	ug/l	---		ND	13	ug/l	---
Hexachloroethane	67-72-1	ND	8.6	ug/l	---		ND	13	ug/l	---
Hexadeca-2,6,10,14-tetraen-1-ol, 3,7,11, - TIC	7614-21-3									
Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Isophorone	78-59-1	ND	8.6	ug/l	---		ND	13	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	8.6	ug/l	---		ND	13	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	8.6	ug/l	---		ND	13	ug/l	---
Naphthalene	91-20-3	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Nitrobenzene	98-95-3	ND	8.6	ug/l	---		ND	13	ug/l	---
Nonanoic acid - TIC	112-05-0									
Octadecanoic acid - TIC	57-11-4									
Oleic Acid - TIC	112-80-1	5.0	---	ug/l	NJ		24	---	ug/l	NJ
Phenanthrene	85-01-8	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Phenol	108-95-2	ND	8.6	ug/l	---		ND	13	ug/l	---
Pyrene	129-00-0	ND	1.7	ug/l	---		ND	2.5	ug/l	---
Tetradecanoic acid - TIC	544-63-8	4.2	---	ug/l	NJ					
Tridecanoic acid - TIC	638-53-9									
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0						4.9	---	ug/l	NJ

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	PMP-Pond-082015				RW-10A (51-61)-082015			
		Lab Sample ID:	490857798				490857799			
		Sample Date:	8/20/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim									
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other									
OSW-8082A									
PCB-1016	12674-11-2	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1221	11104-28-2	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1232	11141-16-5	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1242	53469-21-9	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1248	12672-29-6	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1254	11097-69-1	ND	0.46	ug/l	---	ND	0.46	ug/l	---
PCB-1260	11096-82-5	ND	0.46	ug/l	---	ND	0.46	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.46	ug/l	---	ND	0.46	ug/l	---
Metals									
OSW-6020A									
Aluminum	7429-90-5	0.028	0.020	mg/l	---	ND	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.0016	0.0020	mg/l	J	ND	0.0020	mg/l	---
Arsenic	7440-38-2	ND	0.0020	mg/l	---	0.0021	0.0020	mg/l	---
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	0.0015	0.0020	mg/l	J
Barium	7440-39-3	0.086	0.0020	mg/l	---	0.016	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.086	0.0020	mg/l	---	0.014	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	20.5	1.0	mg/l	---	61.4	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	19.0	1.0	mg/l	---	66.3	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	0.00081	0.0020	mg/l	J
Cobalt	7440-48-4	ND	0.0020	mg/l	---	0.0038	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	0.0048	0.0020	mg/l	---
Copper	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	0.0015	0.0020	mg/l	J
Iron	7439-89-6	3.8	0.025	mg/l	---	0.70	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.70	0.025	mg/l	---	0.33	0.025	mg/l	---
Lead	7439-92-1	0.00058	0.0020	mg/l	J	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	3.5	1.0	mg/l	---	14.6	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	3.3	1.0	mg/l	---	16.2	1.0	mg/l	---
Manganese	7439-96-5	0.097	0.0020	mg/l	---	2.1	0.020	mg/l	---
Manganese - Dissolved	7439-96-5	0.056	0.0020	mg/l	---	3.0	0.010	mg/l	---
Nickel	7440-02-0	ND	0.0020	mg/l	---	0.029	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.00089	0.0020	mg/l	J	0.015	0.0020	mg/l	---
Potassium	7440-09-7	5.7	1.0	mg/l	---	3.0	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	5.2	1.0	mg/l	---	3.0	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	2.4	1.0	mg/l	---	27.6	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	2.3	1.0	mg/l	---	16.7	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0015	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0011	0.0020	mg/l	UB	0.00090	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	0.049	0.025	mg/l	---
OSW-7470A									
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry									
OSW-9012B									
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A									
Chloride	16887-00-6	1.61	1.00	mg/l	---	2.61	1.00	mg/l	---
Sulfate	14808-79-8	ND	1.00	mg/l	---	36.2	1.00	mg/l	---
Prep									
APHA-2320B									
Bicarbonate Alkalinity as CaCO3	E-14508	74.9	10.0	mg/l	---	207	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	74.9	10.0	mg/l	---	207	10.0	mg/l	---

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85779-1

		Sample Name:	SW-PMB-02-082015				RW-8 (204-214)-082015				TB-11-082115				SW-PMB-01-082015				SW-03-082015				SW-MRB-03-082015				SW-MRB-02-082015				SW-MRB-01-082015				SW-MRB-00-082015				PMP-Pond-082015				RW-10A (51-61)-082015			
		Lab Sample ID:	490857791				490857910				490857911				490857792				490857793				490857794				490857795				490857796				490857797				490857798				490857799			
		Sample Date:	8/20/2015				8/20/2015				8/21/2015				8/20/2015				8/20/2015				8/20/2015				8/20/2015				8/20/2015				8/20/2015				8/20/2015				8/20/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																																														
OSW-8260C																																														
Acetone	67-64-1	ND	25	ug/l	UJ	4.1	25	ug/l	UB					ND	25	ug/l	UJ	ND	25	ug/l	UJ	ND	25	ug/l	UJ	ND	25	ug/l	UJ	ND	25	ug/l	UJ	ND	25	ug/l	UJ	9.0	25	ug/l	UB				
Bromomethane	74-83-9	ND	1.0	ug/l	UJ									ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ								
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UB	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
GC/MS SVOC																																														
OSW-8270D																																														
14-Pentadecenoic acid - TIC	17351-34-7					23	---	ug/l	NJ																																					
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5					22	---	ug/l	NJ																																					
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3					5.8	---	ug/l	NJ																																					
9-Octadecenamide, (Z)- - TIC	301-02-0					4.3	---	ug/l	NJ																																					
9-Octadecenoic acid, (E)- - TIC	112-79-8																	3.2	---	ug/l	NJ																									
Benzenesulfonamide, N-butyl- - TIC	3622-84-2					37	---	ug/l	NJ																																					
Cholestan-3-ol, 4-methyl-, (3.beta.,4.al - TIC	3903-57-9																																					3.7	---	ug/l	NJ					
Diethyltoluamide - TIC	134-62-3																																	17	---	ug/l	NJ									
Eicosane - TIC	112-95-8					3.1	---	ug/l	NJ																																					
Hexadeca-2,6,10,14-tetraen-1-ol, 3,7,11, - TIC	7614-21-3					3.1	---	ug/l	NJ																																					
Nonanoic acid - TIC	112-05-0					69	---	ug/l	NJ																																					
Octadecanoic acid - TIC	57-11-4													3.0	---	ug/l	NJ					3.8	---	ug/l	NJ																					
Oleic Acid - TIC	112-80-1																									5.8	---	ug/l	NJ									5.0	---	ug/l	NJ	24	---	ug/l	NJ
Tetradecanoic acid - TIC	544-63-8					6.9	---	ug/l	NJ																													4.2	---	ug/l	NJ					
Tridecanoic acid - TIC	638-53-9													4.8	---	ug/l	NJ									4.8	---	ug/l	NJ																	
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0																																									4.9	---	ug/l	NJ
Metals																																														
OSW-6020A																																														
Selenium	7782-49-2													0.00062	0.0020	mg/l	UB					0.00097	0.0020	mg/l	UB	0.00093	0.0020	mg/l	UB					0.00062	0.0020	mg/l	UB								
Sodium	7440-23-5																	284	1.0	mg/l	E																								
Vanadium	7440-62-2	0.0015	0.0020	mg/l	UB	0.0014	0.0020	mg/l	UB					0.0016	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB	0.0025	0.0020	mg/l	B	0.0027	0.0020	mg/l	B	0.0032	0.0020	mg/l	B	0.0015	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0011	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB					0.00090	0.0020	mg/l	UB	0.00092	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB	0.0010	0.0020	mg/l	UB	0.0013	0.0020	mg/l	UB	0.0019	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB	0.00090	0.0020	mg/l	UB

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S) and LAB CORRESPONDENCES

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
85779

TestAmerica
The LEADER in ENVIRONMENTAL TESTING

09/21/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Ca	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filter)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
				Preservation Code:																		
1	SW-PMB-02-082015	8/20/15	09:30	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
2	SW-PMB-01-082015	8/20/15	10:10	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
3	SW-03-082015	8/20/15	11:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
4	SW-MRB-03-082015	8/20/15	11:40	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
5	SW-MRB-02-082015	8/20/15	12:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
6	SW-MRB-01-082015	8/20/15	14:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
7	SW-MRB-00-082015	8/20/15	15:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
8	PMP Pond-082015	8/20/15	16:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
9	RW-10A(51-61)-082015	8/20/15	09:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
10	RW-8(204-214)-082015	8/20/15	14:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	H	✓	H	H					Limited Sample Volume, please
11	TB-11-082115	8/21/15	—	—	Water	N	N	✓	✓													analyze if sufficient volume available

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	8/21/15 830	Cornerstone	James Thiessen	8/21/15 830	TA
James Thiessen	8-21-15 1135	TA	[signature]	8/21/15 1135	TABd
[signature]	8/21/15 1900	TABd	[signature]	8-22-15 1045	TAN

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 0.1

From: Gartner, Cathy <Cathy.Gartner@testamericainc.com>
Sent: Monday, October 12, 2015 12:04 PM
To: Jim Tomalia
Cc: Brown, Shali
Subject: RE: FORD Ringwood PM

Got it.

Cathy Gartner
Project Manager - Nashville
615-301-5041

From: Jim Tomalia [mailto:jtomalia@cadenaco.com]
Sent: Monday, October 12, 2015 10:58 AM
To: Gartner, Cathy
Cc: Brown, Shali
Subject: RE: FORD Ringwood PM

Thanks Cathy,
One more level 4 reviewed – 490-85779-1 and have a couple more questions:

CYANIDE - SAMPLE -006 - RAW DATA INDICATES RESULT OF 0.000845 (<0.007) BUT REPORTED RESULT WAS 0.0084? Analysis date 8/25

DISSOLVED MERCURY - SAMPLE RAW DATA NOT REPORTED - DUPLICATE OF 8/25 RUN REPORTED INSTEAD.

Thanks again for your help.

Jim Tomalia
CADENA Inc.
Senior Environmental Compliance Specialist
1099 Highland Drive, Suite E
Ann Arbor, MI 48108
(517) 819-0356 (cell)

From: Gartner, Cathy [mailto:Cathy.Gartner@testamericainc.com]
Sent: Monday, October 12, 2015 11:54 AM
To: Jim Tomalia <jtomalia@cadenaco.com>
Cc: Brown, Shali <Shali.Brown@testamericainc.com>
Subject: RE: FORD Ringwood PM

Hi, Jim,

I will pass this on to the lab.

I did get your last 2 e-mails as well about the additional issues.

From: Gartner, Cathy <Cathy.Gartner@testamericainc.com>
Sent: Monday, October 12, 2015 4:34 PM
To: Jim Tomalia
Cc: Brown, Shali
Subject: Information

Follow Up Flag: Follow up
Flag Status: Completed

Jim,

I have a little bit of information for you.

490-84924 – 8270 The amount used for extraction was 950 ml which gives a prep factor of 1.052. Multiply by raw result 3.44 for final calculation = 3.6.

490-58779-06 – Cyanide - The instrument/ raw data records the final result to the 4th exponent During the upload the data was transferred to TALS as the 3rd exponent. Result has been changed from 0.00845 to 0.000845. We will be getting you revised reports on this one.

The inorganics Operations manager is looking at the metals data. So far, all of the raw data has been in the Level 4 reports.

For example - Job 85779 Dissolved Mercury – pages 20153-57.

He is going to be working on pulling all of those numbers for you.

Cathy

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback

Cathy Gartner
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Drive
Nashville, TN 37204
Tel 615-301-5041 | Fax 615-726-3404
www.testamericainc.com

E-Mail Date: 2015-10-27
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-86046-1

PREPARED BY:
CADENA, INC.
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Date: 2015-10-27
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ATTACHMENT A CHAIN OF CUSTODY DOCUMENT(S)

1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-86046-1	8/25-26/2015	8/27/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM

GCMS VOC Continuing Calibration Verification standards CCV 279129/2 analyzed on 9/4 had multiple responses outside of laboratory control limits. High bias outliers did not have an effect on client sample data or were not associated with target analytes for this submittal. Low bias recoveries were observed for target analyte methyl acetate. All client sample methyl acetate and results should be considered to be estimated and qualified with UJ flags if non-detect and J flags if detected based on this low bias CCV responses.

CCV 279465/2 analyzed on 9/5 was used to calculate re-analysis results for client samples -001 and -003. This CCV also had multiple outliers biased high and low but was acceptable for the reduces list target analytes associated with this sequence (1,1-dichloroethane only) so qualification was not required based on these CCV response outliers.

GCMS VOC-SIM Continuing Calibration Verification standard 278757/2 had an outlier biased high for 1,4-dioxane and 1 out of 4 surrogates. Client samples -001, -002, -003 and -005 1,4-dioxane results should be considered to be estimated and qualified with J flags based on this high bias CCV response outlier.

GCMS SVOC and SIM

GCMS SVOC sample results for 2,4-dinitrophenol were based on an initial calibration linear curve that has poor linearity for the concentration levels below the lowest concentration standard in the curve (2mg/L). This is reflected by the relatively similar results (about 6ug/l) for this analyte in spite of instrument responses that vary by over 10 times. All sample results for this analyte are already J flagged as estimated due to being detected below the RL (MDL=5.9ug/l) but qualifier code has been revised to BCL indicating that results are below reliable calibration levels so should be considered to be estimated with the potential for significant high bias.

GCMS SVOC-SIM sample re-extractions were performed outside of the referenced holding time so these results should be considered to be estimated and qualified with J flags if detected and UJ flags if non-detect. Note: these re-analysis results are not present in database so qualified data was not reported in ARS table associated with this validation report.

PCB

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

METALS

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

INORGANICS

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:

GCMS VOC

No additional observations to report.

GCMS VOC-SIM

ICV for sequence 277064 on 8/28 were reported on form VII as outliers based on known spike values reported. Verification with laboratory indicated that the known spike values should have been 10 and 0.5 (instead of 2000/100) as was historically reported for other sequences to these ICV recoveries were considered to be acceptable when compared to these historical values.

GCMS SVOC

Samples -002, -003, -005 were received at a pH of 12 according to the laboratory submittal prep log. This is outside of recommended preservation range for this analysis but sample pH was adjusted prior to sample prep so qualifications were not applied based on this preservation non-conformance.

GCMS SVOC-SIM

Samples -001, -002, -003, -005 were received at a pH of 11 according to the laboratory submittal prep log. This is outside of recommended preservation range for this analysis but sample pH was adjusted prior to sample prep so qualifications were not applied based on this preservation non-conformance.

METALS

Serial dilution sample -002 outliers (Barium, Calcium, Potassium, Sodium and Vanadium) noted in raw data were considered to be acceptable based on re-calculation of raw data so no qualification was required based on serial dilution outliers for this submittal. PDS results were either acceptable or not performed using a sample from this submittal so qualification was not required based on PDS QC results. CRQL responses were consistently high for Potassium but acceptable for all remaining elements.

PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not result in qualification of final client sample results.

Sample RW-2 (452-462)-082515 did not have sufficient sample volume available to be analyzed for PCB analysis.

RAW DATA NOT INCLUDED IN ORIGINAL LAB LEVEL 4 DATA PACKAGE:

TOTAL and DISSOLVED MERCURY – raw data reported did not include information specific to samples from this submittal. (Received from lab 2015-10-27).

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank had a detection below the RL for acetone. Client sample -003 acetone result should be considered to be non-detect at the RL and qualified with a UB flag.

GCMS-SIM VOC QC batch 278757 CCV response outliers as noted in the laboratory submittal case narrative were not used to qualify results as part of this level 2 data package review.

GCMS-SIM and GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

GCMS-SIM VOC sample -001 surrogate recoveries were outliers biased high for 1 out of 4 surrogates. Client

sample -001 detected results should be considered to be estimated and qualified with J flags. Non-detect results do not require qualification.

GCMS VOC QC batch 279129 LCS recoveries were outliers biased high for cyclohexane, 1,1-dichloroethane and cis-1,2-dichloroethylene. Qualification of client sample results was not required based on these high bias QC outliers.

GCMS VOC QC batch 279465 method blank had a detection below the RL for methylene chloride. Qualification of client sample results was not required based on this method blank detection.

GCMS VOC sample -002 MS recovery only was an outlier biased high for cyclohexane. Qualification of client sample results was not required based on this QC outlier alone.

PCB sample -002 analysis was not performed due to insufficient sample volume available according to the laboratory submittal case narrative.

GCMS VOC QC batch 279465 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

GCMS SVOC QC batch 277997 LCS recoveries were outliers biased high for benzaldehyde. Qualification of client sample results was not required based on this high bias QC outlier. Surrogates were outliers biased high for 1 out of 2 acid fraction surrogates in the QC batch LCS and method blank but qualification was not required based on these QC outliers alone.

GCMS-SIM SVOC QC batch 278972 LCS recoveries were outliers biased high along with the LCS/LCSduplicate RPD outliers for benzo(a)anthracene, benzo(a)pyrene and benzo(b)fluoranthene. QC batch 277972 LCS/LCSduplicate RPD only was an outlier for pentachlorophenol. Qualification of client sample results was not required based on these high bias QC outliers. QC batch 278994 LCS/LCSduplicate RPD's only were outliers for these sample analytes and also did not result in qualification for client sample results.

Metals method blanks had detections below the RL in QC batch 277068 for dissolved manganese and dissolved vanadium and in QC batch 277578 for total vanadium. Client samples -001, -003, -005 dissolved vanadium results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -003 and -005 total vanadium results should be considered to be non-detect at the concentration reported and qualified with B flags.

Metals sample -002 MS/MSD recoveries were not considered to be statistically reliable due to elevated levels of target analyte in the original sample matrix relative to the amount spiked (4X rule) so were not used to qualify results for total and dissolved calcium, potassium and sodium.

Cyanide sample -002 MS/MSD recoveries were outliers biased low. Client sample -002 cyanide results should be considered to be estimated and qualified with a UJ flag.

Chloride and Sulfate sample -002 MS/MSD recoveries were outliers biased low. Client sample -002 chloride and sulfate results should be considered to be estimated and qualified with J flags.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.
CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6°C after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 86046-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	Mercury (Manual Cold Vapor)(D)	Mercury (Manual Cold Vapor)	TOTAL AND AMENABLE CYANIDE (AUTOMATED COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Inorganic Anions by IC	Alkalinity Prep
490860461	RW-3DS (155-160)-082515	8/25/2015	8:40:00	X	X	X	X	X	X	X	X	X	X	X	X
490860462	RW-2 (452-462)-082515	8/25/2015	1:30:00	X	X	X	X		X	X	X	X	X	X	X
490860463	Dup-04-082515	8/25/2015	12:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490860464	TB-14-082515	8/26/2015	1:00:00	X	X										
490860465	RW-11D (262-267)-082615	8/26/2015	10:30:00	X	X	X	X	X	X	X	X	X	X	X	X

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-86046-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
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NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-86046-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-86046-1
August 2015

Description

Polychlorinated Biphenyls Data (PCB)
- QC Summary data
  - Surrogate recoveries (form II)
  - Check Sample Recovery data (form III)
  - Method Blank data (form IV)
  - Analytical sequence with RT check (Form VIII)
  - Identification Summary (Form X)
- Sample Data
  - Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Chromatogram
- Standards Data (both columns)
  - Initial Calibration Data External Standard RT Summary (Form VI)
  - Initial Calibration Data Summary with average RF
  - Raw integration data from instrument with manual integrations where applicable
  - ICAL chromatograms
  - Continuing Calibration Data (Form VII) with RT Summaries
  - ICV raw integration and chromatograms
  - CCV raw integration data from instrument
  - CCV chromatogram
- Raw QC Data
  - LCS/LCSD sample data report and integration and chromatograms
  - Method blank integration and chromatograms
- Miscellaneous Data
  - Sequence table (run log)
  - PCB Batch Worksheet

HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
- Raw Data and Data Summaries for:
  - LCS/LCSD (form III)
  - MS/MSD (form III)
  - METHOD BLANKS (Form IV)
  - SAMPLE DATA (Form I)
    - Raw instrument data and chromatography
    - Manual Integration (if applicable)
  - ICAL (Form VI)
    - Raw instrument data and chromatography
    - Manual Integration (if applicable)
  - ICAL (Form VII)
    - Raw instrument data and chromatography
    - Manual Integration (if applicable)
  - QC DATA (Form I)
    - Raw instrument data and chromatography
  - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-86046-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 86046-1

		Sample Name:	RW-3DS (155-160)-082515				RW-2 (452-462)-082515				Dup-04-082515			
		Lab Sample ID:	490860461				490860462				490860463			
		Sample Date:	8/25/2015				8/25/2015				8/25/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	1.0	1.0	ug/l	---	ND	1.0	ug/l	---	1.0	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Propene, 2-methyl- - TIC	115-11-7	3.3	---	ug/l	NJ	5.2	---	ug/l	NJ	5.5	---	ug/l	NJ
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Butanone, 3,3-dimethyl- - TIC	75-97-8												
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	16	25	ug/l	J	3.0	25	ug/l	UB
Benzene	71-43-2	ND	1.0	ug/l	---	0.24	1.0	ug/l	J	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	11	1.0	ug/l	---	1.8	1.0	ug/l	---	12	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Cysteic acid - TIC	1000131-23-1	8.6	---	ug/l	NJ								
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	0.19	1.0	ug/l	J	ND	1.0	ug/l	---
Ethylbenzene	100-41-4	0.26	1.0	ug/l	J	ND	1.0	ug/l	---	0.23	1.0	ug/l	J
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isobutyl alcohol - TIC	78-83-1	38	50	ug/l	J					47	50	ug/l	J
Isopropyl alcohol - TIC	67-63-0					62	50	ug/l	---				
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	0.30	1.0	ug/l	J	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Toluene	108-88-3	0.60	1.0	ug/l	J	0.71	1.0	ug/l	J	0.48	1.0	ug/l	J
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2					3.1	---	ug/l	NJ				
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	38	10	ug/l	J	4.7	10	ug/l	J	36	10	ug/l	J
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 86046-1

		Sample Name:	RW-3DS (155-160)-082515				RW-2 (452-462)-082515				Dup-04-082515			
		Lab Sample ID:	490860461				490860462				490860463			
		Sample Date:	8/25/2015				8/25/2015				8/25/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	1,4-Dioxane - TIC	123-91-1	9.9	10	ug/l	J					9.6	10	ug/l	J
	1-Heptadecene - TIC	6765-39-5												
	17-Pentatriacontene - TIC	6971-40-0												
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dinitrophenol	51-28-5	6.6	25	ug/l	J	6.5	25	ug/l	J	6.8	25	ug/l	J
	2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Mercaptobenzothiazole - TIC	149-30-4	7.6	---	ug/l	NJ					8.0	---	ug/l	NJ
	2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,5-di-tert-Butyl-4-hydroxybenzaldehyde - TIC	1620-98-0	9.5	---	ug/l	NJ					9.5	---	ug/l	NJ
	3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5	8.8	---	ug/l	NJ	18	---	ug/l	NJ	10	---	ug/l	NJ
	3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3	20	---	ug/l	NJ	12	---	ug/l	NJ	22	---	ug/l	NJ
	9,12-Octadecadienoic acid (Z,Z)- - TIC	60-33-3												
	9-Octadecenoic acid, (E)- - TIC	112-79-8	18	---	ug/l	NJ					19	---	ug/l	NJ
	Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzeneacetic acid - TIC	103-82-2					10	---	ug/l	NJ				
	Benzenesulfonamide, N-butyl- - TIC	3622-84-2	7.6	---	ug/l	NJ					8.2	---	ug/l	NJ
	Benzoic Acid - TIC	65-85-0												
	Benzoic acid, 2,4-dimethyl- - TIC	611-01-8	5.5	---	ug/l	NJ								
	Benzoic acid, 2,5-dimethyl- - TIC	610-72-0									6.1	---	ug/l	NJ
	Benzoic acid, 3,5-bis(1,1-dimethylethyl) - TIC	1421-49-4									5.8	---	ug/l	NJ
	Benzothiazole - TIC	95-16-9	4.5	---	ug/l	NJ								
	Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Cyclohexanone, 3,3,5-trimethyl- - TIC	873-94-9					5.1	---	ug/l	NJ				
	Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyltoluamide - TIC	134-62-3	5.6	---	ug/l	NJ					8.0	---	ug/l	NJ
	Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Ethanol, 1-(2-butoxyethoxy)- - TIC	54446-78-5												
	Ethanone, 1-(2-hydroxyphenyl)- - TIC	118-93-4					3.6	---	ug/l	NJ				
	Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Heptadecane, 2,6,10,15-tetramethyl- - TIC	54833-48-6									4.7	---	ug/l	NJ
	Heptadecanoic acid - TIC	506-12-7												
	Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexadecanoic acid, butyl ester - TIC	111-06-8									11	---	ug/l	NJ
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	n-Hexadecanoic acid - TIC	57-10-3	8.7	---	ug/l	NJ	5.0	---	ug/l	NJ				
	N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Nonanoic acid - TIC	112-05-0					5.5	---	ug/l	NJ				
	Octadecanoic acid - TIC	57-11-4	11	---	ug/l	NJ								
	Oleic Acid - TIC	112-80-1					19	---	ug/l	NJ				
	Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Phenol	108-95-2	3.0	10	ug/l	J	10	10	ug/l	---	2.7	10	ug/l	J
	Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Tetradecanoic acid - TIC	544-63-8					4.2	---	ug/l	NJ				
	Tridecanoic acid - TIC	638-53-9									6.3	---	ug/l	NJ
	Unknown - TIC	Tic1					6.7	---	ug/l	J				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 86046-1

		Sample Name:	RW-3DS (155-160)-082515				RW-2 (452-462)-082515				Dup-04-082515			
		Lab Sample ID:	490860461				490860462				490860463			
		Sample Date:	8/25/2015				8/25/2015				8/25/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim														
	Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
	Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
	Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
	Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
	Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
	N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
	Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other														
OSW-8082A														
	PCB-1016	12674-11-2	ND	0.50	ug/l	---					ND	0.50	ug/l	---
	PCB-1221	11104-28-2	ND	0.50	ug/l	---					ND	0.50	ug/l	---
	PCB-1232	11141-16-5	ND	0.50	ug/l	---					ND	0.50	ug/l	---
	PCB-1242	53469-21-9	ND	0.50	ug/l	---					ND	0.50	ug/l	---
	PCB-1248	12672-29-6	ND	0.50	ug/l	---					ND	0.50	ug/l	---
	PCB-1254	11097-69-1	ND	0.50	ug/l	---					ND	0.50	ug/l	---
	PCB-1260	11096-82-5	ND	0.50	ug/l	---					ND	0.50	ug/l	---
	Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---					ND	0.50	ug/l	---
Metals														
OSW-6020A														
	Aluminum	7429-90-5	0.082	0.020	mg/l	---	0.10	0.020	mg/l	---	0.077	0.020	mg/l	---
	Aluminum - Dissolved	7429-90-5	0.061	0.10	mg/l	J	0.14	0.10	mg/l	---	0.055	0.10	mg/l	J
	Antimony	7440-36-0	0.00051	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Antimony - Dissolved	7440-36-0	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
	Arsenic	7440-38-2	0.012	0.0020	mg/l	---	0.0054	0.0020	mg/l	---	0.012	0.0020	mg/l	---
	Arsenic - Dissolved	7440-38-2	0.014	0.010	mg/l	---	0.0056	0.010	mg/l	J	0.012	0.010	mg/l	---
	Barium	7440-39-3	0.013	0.0020	mg/l	---	0.059	0.0020	mg/l	---	0.013	0.0020	mg/l	---
	Barium - Dissolved	7440-39-3	0.018	0.010	mg/l	---	0.070	0.010	mg/l	---	0.016	0.010	mg/l	---
	Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Beryllium - Dissolved	7440-41-7	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
	Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
	Cadmium - Dissolved	7440-43-9	ND	0.0050	mg/l	---	ND	0.0050	mg/l	---	ND	0.0050	mg/l	---
	Calcium	7440-70-2	46.6	1.0	mg/l	---	132	50.0	mg/l	---	45.2	1.0	mg/l	---
	Calcium - Dissolved	7440-70-2	55.6	5.0	mg/l	---	145	5.0	mg/l	---	49.1	5.0	mg/l	---
	Chromium	7440-47-3	0.0035	0.0020	mg/l	---	0.00058	0.0020	mg/l	J	0.0032	0.0020	mg/l	---
	Chromium - Dissolved	7440-47-3	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
	Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Cobalt - Dissolved	7440-48-4	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
	Copper	7440-50-8	ND	0.0020	mg/l	---	0.0010	0.0020	mg/l	J	ND	0.0020	mg/l	---
	Copper - Dissolved	7440-50-8	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
	Iron	7439-89-6	0.012	0.025	mg/l	J	0.021	0.025	mg/l	J	0.027	0.025	mg/l	---
	Iron - Dissolved	7439-89-6	ND	0.13	mg/l	---	ND	0.13	mg/l	---	ND	0.13	mg/l	---
	Lead	7439-92-1	ND	0.0020	mg/l	---	0.00020	0.0020	mg/l	J	ND	0.0020	mg/l	---
	Lead - Dissolved	7439-92-1	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
	Magnesium	7439-95-4	ND	1.0	mg/l	---	ND	1.0	mg/l	---	ND	1.0	mg/l	---
	Magnesium - Dissolved	7439-95-4	ND	5.0	mg/l	---	ND	5.0	mg/l	---	ND	5.0	mg/l	---
	Manganese	7439-96-5	0.00059	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.00080	0.0020	mg/l	J
	Manganese - Dissolved	7439-96-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
	Nickel	7440-02-0	0.0056	0.0020	mg/l	---	0.0083	0.0020	mg/l	---	0.0054	0.0020	mg/l	---
	Nickel - Dissolved	7440-02-0	0.0037	0.010	mg/l	J	0.0088	0.010	mg/l	J	0.0035	0.010	mg/l	J
	Potassium	7440-09-7	54.8	1.0	mg/l	---	103	50.0	mg/l	---	51.7	1.0	mg/l	---
	Potassium - Dissolved	7440-09-7	56.0	5.0	mg/l	---	129	5.0	mg/l	---	52.4	5.0	mg/l	---
	Selenium	7782-49-2	0.0042	0.0020	mg/l	---	0.0036	0.0020	mg/l	---	0.0039	0.0020	mg/l	---
	Selenium - Dissolved	7782-49-2	0.0031	0.010	mg/l	J	0.0049	0.010	mg/l	J	0.0041	0.010	mg/l	J
	Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Silver - Dissolved	7440-22-4	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
	Sodium	7440-23-5	219	50.0	mg/l	---	371	50.0	mg/l	---	221	50.0	mg/l	---
	Sodium - Dissolved	7440-23-5	220	5.0	mg/l	---	382	5.0	mg/l	---	209	5.0	mg/l	---
	Thallium	7440-28-0	0.00070	0.0020	mg/l	J	0.00051	0.0020	mg/l	J	0.00024	0.0020	mg/l	J
	Thallium - Dissolved	7440-28-0	0.0012	0.010	mg/l	J	0.0029	0.010	mg/l	J	ND	0.010	mg/l	---
	Vanadium	7440-62-2	0.0058	0.0020	mg/l	---	0.040	0.0020	mg/l	---	0.0056	0.0020	mg/l	B
	Vanadium - Dissolved	7440-62-2	0.0085	0.010	mg/l	UB	0.040	0.010	mg/l	---	0.0083	0.010	mg/l	UB
	Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
	Zinc - Dissolved	7440-66-6	ND	0.13	mg/l	---	ND	0.13	mg/l	---	ND	0.13	mg/l	---
OSW-7470A														
	Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
	Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry														
OSW-9012B														
	Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	UJ	ND	0.010	mg/l	---
OSW-9056A														
	Chloride	16887-00-6	32.2	5.00	mg/l	---	601	5.00	mg/l	J	31.4	5.00	mg/l	---
	Sulfate	14808-79-8	464	5.00	mg/l	---	167	5.00	mg/l	J	467	5.00	mg/l	---
Prep														
APHA-2320B														
	Bicarbonate Alkalinity as CaCO3	E-14508	ND	10.0	mg/l	---	ND	10.0	mg/l	---	ND	10.0	mg/l	---
	Total Alkalinity as CaCO3	E-14506	92.1	10.0	mg/l	---	127	10.0	mg/l	---	104	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 86046-1

		Sample Name:	TB-14-082515				RW-11D (262-267)-082615			
		Lab Sample ID:	490860464				490860465			
		Sample Date:	8/26/2015				8/26/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC										
OSW-8260C										
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---		ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---		ND	1.0	ug/l	---
1-Propene, 2-methyl- - TIC	115-11-7									
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---		29	50	ug/l	J
2-Butanone, 3,3-dimethyl- - TIC	75-97-8						3.1	---	ug/l	NJ
2-Hexanone	591-78-6	ND	10	ug/l	---		ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---		ND	10	ug/l	---
Acetone	67-64-1	3.0	25	ug/l	J		45	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---		1.6	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---		63	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---		0.22	1.0	ug/l	J
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---		ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---		ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---		ND	5.0	ug/l	---
Cysteic acid - TIC	1000131-23-1									
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Ethylbenzene	100-41-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Isobutyl alcohol - TIC	78-83-1									
Isopropyl alcohol - TIC	67-63-0									
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ		ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---		ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---		ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---		ND	6.0	ug/l	---
Toluene	108-88-3	ND	1.0	ug/l	---		ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---		ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Unknown - TIC	Tic2									
Vinyl chloride	75-01-4	ND	1.0	ug/l	---		ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---		ND	3.0	ug/l	---
OSW-8260CSim										
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---		ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---		ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---		26	10	ug/l	J
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---		ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 86046-1

		Sample Name:	TB-14-082515				RW-11D (262-267)-082615			
		Lab Sample ID:	490860464				490860465			
		Sample Date:	8/26/2015				8/26/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC										
OSW-8270D										
1,2,4,5-Tetrachlorobenzene	95-94-3						ND	10	ug/l	---
1,4-Dioxane - TIC	123-91-1						9.5	10	ug/l	J
1-Heptadecene - TIC	6765-39-5						6.7	---	ug/l	NJ
17-Pentatriacontene - TIC	6971-40-0						7.7	---	ug/l	NJ
2,2'-oxybis[1-chloropropane]	108-60-1						ND	10	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2						ND	10	ug/l	---
2,4,5-Trichlorophenol	95-95-4						ND	10	ug/l	---
2,4,6-Trichlorophenol	88-06-2						ND	10	ug/l	---
2,4-Dichlorophenol	120-83-2						ND	10	ug/l	---
2,4-Dimethylphenol	105-67-9						ND	10	ug/l	---
2,4-Dinitrophenol	51-28-5						6.6	25	ug/l	J
2,4-Dinitrotoluene	121-14-2						ND	10	ug/l	---
2,6-Dinitrotoluene	606-20-2						ND	10	ug/l	---
2-Chloronaphthalene	91-58-7						ND	10	ug/l	---
2-Chlorophenol	95-57-8						ND	10	ug/l	---
2-Mercaptobenzothiazole - TIC	149-30-4						12	---	ug/l	NJ
2-Methylnaphthalene	91-57-6						ND	2.0	ug/l	---
2-Methylphenol	95-48-7						ND	10	ug/l	---
2-Nitroaniline	88-74-4						ND	25	ug/l	---
2-Nitrophenol	88-75-5						ND	10	ug/l	---
3 & 4 Methylphenol	65794-96-9						ND	10	ug/l	---
3,3'-Dichlorobenzidine	91-94-1						ND	10	ug/l	---
3,5-di-tert-Butyl-4-hydroxybenzaldehyde - TIC	1620-98-0						7.6	---	ug/l	NJ
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5						39	---	ug/l	NJ
3-Nitroaniline	99-09-2						ND	25	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1						ND	25	ug/l	---
4-Bromophenyl phenyl ether	101-55-3						ND	10	ug/l	---
4-Chloro-3-methylphenol	59-50-7						ND	10	ug/l	---
4-Chloroaniline	106-47-8						ND	10	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3						ND	10	ug/l	---
4-Nitroaniline	100-01-6						ND	25	ug/l	---
4-Nitrophenol	100-02-7						ND	25	ug/l	---
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3						78	---	ug/l	NJ
9,12-Octadecadienoic acid (Z,Z)- - TIC	60-33-3						16	---	ug/l	NJ
9-Octadecenoic acid, (E)- - TIC	112-79-8									
Acenaphthene	83-32-9						ND	2.0	ug/l	---
Acenaphthylene	208-96-8						ND	2.0	ug/l	---
Acetophenone	98-86-2						ND	10	ug/l	---
Anthracene	120-12-7						ND	2.0	ug/l	---
Atrazine	1912-24-9						ND	10	ug/l	---
Benzaldehyde	100-52-7						ND	10	ug/l	---
Benzeneacetic acid - TIC	103-82-2									
Benzenesulfonamide, N-butyl- - TIC	3622-84-2									
Benzoic Acid - TIC	65-85-0						8.5	---	ug/l	NJ
Benzoic acid, 2,4-dimethyl- - TIC	611-01-8									
Benzoic acid, 2,5-dimethyl- - TIC	610-72-0									
Benzoic acid, 3,5-bis(1,1-dimethylethyl) - TIC	1421-49-4									
Benzothiazole - TIC	95-16-9									
Benzo[g,h,i]perylene	191-24-2						ND	2.0	ug/l	---
Benzo[k]fluoranthene	207-08-9						ND	2.0	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1						ND	10	ug/l	---
Bis(2-chloroethyl)ether	111-44-4						ND	10	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7						ND	10	ug/l	---
Butyl benzyl phthalate	85-68-7						ND	10	ug/l	---
Caprolactam	105-60-2						ND	10	ug/l	---
Carbazole	86-74-8						ND	10	ug/l	---
Chrysene	218-01-9						ND	2.0	ug/l	---
Cyclohexanone, 3,3,5-trimethyl- - TIC	873-94-9									
Di-n-butyl phthalate	84-74-2						ND	10	ug/l	---
Di-n-octyl phthalate	117-84-0						ND	10	ug/l	---
Dibenz(a,h)anthracene	53-70-3						ND	2.0	ug/l	---
Dibenzofuran	132-64-9						ND	10	ug/l	---
Diethyl phthalate	84-66-2						ND	10	ug/l	---
Diethyltoluamide - TIC	134-62-3									
Dimethyl phthalate	131-11-3						ND	10	ug/l	---
Diphenyl	92-52-4						ND	10	ug/l	---
Ethanol, 1-(2-butoxyethoxy)- - TIC	54446-78-5						27	---	ug/l	NJ
Ethanone, 1-(2-hydroxyphenyl)- - TIC	118-93-4									
Fluoranthene	206-44-0						ND	2.0	ug/l	---
Fluorene	86-73-7						ND	2.0	ug/l	---
Heptadecane, 2,6,10,15-tetramethyl- - TIC	54833-48-6									
Heptadecanoic acid - TIC	506-12-7						8.5	---	ug/l	NJ
Hexachlorocyclopentadiene	77-47-4						ND	10	ug/l	---
Hexachloroethane	67-72-1						ND	10	ug/l	---
Hexadecanoic acid, butyl ester - TIC	111-06-8									
Indeno[1,2,3-cd]pyrene	193-39-5						ND	2.0	ug/l	---
Isophorone	78-59-1						ND	10	ug/l	---
n-Hexadecanoic acid - TIC	57-10-3						19	---	ug/l	NJ
N-Nitrosodi-n-propylamine	621-64-7						ND	10	ug/l	---
N-Nitrosodiphenylamine	86-30-6						ND	10	ug/l	---
Naphthalene	91-20-3						ND	2.0	ug/l	---
Nitrobenzene	98-95-3						ND	10	ug/l	---
Nonanoic acid - TIC	112-05-0						43	---	ug/l	NJ
Octadecanoic acid - TIC	57-11-4						29	---	ug/l	NJ
Oleic Acid - TIC	112-80-1									
Phenanthrene	85-01-8						ND	2.0	ug/l	---
Phenol	108-95-2						2.3	10	ug/l	J
Pyrene	129-00-0						ND	2.0	ug/l	---
Tetradecanoic acid - TIC	544-63-8						7.6	---	ug/l	NJ
Tridecanoic acid - TIC	638-53-9									
Unknown - TIC	Tic1									

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 86046-1

		Sample Name:	TB-14-082515				RW-11D (262-267)-082615			
		Lab Sample ID:	490860464				490860465			
		Sample Date:	8/26/2015				8/26/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim										
	Benzo[a]anthracene	56-55-3					ND	0.050	ug/l	---
	Benzo[a]pyrene	50-32-8					ND	0.050	ug/l	---
	Benzo[b]fluoranthene	205-99-2					ND	0.050	ug/l	---
	Hexachlorobenzene	118-74-1					ND	0.020	ug/l	---
	Hexachlorobutadiene	87-68-3					ND	0.40	ug/l	---
	N-Nitrosodimethylamine	62-75-9					ND	0.80	ug/l	---
	Pentachlorophenol	87-86-5					ND	0.30	ug/l	---
GC Other										
OSW-8082A										
	PCB-1016	12674-11-2					ND	0.50	ug/l	---
	PCB-1221	11104-28-2					ND	0.50	ug/l	---
	PCB-1232	11141-16-5					ND	0.50	ug/l	---
	PCB-1242	53469-21-9					ND	0.50	ug/l	---
	PCB-1248	12672-29-6					ND	0.50	ug/l	---
	PCB-1254	11097-69-1					ND	0.50	ug/l	---
	PCB-1260	11096-82-5					ND	0.50	ug/l	---
	Polychlorinated biphenyls, Total	1336-36-3					ND	0.50	ug/l	---
Metals										
OSW-6020A										
	Aluminum	7429-90-5					0.73	0.020	mg/l	---
	Aluminum - Dissolved	7429-90-5					0.065	0.10	mg/l	J
	Antimony	7440-36-0					ND	0.0020	mg/l	---
	Antimony - Dissolved	7440-36-0					ND	0.010	mg/l	---
	Arsenic	7440-38-2					0.0024	0.0020	mg/l	---
	Arsenic - Dissolved	7440-38-2					ND	0.010	mg/l	---
	Barium	7440-39-3					0.54	0.0020	mg/l	---
	Barium - Dissolved	7440-39-3					0.57	0.010	mg/l	---
	Beryllium	7440-41-7					ND	0.0020	mg/l	---
	Beryllium - Dissolved	7440-41-7					ND	0.010	mg/l	---
	Cadmium	7440-43-9					ND	0.0010	mg/l	---
	Cadmium - Dissolved	7440-43-9					ND	0.0050	mg/l	---
	Calcium	7440-70-2					383	50.0	mg/l	---
	Calcium - Dissolved	7440-70-2					439	5.0	mg/l	---
	Chromium	7440-47-3					0.040	0.0020	mg/l	---
	Chromium - Dissolved	7440-47-3					0.030	0.010	mg/l	---
	Cobalt	7440-48-4					ND	0.0020	mg/l	---
	Cobalt - Dissolved	7440-48-4					ND	0.010	mg/l	---
	Copper	7440-50-8					0.0032	0.0020	mg/l	---
	Copper - Dissolved	7440-50-8					ND	0.010	mg/l	---
	Iron	7439-89-6					0.49	0.025	mg/l	---
	Iron - Dissolved	7439-89-6					ND	0.13	mg/l	---
	Lead	7439-92-1					0.00069	0.0020	mg/l	J
	Lead - Dissolved	7439-92-1					ND	0.010	mg/l	---
	Magnesium	7439-95-4					ND	1.0	mg/l	---
	Magnesium - Dissolved	7439-95-4					ND	5.0	mg/l	---
	Manganese	7439-96-5					0.0063	0.0020	mg/l	---
	Manganese - Dissolved	7439-96-5					ND	0.010	mg/l	---
	Nickel	7440-02-0					0.017	0.0020	mg/l	---
	Nickel - Dissolved	7440-02-0					0.015	0.010	mg/l	---
	Potassium	7440-09-7					117	50.0	mg/l	---
	Potassium - Dissolved	7440-09-7					123	5.0	mg/l	---
	Selenium	7782-49-2					0.0010	0.0020	mg/l	J
	Selenium - Dissolved	7782-49-2					ND	0.010	mg/l	---
	Silver	7440-22-4					ND	0.0020	mg/l	---
	Silver - Dissolved	7440-22-4					ND	0.010	mg/l	---
	Sodium	7440-23-5					210	50.0	mg/l	---
	Sodium - Dissolved	7440-23-5					209	5.0	mg/l	---
	Thallium	7440-28-0					ND	0.0020	mg/l	---
	Thallium - Dissolved	7440-28-0					ND	0.010	mg/l	---
	Vanadium	7440-62-2					0.0024	0.0020	mg/l	B
	Vanadium - Dissolved	7440-62-2					0.0013	0.010	mg/l	UB
	Zinc	7440-66-6					ND	0.025	mg/l	---
	Zinc - Dissolved	7440-66-6					ND	0.13	mg/l	---
OSW-7470A										
	Mercury	7439-97-6					ND	0.00020	mg/l	---
	Mercury - Dissolved	7439-97-6					ND	0.00020	mg/l	---
General Chemistry										
OSW-9012B										
	Cyanide, Total	57-12-5					ND	0.010	mg/l	---
OSW-9056A										
	Chloride	16887-00-6					40.5	1.00	mg/l	---
	Sulfate	14808-79-8					40.6	1.00	mg/l	---
Prep										
APHA-2320B										
	Bicarbonate Alkalinity as CaCO3	E-14508					ND	10.0	mg/l	---
	Total Alkalinity as CaCO3	E-14506					1300	10.0	mg/l	---

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 86046-1

		Sample Name:	RW-3DS (155-160)-082515				RW-2 (452-462)-082515				Dup-04-082515				TB-14-082515				RW-11D (262-267)-082615			
		Lab Sample ID:	490860461				490860462				490860463				490860464				490860465			
		Sample Date:	8/25/2015				8/25/2015				8/25/2015				8/26/2015				8/26/2015			
Analyte	**Cas No.**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																						
OSW-8260C																						
1-Propene, 2-methyl- - TIC	115-11-7		3.3	---	ug/l	NJ	5.2	---	ug/l	NJ	5.5	---	ug/l	NJ								
2-Butanone, 3,3-dimethyl- - TIC	75-97-8																		3.1	---	ug/l	NJ
Acetone	67-64-1										3.0	25	ug/l	UB								
Cysteic acid - TIC	1000131-23-1		8.6	---	ug/l	NJ																
Isobutyl alcohol - TIC	78-83-1		38	50	ug/l	J					47	50	ug/l	J								
Methyl acetate	79-20-9		ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Unknown - TIC	Tic2						3.1	---	ug/l	NJ												
GC/MS SVOC																						
OSW-8260CSim																						
1,4-Dioxane	123-91-1		9.9	10	ug/l	J	4.7	10	ug/l	J	9.6	10	ug/l	J					9.5	10	ug/l	J
OSW-8270D																						
1-Heptadecene - TIC	6765-39-5																		6.7	---	ug/l	NJ
17-Pentatriacontene - TIC	6971-40-0																		7.7	---	ug/l	NJ
2,4-Dinitrophenol	51-28-5		6.6	25	ug/l	J	6.5	25	ug/l	J	6.8	25	ug/l	J					6.6	25	ug/l	J
2-Mercaptobenzothiazole - TIC	149-30-4		7.6	---	ug/l	NJ					8.0	---	ug/l	NJ					12	---	ug/l	NJ
3,5-di-tert-Butyl-4-hydroxybenzaldehyde - TIC	1620-98-0		9.5	---	ug/l	NJ					9.5	---	ug/l	NJ					7.6	---	ug/l	NJ
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5		8.8	---	ug/l	NJ	18	---	ug/l	NJ	10	---	ug/l	NJ					39	---	ug/l	NJ
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3		20	---	ug/l	NJ	12	---	ug/l	NJ	22	---	ug/l	NJ					78	---	ug/l	NJ
9,12-Octadecadienoic acid (Z,Z)- - TIC	60-33-3																		16	---	ug/l	NJ
9-Octadecenoic acid, (E)- - TIC	112-79-8		18	---	ug/l	NJ					19	---	ug/l	NJ								
Benzeneacetic acid - TIC	103-82-2						10	---	ug/l	NJ												
Benzenesulfonamide, N-butyl- - TIC	3622-84-2		7.6	---	ug/l	NJ					8.2	---	ug/l	NJ								
Benzoic Acid - TIC	65-85-0																		8.5	---	ug/l	NJ
Benzoic acid, 2,4-dimethyl- - TIC	611-01-8		5.5	---	ug/l	NJ																
Benzoic acid, 2,5-dimethyl- - TIC	610-72-0										6.1	---	ug/l	NJ								
Benzoic acid, 3,5-bis(1,1-dimethylethyl) - TIC	1421-49-4										5.8	---	ug/l	NJ								
Benzothiazole - TIC	95-16-9		4.5	---	ug/l	NJ																
Cyclohexanone, 3,3,5-trimethyl- - TIC	873-94-9						5.1	---	ug/l	NJ												
Diethyltoluamide - TIC	134-62-3		5.6	---	ug/l	NJ					8.0	---	ug/l	NJ								
Ethanol, 1-(2-butoxyethoxy)- - TIC	54446-78-5																		27	---	ug/l	NJ
Ethanone, 1-(2-hydroxyphenyl)- - TIC	118-93-4						3.6	---	ug/l	NJ												
Heptadecane, 2,6,10,15-tetramethyl- - TIC	54833-48-6										4.7	---	ug/l	NJ								
Heptadecanoic acid - TIC	506-12-7																		8.5	---	ug/l	NJ
Hexadecanoic acid, butyl ester - TIC	111-06-8										11	---	ug/l	NJ								
n-Hexadecanoic acid - TIC	57-10-3		8.7	---	ug/l	NJ	5.0	---	ug/l	NJ									19	---	ug/l	NJ
Nonanoic acid - TIC	112-05-0						5.5	---	ug/l	NJ									43	---	ug/l	NJ
Octadecanoic acid - TIC	57-11-4		11	---	ug/l	NJ													29	---	ug/l	NJ
Oleic Acid - TIC	112-80-1						19	---	ug/l	NJ												
Tetradecanoic acid - TIC	544-63-8						4.2	---	ug/l	NJ									7.6	---	ug/l	NJ
Tridecanoic acid - TIC	638-53-9										6.3	---	ug/l	NJ								
Unknown - TIC	Tic1						6.7	---	ug/l	J												
Metals																						
OSW-6020A																						
Vanadium	7440-62-2										0.0056	0.0020	mg/l	B					0.0024	0.0020	mg/l	B
Vanadium - Dissolved	7440-62-2		0.0085	0.010	mg/l	UB					0.0083	0.010	mg/l	UB					0.0013	0.010	mg/l	UB
General Chemistry																						
OSW-9012B																						
Cyanide, Total	57-12-5						ND	0.010	mg/l	UJ												
OSW-9056A																						
Chloride	16887-00-6						601	5.00	mg/l	J												
Sulfate	14808-79-8						167	5.00	mg/l	J												

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Loc: 490
86046

10/26/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Carrie	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 8456950200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requeste

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2SO3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_ SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filterl)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
				Preservation Code:																	
RW-3DS(155-160)-082515	8/25/15	08:40	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
RW-2(452-462)-082515 MS/MSD	8/25/15	13:30	G	Water	N	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Dup-04-082515	8/25/15	12:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
TB-14-082615	8/26/15	—	—	Water	N	N	✓	✓													
RW-11D(262-267)-082615	8/26/15	10:30	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 8/26/15 1225	Company Cornerstone	Received by: James Thieson	Date/Time: 8/26/15 12:25	Company TA.
Relinquished by: James Thieson	Date/Time: 8/26/15 1615	Company TA	Received by: 4.3/1.9	Date/Time: 8/27/15 1000	Company TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

E-Mail Date: 2015-10-14
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-84924-1

PREPARED BY:
CADENA, INC.
1099 Highland Drive
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Date: 2015-10-14
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ATTACHMENT A CHAIN OF CUSTODY DOCUMENT(S)

1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-84924-1	8/10-11/2015	8/12/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM
GCMS VOC CCVIS 490-273958/2 responses were outliers biased low for bromomethane. Client sample -010 bromomethane results should be considered to be estimated and qualified with a UJ flag. Remaining CCV outliers were either for non-target analytes or were biased high for non-detect sample results.
GCMS SVOC and SIM
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
PCB
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
METALS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
INORGANICS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:
GCMS VOC
CCV/ICV – Sequences had outliers biased high that did not affect client sample results (associated results were either non-detect or outliers were not associated with target analytes).
GCMS VOC-SIM
No additional non-conforming observations to report.
GCMS SVOC
Sample 84924-008 phenol result did not re-calculate to reconcile with reported result within acceptable significant figure requirements. Reported phenol result was 3.6ug/L and recalculated result was 3.44ug/L. Discrepancy due to sample prep factors - reported result was correct.
METALS
CCV – analytical sequence 278731 beryllium response was an outlier high for both total and dissolved beryllium. All associated field sample results were less than the detection limit so qualification was not required based on these high bias QC outliers.
PDS - for sample -005 had recovery outliers biased low for calcium and silver. Calcium PDS was not considered to be reliable due to elevated levels of target analyte in the original sample matrix relative to the amount spiked (4X rule) so was not used to qualify client sample data and silver MS/MSD recoveries for sample -005 were acceptable so qualification was not made based on the low bias PDS recovery.
CRQL's outside of lab criteria biased high did not affect qualification of client sample results.
INFORMATION NOT INCLUDED WITH ORIGINAL LABORATORY LEVEL 4 DATA PACKAGE - ICPMS raw data for the analysis performed on 9/1/2015 was not included with

data package – This information was required only to confirm the total copper result for client sample 84924-011. Received from lab 10/19/2015.
MERCURY raw data for sequence date 08/19/2015 could not be located in data package – two sets of data for sequence date 8/18/2015 were reported. This is required for validation of all total mercury results. Received from lab 10/19/2015.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not affect sample quantitation. There was no ending CCV reported for the sequences evaluated.

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.
The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank was non-detect for all target analytes.

GCMS VOC field blank had detections below the RL for bis-2-ethylhexylphthalate, total vanadium, dissolved vanadium and dissolved antimony. Client results for bis-2-ethylhexylphthalate should be considered to be non-detect at the concentration reported and qualified with B flags for samples -001, -002, -003, -004 and -008 and considered to be non-detect at the RL and qualified with UB flags for samples -005, -006 and -009.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

Dissolved metals analytical batch 278731 CCV response outliers were not used to qualify client sample results as part of this level 2 verification review. This level 4 data package QC information will be evaluated as part of the pending validation review and data will be qualified if applicable.

GCMS VOC SIM sample -005 MS/MSD recoveries were outliers biased low for 1,4-dioxane. Client sample -005 1,4-dioxane results should be considered to be estimated and qualified with a J flag.

Metals method blanks had detections below the RL in QC batch 272910 for sodium and vanadium and in QC batch 273171 for dissolved vanadium. Client samples -001, -002, -003, -004, -005, -006, -009, -010 and -011 total and dissolved vanadium results should be considered to be non-detect at the RL and qualified with UB flags.

Metals sample -005 MS and MSD recoveries were outliers with the recoveries biased low for total selenium. Client sample -005 total selenium results should be considered to be estimated and qualified with a UJ flag. MS/MSD recoveries for total and dissolved iron and total and dissolved calcium and total and dissolved manganese and dissolved magnesium were not considered to be statistically reliable so were not used to qualify results due to elevated levels of target analyte in the original sample matrix relative to the amount spiked (4X rule).

Cyanide client sample -005 MS/MSD recoveries were outliers biased low. Client sample -005 cyanide results should be considered to be estimated and qualified with a UJ flag. Cyanide QC batch 27467 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD’s were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6ºC after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 84924-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	(Manual Cold Vapor)(D)	(Manual Cold Vapor)	TOTAL AND AMENABLE COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Anions by IC	Alkalinity Prep
490849241	OB-13-081015	8/10/2015	9:45:00	X	X	X	X	X	X	X	X	X	X	X	X
4908492410	RW-4A (62-72)-081015	8/10/2015	12:15:00	X	X	X	X	X	X	X	X	X	X	X	X
4908492411	FB-02-081115	8/11/2015	9:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490849242	OB-3-081015	8/10/2015	11:50:00	X	X	X	X	X	X	X	X	X	X	X	X
490849243	Dup-02-081015	8/10/2015	12:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490849244	OB-12-081015	8/10/2015	2:45:00	X	X	X	X	X	X	X	X	X	X	X	X
490849245	OB-5-081015	8/10/2015	10:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490849246	OB-4-081015	8/10/2015	2:30:00	X	X	X	X	X	X	X	X	X	X	X	X
490849247	TB-05-081115	8/11/2015	12:01:00	X	X										
490849248	RW-3DD (175-180)-081015	8/10/2015	2:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490849249	RW-4 (393-403)-081015	8/10/2015	9:40:00	X	X	X	X	X	X	X	X	X	X	X	X

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84924-1
August 2015

Description

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- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84924-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

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FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84924-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-84924-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-13-081015				RW-4A (62-72)-081015				FB-02-081115			
		Lab Sample ID:	490849241				4908492410				4908492411			
		Sample Date:	8/10/2015				8/10/2015				8/11/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	UJ	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7												
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Propene, hexafluoro- - TIC	116-15-4												
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9												
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSIM													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-13-081015				RW-4A (62-72)-081015				FB-02-081115			
		Lab Sample ID:	490849241				4908492410				4908492411			
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GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,2'-oxybis[1-chloropropane]	108-60-1	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	6.3	ug/l	---	ND	6.5	ug/l	---	ND	6.3	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2-Chloronaphthalene	91-58-7	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2-Chlorophenol	95-57-8	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2-Methylnaphthalene	91-57-6	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
2-Methylphenol	95-48-7	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2-Nitroaniline	88-74-4	ND	6.3	ug/l	---	ND	6.5	ug/l	---	ND	6.3	ug/l	---
2-Nitrophenol	88-75-5	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
3-Nitroaniline	99-09-2	ND	6.3	ug/l	---	ND	6.5	ug/l	---	ND	6.3	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	6.3	ug/l	---	ND	6.5	ug/l	---	ND	6.3	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
4-Chloroaniline	106-47-8	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
4-Nitroaniline	100-01-6	ND	6.3	ug/l	---	ND	6.5	ug/l	---	ND	6.3	ug/l	---
4-Nitrophenol	100-02-7	ND	6.3	ug/l	---	ND	6.5	ug/l	---	ND	6.3	ug/l	---
Acenaphthene	83-32-9	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Acenaphthylene	208-96-8	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Acetophenone	98-86-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Anthracene	120-12-7	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Atrazine	1912-24-9	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Benzaldehyde	100-52-7	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Benzo[g,h,i]perylene	191-24-2	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	3.1	2.5	ug/l	B	ND	2.6	ug/l	---	1.7	2.5	ug/l	J
Butyl benzyl phthalate	85-68-7	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Caprolactam	105-60-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Carbazole	86-74-8	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Chrysene	218-01-9	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Dibenzofuran	132-64-9	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Diethyl phthalate	84-66-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Diethyltoluamide - TIC	134-62-3												
Dimethyl phthalate	131-11-3	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Diphenyl	92-52-4	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Fluoranthene	206-44-0	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Fluorene	86-73-7	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Hexachloroethane	67-72-1	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Indeno[1,2,3-cd]pyrene	193-39-5	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Isophorone	78-59-1	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Naphthalene	91-20-3	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Nitrobenzene	98-95-3	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Phenanthrene	85-01-8	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
Phenol	108-95-2	ND	2.5	ug/l	---	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Pyrene	129-00-0	ND	0.51	ug/l	---	ND	0.52	ug/l	---	ND	0.51	ug/l	---
OSW-8270DSIM													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-13-081015				RW-4A (62-72)-081015				FB-02-081115			
		Lab Sample ID:	490849241				4908492410				4908492411			
		Sample Date:	8/10/2015				8/10/2015				8/11/2015			
Analyte		**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other														
	OSW-8082A													
	PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals														
	OSW-6020A													
	Aluminum	7429-90-5	0.020	0.020	mg/l	---	0.086	0.020	mg/l	---	ND	0.020	mg/l	---
	Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	0.016	0.020	mg/l	J	ND	0.020	mg/l	---
	Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00097	0.0020	mg/l	J
	Arsenic	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Barium	7440-39-3	0.0046	0.0020	mg/l	---	0.0041	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Barium - Dissolved	7440-39-3	0.0045	0.0020	mg/l	---	0.0041	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
	Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
	Calcium	7440-70-2	7.9	1.0	mg/l	---	9.8	1.0	mg/l	---	ND	1.0	mg/l	---
	Calcium - Dissolved	7440-70-2	7.6	1.0	mg/l	---	9.9	1.0	mg/l	---	ND	1.0	mg/l	---
	Chromium	7440-47-3	ND	0.0020	mg/l	---	0.00061	0.0020	mg/l	J	ND	0.0020	mg/l	---
	Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Copper	7440-50-8	ND	0.0020	mg/l	---	0.00081	0.0020	mg/l	J	ND	0.0020	mg/l	---
	Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Iron	7439-89-6	0.020	0.025	mg/l	J	0.14	0.025	mg/l	---	ND	0.025	mg/l	---
	Iron - Dissolved	7439-89-6	ND	0.025	mg/l	---	0.019	0.025	mg/l	J	ND	0.025	mg/l	---
	Lead	7439-92-1	ND	0.0020	mg/l	---	0.00044	0.0020	mg/l	J	ND	0.0020	mg/l	---
	Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Magnesium	7439-95-4	3.0	1.0	mg/l	---	4.0	1.0	mg/l	---	ND	1.0	mg/l	---
	Magnesium - Dissolved	7439-95-4	2.9	1.0	mg/l	---	4.2	1.0	mg/l	---	ND	1.0	mg/l	---
	Manganese	7439-96-5	0.0045	0.0020	mg/l	---	0.0021	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Manganese - Dissolved	7439-96-5	0.0029	0.0020	mg/l	---	0.00086	0.0020	mg/l	J	ND	0.0020	mg/l	---
	Nickel	7440-02-0	0.00061	0.0020	mg/l	J	0.027	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---	0.028	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Potassium	7440-09-7	1.1	1.0	mg/l	---	1.2	1.0	mg/l	---	ND	1.0	mg/l	---
	Potassium - Dissolved	7440-09-7	1.1	1.0	mg/l	---	1.3	1.0	mg/l	---	ND	1.0	mg/l	---
	Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Sodium	7440-23-5	3.2	1.0	mg/l	---	5.7	1.0	mg/l	---	ND	1.0	mg/l	---
	Sodium - Dissolved	7440-23-5	3.0	1.0	mg/l	---	5.9	1.0	mg/l	---	ND	1.0	mg/l	---
	Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Vanadium	7440-62-2	0.0014	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB	0.00093	0.0020	mg/l	UB
	Vanadium - Dissolved	7440-62-2	0.0013	0.0020	mg/l	UB	0.0014	0.0020	mg/l	UB	0.00086	0.0020	mg/l	UB
	Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
	Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
	OSW-7470A													
	Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
	Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry														
	OSW-9012B													
	Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
	OSW-9056A													
	Chloride	16887-00-6	2.75	1.00	mg/l	---	1.31	1.00	mg/l	---	ND	1.00	mg/l	---
	Sulfate	14808-79-8	7.65	1.00	mg/l	---	9.97	1.00	mg/l	---	ND	1.00	mg/l	---
Prep														
	APHA-2320B													
	Bicarbonate Alkalinity as CaCO3	E-14508	24.4	10.0	mg/l	---	36.1	10.0	mg/l	---	ND	10.0	mg/l	---
	Total Alkalinity as CaCO3	E-14506	24.4	10.0	mg/l	---	36.1	10.0	mg/l	---	ND	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-3-081015				Dup-02-081015				OB-12-081015			
		Lab Sample ID:	490849242				490849243				490849244			
		Sample Date:	8/10/2015				8/10/2015				8/10/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7												
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Propene, hexafluoro- - TIC	116-15-4												
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9												
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSIM													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-3-081015				Dup-02-081015				OB-12-081015			
		Lab Sample ID:	490849242				490849243				490849244			
		Sample Date:	8/10/2015				8/10/2015				8/10/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2,2'-oxybis[1-chloropropane]	108-60-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	6.4	ug/l	---	ND	6.6	ug/l	---	ND	6.4	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2-Chloronaphthalene	91-58-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2-Chlorophenol	95-57-8	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2-Methylnaphthalene	91-57-6	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
2-Methylphenol	95-48-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
2-Nitroaniline	88-74-4	ND	6.4	ug/l	---	ND	6.6	ug/l	---	ND	6.4	ug/l	---
2-Nitrophenol	88-75-5	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
3-Nitroaniline	99-09-2	ND	6.4	ug/l	---	ND	6.6	ug/l	---	ND	6.4	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	6.4	ug/l	---	ND	6.6	ug/l	---	ND	6.4	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
4-Chloroaniline	106-47-8	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
4-Nitroaniline	100-01-6	ND	6.4	ug/l	---	ND	6.6	ug/l	---	ND	6.4	ug/l	---
4-Nitrophenol	100-02-7	ND	6.4	ug/l	---	ND	6.6	ug/l	---	ND	6.4	ug/l	---
Acenaphthene	83-32-9	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Acenaphthylene	208-96-8	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Acetophenone	98-86-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Anthracene	120-12-7	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Atrazine	1912-24-9	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Benzaldehyde	100-52-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Benzo[g,h,i]perylene	191-24-2	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	6.3	2.6	ug/l	B	3.6	2.6	ug/l	B	3.7	2.6	ug/l	B
Butyl benzyl phthalate	85-68-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Caprolactam	105-60-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Carbazole	86-74-8	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Chrysene	218-01-9	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Dibenzofuran	132-64-9	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Diethyl phthalate	84-66-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Diethyltoluamide - TIC	134-62-3					4.7	---	ug/l	NJ				
Dimethyl phthalate	131-11-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Diphenyl	92-52-4	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Fluoranthene	206-44-0	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Fluorene	86-73-7	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Hexachloroethane	67-72-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Indeno[1,2,3-cd]pyrene	193-39-5	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Isophorone	78-59-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Naphthalene	91-20-3	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Nitrobenzene	98-95-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Phenanthrene	85-01-8	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
Phenol	108-95-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---	ND	2.6	ug/l	---
Pyrene	129-00-0	ND	0.51	ug/l	---	ND	0.53	ug/l	---	ND	0.51	ug/l	---
OSW-8270DSIM													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-3-081015				Dup-02-081015				OB-12-081015			
		Lab Sample ID:	490849242				490849243				490849244			
		Sample Date:	8/10/2015				8/10/2015				8/10/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	ND	0.020	mg/l	---	0.019	0.020	mg/l	J	0.021	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	0.0098	0.020	mg/l	J	0.014	0.020	mg/l	J
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.0029	0.0020	mg/l	---	0.0049	0.0020	mg/l	---	0.0030	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.0029	0.0020	mg/l	---	0.0045	0.0020	mg/l	---	0.0028	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	17.3	1.0	mg/l	---	8.2	1.0	mg/l	---	9.8	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	16.9	1.0	mg/l	---	7.7	1.0	mg/l	---	9.5	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00056	0.0020	mg/l	J
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0046	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0041	0.0020	mg/l	---
Iron	7439-89-6	1.8	0.025	mg/l	---	0.020	0.025	mg/l	J	0.061	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.11	0.025	mg/l	---	ND	0.025	mg/l	---	0.014	0.025	mg/l	J
Lead	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	4.9	1.0	mg/l	---	3.2	1.0	mg/l	---	3.7	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	4.8	1.0	mg/l	---	3.0	1.0	mg/l	---	3.5	1.0	mg/l	---
Manganese	7439-96-5	0.13	0.0020	mg/l	---	0.0049	0.0020	mg/l	---	0.0019	0.0020	mg/l	J
Manganese - Dissolved	7439-96-5	0.12	0.0020	mg/l	---	0.0035	0.0020	mg/l	---	0.0013	0.0020	mg/l	J
Nickel	7440-02-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---	0.00070	0.0020	mg/l	J	ND	0.0020	mg/l	---
Potassium	7440-09-7	1.1	1.0	mg/l	---	1.2	1.0	mg/l	---	0.61	1.0	mg/l	J
Potassium - Dissolved	7440-09-7	1.1	1.0	mg/l	---	1.1	1.0	mg/l	---	0.61	1.0	mg/l	J
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	3.5	1.0	mg/l	---	3.2	1.0	mg/l	---	3.2	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	3.4	1.0	mg/l	---	3.4	1.0	mg/l	---	3.2	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0011	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.00082	0.0020	mg/l	UB	0.0013	0.0020	mg/l	UB	0.00096	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	1.66	1.00	mg/l	---	2.73	1.00	mg/l	---	1.22	1.00	mg/l	---
Sulfate	14808-79-8	8.50	1.00	mg/l	---	7.34	1.00	mg/l	---	15.3	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	47.7	10.0	mg/l	---	22.9	10.0	mg/l	---	17.2	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	47.7	10.0	mg/l	---	22.9	10.0	mg/l	---	17.2	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-5-081015				OB-4-081015				TB-05-081115			
		Lab Sample ID:	490849245				490849246				490849247			
		Sample Date:	8/10/2015				8/10/2015				8/11/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	0.37	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	0.20	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7	0.95	5.0	ug/l	J								
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	0.27	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Propene, hexafluoro- - TIC	116-15-4												
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9												
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSIM													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	0.35	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-5-081015				OB-4-081015				TB-05-081115			
		Lab Sample ID:	490849245				490849246				490849247			
		Sample Date:	8/10/2015				8/10/2015				8/11/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2,2'-oxybis[1-chloropropane]	108-60-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2,3,4,6-Tetrachlorophenol	58-90-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2,4,5-Trichlorophenol	95-95-4	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2,4,6-Trichlorophenol	88-06-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2,4-Dichlorophenol	120-83-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2,4-Dimethylphenol	105-67-9	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2,4-Dinitrophenol	51-28-5	ND	6.4	ug/l	---	ND	6.4	ug/l	---				
2,4-Dinitrotoluene	121-14-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2,6-Dinitrotoluene	606-20-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2-Chloronaphthalene	91-58-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2-Chlorophenol	95-57-8	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2-Methylnaphthalene	91-57-6	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
2-Methylphenol	95-48-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
2-Nitroaniline	88-74-4	ND	6.4	ug/l	---	ND	6.4	ug/l	---				
2-Nitrophenol	88-75-5	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
3 & 4 Methylphenol	65794-96-9	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
3,3'-Dichlorobenzidine	91-94-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
3-Nitroaniline	99-09-2	ND	6.4	ug/l	---	ND	6.4	ug/l	---				
4,6-Dinitro-2-methylphenol	534-52-1	ND	6.4	ug/l	---	ND	6.4	ug/l	---				
4-Bromophenyl phenyl ether	101-55-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
4-Chloro-3-methylphenol	59-50-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
4-Chloroaniline	106-47-8	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
4-Chlorophenyl phenyl ether	7005-72-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
4-Nitroaniline	100-01-6	ND	6.4	ug/l	---	ND	6.4	ug/l	---				
4-Nitrophenol	100-02-7	ND	6.4	ug/l	---	ND	6.4	ug/l	---				
Acenaphthene	83-32-9	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Acenaphthylene	208-96-8	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Acetophenone	98-86-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Anthracene	120-12-7	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Atrazine	1912-24-9	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Benzaldehyde	100-52-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Benzo[g,h,i]perylene	191-24-2	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Benzo[k]fluoranthene	207-08-9	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Bis(2-chloroethoxy)methane	111-91-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Bis(2-chloroethyl)ether	111-44-4	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Bis(2-ethylhexyl) phthalate	117-81-7	2.2	2.6	ug/l	UB	1.7	2.6	ug/l	UB				
Butyl benzyl phthalate	85-68-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Caprolactam	105-60-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Carbazole	86-74-8	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Chrysene	218-01-9	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Di-n-butyl phthalate	84-74-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Di-n-octyl phthalate	117-84-0	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Dibenz(a,h)anthracene	53-70-3	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Dibenzofuran	132-64-9	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Diethyl phthalate	84-66-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Diethyltoluamide - TIC	134-62-3												
Dimethyl phthalate	131-11-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Diphenyl	92-52-4	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Fluoranthene	206-44-0	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Fluorene	86-73-7	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Hexachlorocyclopentadiene	77-47-4	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Hexachloroethane	67-72-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Indeno[1,2,3-cd]pyrene	193-39-5	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Isophorone	78-59-1	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
N-Nitrosodi-n-propylamine	621-64-7	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
N-Nitrosodiphenylamine	86-30-6	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Naphthalene	91-20-3	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Nitrobenzene	98-95-3	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Phenanthrene	85-01-8	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
Phenol	108-95-2	ND	2.6	ug/l	---	ND	2.6	ug/l	---				
Pyrene	129-00-0	ND	0.52	ug/l	---	ND	0.51	ug/l	---				
OSW-8270DSIM													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---				
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---				
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---				
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-5-081015				OB-4-081015				TB-05-081115			
		Lab Sample ID:	490849245				490849246				490849247			
		Sample Date:	8/10/2015				8/10/2015				8/11/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Metals													
OSW-6020A													
Aluminum	7429-90-5	ND	0.020	mg/l	---	0.0096	0.020	mg/l	J				
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---				
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Arsenic	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Barium	7440-39-3	0.026	0.0020	mg/l	---	0.090	0.0020	mg/l	---				
Barium - Dissolved	7440-39-3	0.015	0.0020	mg/l	---	0.079	0.0020	mg/l	---				
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Calcium	7440-70-2	82.0	1.0	mg/l	---	86.7	1.0	mg/l	---				
Calcium - Dissolved	7440-70-2	82.6	1.0	mg/l	---	86.3	1.0	mg/l	---				
Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cobalt	7440-48-4	0.0052	0.0020	mg/l	---	0.0011	0.0020	mg/l	J				
Cobalt - Dissolved	7440-48-4	0.0045	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Copper	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Iron	7439-89-6	31.3	0.025	mg/l	---	13.5	0.025	mg/l	---				
Iron - Dissolved	7439-89-6	8.4	0.025	mg/l	---	6.3	0.025	mg/l	---				
Lead	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Magnesium	7439-95-4	39.5	1.0	mg/l	---	25.0	1.0	mg/l	---				
Magnesium - Dissolved	7439-95-4	40.4	1.0	mg/l	---	24.9	1.0	mg/l	---				
Manganese	7439-96-5	2.2	0.0020	mg/l	---	2.6	0.020	mg/l	---				
Manganese - Dissolved	7439-96-5	2.3	0.0020	mg/l	---	2.7	0.020	mg/l	---				
Nickel	7440-02-0	0.0020	0.0020	mg/l	---	0.00087	0.0020	mg/l	J				
Nickel - Dissolved	7440-02-0	0.0015	0.0020	mg/l	J	0.0011	0.0020	mg/l	J				
Potassium	7440-09-7	3.6	1.0	mg/l	---	3.9	1.0	mg/l	---				
Potassium - Dissolved	7440-09-7	3.7	1.0	mg/l	---	3.8	1.0	mg/l	---				
Selenium	7782-49-2	ND	0.0020	mg/l	UJ	ND	0.0020	mg/l	---				
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Sodium	7440-23-5	32.1	1.0	mg/l	---	109	10.0	mg/l	---				
Sodium - Dissolved	7440-23-5	32.7	1.0	mg/l	---	97.2	10.0	mg/l	---				
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Vanadium	7440-62-2	0.0012	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB				
Vanadium - Dissolved	7440-62-2	0.00084	0.0020	mg/l	UB	0.00096	0.0020	mg/l	UB				
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---				
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---				
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	UJ	0.010	0.010	mg/l	---				
OSW-9056A													
Chloride	16887-00-6	67.0	1.00	mg/l	---	238	1.00	mg/l	---				
Sulfate	14808-79-8	4.49	1.00	mg/l	---	3.15	1.00	mg/l	---				
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	318	10.0	mg/l	---	204	10.0	mg/l	---				
Total Alkalinity as CaCO3	E-14506	318	10.0	mg/l	---	204	10.0	mg/l	---				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	RW-3DD (175-180)-081015				RW-4 (393-403)-081015			
		Lab Sample ID:	490849248				490849249			
		Sample Date:	8/10/2015				8/10/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC									
OSW-8260C									
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	1.9	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	5.5	50	ug/l	J	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	12	25	ug/l	J	ND	25	ug/l	---
Benzene	71-43-2	0.44	1.0	ug/l	J	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	3.7	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	0.22	1.0	ug/l	J	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7								
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Propene, hexafluoro- - TIC	116-15-4					22	---	ug/l	NJ
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9	1.1	10	ug/l	J				
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSIM									
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	20	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	RW-3DD (175-180)-081015				RW-4 (393-403)-081015			
		Lab Sample ID:	490849248				490849249			
		Sample Date:	8/10/2015				8/10/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC									
OSW-8270D									
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,2'-oxybis[1-chloropropane]	108-60-1	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	6.6	ug/l	---	ND	6.3	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2-Chloronaphthalene	91-58-7	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2-Chlorophenol	95-57-8	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2-Methylnaphthalene	91-57-6	ND	0.53	ug/l	---	ND	0.50	ug/l	---
2-Methylphenol	95-48-7	ND	2.6	ug/l	---	ND	2.5	ug/l	---
2-Nitroaniline	88-74-4	ND	6.6	ug/l	---	ND	6.3	ug/l	---
2-Nitrophenol	88-75-5	ND	2.6	ug/l	---	ND	2.5	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	2.6	ug/l	---	ND	2.5	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	2.6	ug/l	---	ND	2.5	ug/l	---
3-Nitroaniline	99-09-2	ND	6.6	ug/l	---	ND	6.3	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	6.6	ug/l	---	ND	6.3	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	2.6	ug/l	---	ND	2.5	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	2.6	ug/l	---	ND	2.5	ug/l	---
4-Chloroaniline	106-47-8	ND	2.6	ug/l	---	ND	2.5	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	2.6	ug/l	---	ND	2.5	ug/l	---
4-Nitroaniline	100-01-6	ND	6.6	ug/l	---	ND	6.3	ug/l	---
4-Nitrophenol	100-02-7	ND	6.6	ug/l	---	ND	6.3	ug/l	---
Acenaphthene	83-32-9	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Acenaphthylene	208-96-8	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Acetophenone	98-86-2	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Anthracene	120-12-7	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Atrazine	1912-24-9	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Benzaldehyde	100-52-7	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Benzo[g,h,i]perylene	191-24-2	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	2.8	2.6	ug/l	B	2.4	2.5	ug/l	UB
Butyl benzyl phthalate	85-68-7	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Caprolactam	105-60-2	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Carbazole	86-74-8	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Chrysene	218-01-9	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Dibenzofuran	132-64-9	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Diethyl phthalate	84-66-2	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Diethyltoluamide - TIC	134-62-3	14	---	ug/l	NJ				
Dimethyl phthalate	131-11-3	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Diphenyl	92-52-4	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Fluoranthene	206-44-0	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Fluorene	86-73-7	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Hexachloroethane	67-72-1	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Indeno[1,2,3-cd]pyrene	193-39-5	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Isophorone	78-59-1	ND	2.6	ug/l	---	ND	2.5	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	2.6	ug/l	---	ND	2.5	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Naphthalene	91-20-3	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Nitrobenzene	98-95-3	ND	2.6	ug/l	---	ND	2.5	ug/l	---
Phenanthrene	85-01-8	ND	0.53	ug/l	---	ND	0.50	ug/l	---
Phenol	108-95-2	3.6	2.6	ug/l	---	ND	2.5	ug/l	---
Pyrene	129-00-0	ND	0.53	ug/l	---	ND	0.50	ug/l	---
OSW-8270DSIM									
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	RW-3DD (175-180)-081015				RW-4 (393-403)-081015			
		Lab Sample ID:	490849248				490849249			
		Sample Date:	8/10/2015				8/10/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other									
OSW-8082A									
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals									
OSW-6020A									
Aluminum	7429-90-5	0.11	0.020	mg/l	---	1.6	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	0.099	0.020	mg/l	---	0.16	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic	7440-38-2	0.020	0.0020	mg/l	---	0.00059	0.0020	mg/l	J
Arsenic - Dissolved	7440-38-2	0.019	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.0064	0.0020	mg/l	---	0.023	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.0068	0.0020	mg/l	---	0.014	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	21.8	1.0	mg/l	---	23.5	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	22.5	1.0	mg/l	---	19.9	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---	0.0014	0.0020	mg/l	J
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	ND	0.0020	mg/l	---	0.0013	0.0020	mg/l	J
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Iron	7439-89-6	0.014	0.025	mg/l	J	0.90	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.017	0.025	mg/l	J	0.068	0.025	mg/l	---
Lead	7439-92-1	ND	0.0020	mg/l	---	0.0018	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	0.72	1.0	mg/l	J	7.5	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	0.76	1.0	mg/l	J	6.3	1.0	mg/l	---
Manganese	7439-96-5	0.00099	0.0020	mg/l	J	0.0084	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.0015	0.0020	mg/l	J	0.00090	0.0020	mg/l	J
Nickel	7440-02-0	0.0035	0.0020	mg/l	---	0.0031	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.0022	0.0020	mg/l	---	0.00056	0.0020	mg/l	J
Potassium	7440-09-7	12.5	1.0	mg/l	---	2.8	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	11.7	1.0	mg/l	---	2.1	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	0.00065	0.0020	mg/l	J
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	53.7	1.0	mg/l	---	8.9	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	51.2	1.0	mg/l	---	8.0	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0079	0.0020	mg/l	---	0.0018	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0070	0.0020	mg/l	---	0.0012	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A									
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry									
OSW-9012B									
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A									
Chloride	16887-00-6	8.43	1.00	mg/l	---	1.41	1.00	mg/l	---
Sulfate	14808-79-8	39.5	1.00	mg/l	---	15.5	1.00	mg/l	---
Prep									
APHA-2320B									
Bicarbonate Alkalinity as CaCO3	E-14508	ND	10.0	mg/l	---	64.6	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	96.8	10.0	mg/l	---	64.6	10.0	mg/l	---

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-13-081015				RW-4A (62-72)-081015				FB-02-081115				OB-3-081015				Dup-02-081015			
		Lab Sample ID:	490849241				4908492410				4908492411				490849242				490849243			
		Sample Date:	8/10/2015				8/10/2015				8/11/2015				8/10/2015				8/10/2015			
Analyte		**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																						
OSW-8260C																						
	Bromomethane	74-83-9					ND	1.0	ug/l	UJ												
	Propene, hexafluoro- - TIC	116-15-4																				
	Tetrahydrofuran - TIC	109-99-9																				
GC/MS SVOC																						
OSW-8260CSIM																						
	1,4-Dioxane	123-91-1																				
OSW-8270D																						
	Bis(2-ethylhexyl) phthalate	117-81-7	3.1	2.5	ug/l	B									6.3	2.6	ug/l	B	3.6	2.6	ug/l	B
	Diethyltoluamide - TIC	134-62-3																	4.7	---	ug/l	NJ
Metals																						
OSW-6020A																						
	Selenium	7782-49-2																				
	Vanadium	7440-62-2	0.0014	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB	0.00093	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB
	Vanadium - Dissolved	7440-62-2	0.0013	0.0020	mg/l	UB	0.0014	0.0020	mg/l	UB	0.00086	0.0020	mg/l	UB	0.00082	0.0020	mg/l	UB	0.0013	0.0020	mg/l	UB
General Chemistry																						
OSW-9012B																						
	Cyanide, Total	57-12-5																				

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 84924-1

		Sample Name:	OB-12-081015				OB-5-081015				OB-4-081015				RW-3DD (175-180)-081015				RW-4 (393-403)-081015			
		Lab Sample ID:	490849244				490849245				490849246				490849248				490849249			
		Sample Date:	8/10/2015				8/10/2015				8/10/2015				8/10/2015				8/10/2015			
Analyte	**Cas No.**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																						
OSW-8260C																						
Bromomethane	74-83-9																					
Propene, hexafluoro- - TIC	116-15-4																		22	---	ug/l	NJ
Tetrahydrofuran - TIC	109-99-9														1.1	10	ug/l	J				
GC/MS SVOC																						
OSW-8260CSIM																						
1,4-Dioxane	123-91-1						0.35	10	ug/l	J												
OSW-8270D																						
Bis(2-ethylhexyl) phthalate	117-81-7		3.7	2.6	ug/l	B	2.2	2.6	ug/l	UB	1.7	2.6	ug/l	UB	2.8	2.6	ug/l	B	2.4	2.5	ug/l	UB
Diethyltoluamide - TIC	134-62-3														14	---	ug/l	NJ				
Metals																						
OSW-6020A																						
Selenium	7782-49-2						ND	0.0020	mg/l	UJ												
Vanadium	7440-62-2		0.0011	0.0020	mg/l	UB	0.0012	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB					0.0018	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2		0.00096	0.0020	mg/l	UB	0.00084	0.0020	mg/l	UB	0.00096	0.0020	mg/l	UB					0.0012	0.0020	mg/l	UB
General Chemistry																						
OSW-9012B																						
Cyanide, Total	57-12-5						ND	0.010	mg/l	UJ												

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
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Chain of Custody Record

Loc: 490
84924

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

09/17/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Carr	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filter!)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
				Preservation Code:																		
1	OB-13-081015	8/10/15	09:45	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
2	OB-3-081015	8/10/15	11:50	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
3	Dup-02-081015	8/10/15	12:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
4	OB-12-081015	8/10/15	14:45	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
5	OB-5-081015 MS/MSD	8/10/15	10:25	G	Water	N	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
6	OB-4-081015	8/10/15	14:30	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
7	TB-05-081115	8/11/15	–	–	Water	N	N	✓	✓													
8	RW-3DD(175-180)-081015	8/10/15	14:25	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
9	RW-4(393-403)-081015	8/10/15	09:40	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
10	RW-4A(62-72)-081015	8/10/15	12:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
11	FB-02-081115	8/11/15	09:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				8/11/15 1200	TA
Relinquished by:	8/11 1350	TA		8-12-15 0945	TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.2, 2.8, 0.7, 2.1, 1.5, 2.8, 1.0, 1.8, 0.2

E-Mail Date: 2015-10-09
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-85437-1

PREPARED BY:
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APPENDIX 2 LABORATORY DOCUMENTS SUBMITTED FOR REVIEW

APPENDIX 3 ANALYTICAL RESULTS SUMMARY

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ATTACHMENT A CHAIN OF CUSTODY DOCUMENT(S)

1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-85437-1	8/17-18/2015	8/19/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
GCMS SVOC and SIM
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
PCB
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
METALS
Sample -004 dissolved sodium result was reported from a value that exceeded the instrument linear dynamic range (LDR) so this result should be considered to be estimated and qualified with a E flag.
INORGANICS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:
GCMS VOC
CCV outliers were not associated with target analytes for this submittal.
GCMS VOC-SIM
Ethylene dibromide (EDB) response was an outlier in the Continuing Calibration Verification Standard (CCV) for 8/26. CCV from the re-analysis on 8/29 was acceptable for EDB so final data for this analyte was reported from that sequence.
GCMS SVOC
No additional non-conforming observations to report.
METALS
PDS and SERIAL DILUTION analytical sequence outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.
CRQL's were consistently within lab control limits with the exception of potassium which was always biased high.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not affect sample quantitation. There was no ending CCV reported for the sequences evaluated.
RAW DATA NOT INCLUDED IN ORIGINAL LAB LEVEL 4 DATA PACKAGE:
Metals – raw instrument data from 9/2 for samples 85437-1, -2, -3, -5 total copper and 9/2 raw instrument data for total mercury for samples -001 and -002.

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank had detections below the RL for naphthalene and acetone. Client sample -001 naphthalene result and client samples -004 and -006 acetone results should be considered to be non-detect at the RL and qualified with UB flags.

GCMS-SIM VOC surrogate recoveries were outliers biased high for 1 out of 4 surrogates in client sample -002. GCMS-SIM VOC sample -002 detected results should be considered to be estimated and qualified with J flags. Non-detect results do not require qualification.

GCMS-SIM VOC LCS/LCSduplicate RPD only was an outlier for 1,4-dioxane. Qualification of client sample results was not required based on this QC outlier alone.

GCMS-SIM VOC QC batch 277393 and GCMS SVOC QC batch 275780 and PCB QC batch 277676 did not include MS recovery data due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

Metals method blanks had detections below the RL in QC batch 274876 for manganese and vanadium and in QC batch 276235 for vanadium. Client samples -006 total manganese results and client samples -001, -002, -003, -005, -006 dissolved vanadium results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -002, -003, -004, -005, -006 total vanadium results should be considered to be non-detect at the concentration reported and qualified with B flags.

Metals QC batch 274876, 276235, 276944 and 278307 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Cyanide client sample -001 MS/MSD recoveries were outliers biased low. Client samples -001 cyanide results should be considered to be estimated and qualified with UJ flags if non-detect and J flags if detected.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD’s were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6ºC after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 85437-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	Mercury (Manual Cold Vapor)(D)	Mercury (Manual Cold Vapor)	TOTAL AND AMENABLE CYANIDE (AUTOMATED COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Inorganic Anions by IC	Alkalinity Prep
490854371	PM Air Shaft-180-081715	8/17/2015	12:05:00	X	X	X	X	X	X	X	X	X	X	X	X
490854372	CM-100-081715	8/17/2015	3:10:00	X	X	X	X	X	X	X	X	X	X	X	X
490854373	CM-160-081715	8/17/2015	4:45:00	X	X	X	X	X	X	X	X	X	X	X	X
490854374	RW-12 (55-65)-081715	8/17/2015	11:11:00	X	X	X	X	X	X	X	X	X	X	X	X
490854375	RW-11S (236-241)-081715	8/17/2015	3:15:00	X	X	X	X	X	X	X	X	X	X	X	X
490854376	FB-03-081815	8/18/2015	8:00:00	X	X	X	X	X	X	X	X	X	X	X	X
490854377	TB-08-081815	8/18/2015	12:01:00	X	X										

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85437-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85437-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85437-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85437-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85437-1

		Sample Name:	PM Air Shaft-180-081715				CM-100-081715				CM-160-081715				RW-12 (55-65)-081715			
		Lab Sample ID:	490854371				490854372				490854373				490854374			
		Sample Date:	8/17/2015				8/17/2015				8/17/2015				8/17/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																	
OSW-8260C																	
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	0.39	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8	0.17	1.0	ug/l	J												
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	0.29	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	1.0	10	ug/l	J
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---	8.3	25	ug/l	UB
Benzene	71-43-2	4.1	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	3.4	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	0.81	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	14	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	0.27	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	0.79	5.0	ug/l	J	ND	5.0	ug/l	---	ND	5.0	ug/l	---	0.17	5.0	ug/l	J
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorofluoromethane - TIC	75-43-4	0.27	1.0	ug/l	J												
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Hexane - TIC	110-54-3	0.23	2.0	ug/l	J												
Indane - TIC	496-11-7	4.6	---	ug/l	NJ												
Isopropyl alcohol - TIC	67-63-0													20	50	ug/l	J
Isopropylbenzene	98-82-8	1.1	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	0.17	5.0	ug/l	J	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Naphthalene - TIC	91-20-3	0.58	5.0	ug/l	UB												
Silanol, trimethyl- - TIC	1066-40-6																
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9	1.6	10	ug/l	J												
Toluene	108-88-3	0.18	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---	3.6	1.0	ug/l	---
Total Alkanes TIC - TIC	Tic1	0.23	---	ug/l	NJ												
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2													14	---	ug/l	NJ
Vinyl chloride	75-01-4	0.25	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim																	
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	12	10	ug/l	---	0.47	10	ug/l	J	0.54	10	ug/l	J	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85437-1

		Sample Name:	PM Air Shaft-180-081715				CM-100-081715				CM-160-081715				RW-12 (55-65)-081715			
		Lab Sample ID:	490854371				490854372				490854373				490854374			
		Sample Date:	8/17/2015				8/17/2015				8/17/2015				8/17/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC																		
OSW-8270D																		
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	1,4-Dioxane - TIC	123-91-1	6.7	10	ug/l	J												
	1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8													27	---	ug/l	NJ
	2(3H)-Furanone, 5-heptyldihydro- - TIC	104-67-6													31	---	ug/l	NJ
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Mercaptobenzothiazole - TIC	149-30-4													30	---	ug/l	NJ
	2-Methyl-4-hydroxybenzoxazole - TIC	51110-60-2													27	---	ug/l	NJ
	2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	2-Propanone, dimethylhydrazone - TIC	13483-31-3													18	---	ug/l	NJ
	2H-Pyran-2-one, 6-heptyltetrahydro- - TIC	713-95-1													36	---	ug/l	NJ
	3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5													20	---	ug/l	NJ
	3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3													9.0	---	ug/l	NJ
	Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Acetamide, N-(1-dimethylaminomethylene-2 - TIC	220098-91-9													29	---	ug/l	NJ
	Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Benzenesulfonamide, N-butyl- - TIC	3622-84-2													18	---	ug/l	NJ
	Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8	3.5	---	ug/l	NJ												
	Benzothiazole - TIC	95-16-9													12	---	ug/l	NJ
	Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Cyclic octaatomic sulfur - TIC	10544-50-0					43	---	ug/l	NJ								
	Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7	4.0	---	ug/l	NJ												
	Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diethyltoluamide - TIC	134-62-3																
	Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Dodecanoic acid - TIC	143-07-7																
	Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5													28	---	ug/l	NJ
	Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Hexaethylene glycol monododecyl ether - TIC	3055-96-7																
	Hexagol - TIC	2615-15-8																
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
	Octadecanoic acid - TIC	57-11-4													60	---	ug/l	NJ
	Octanoic acid, 8-[(tetrahydro-2H-pyran-2 - TIC	54699-43-3													13	---	ug/l	NJ
	Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---	3.0	10	ug/l	J
	Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
	Sulfur - TIC	13798-23-7					3.2	---	ug/l	NJ								
	Tetradecanoic acid - TIC	544-63-8																
	Tetraethylene glycol monododecyl ether - TIC	5274-68-0																
	Tridecanoic acid - TIC	638-53-9																

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85437-1

		Sample Name:	PM Air Shaft-180-081715				CM-100-081715				CM-160-081715				RW-12 (55-65)-081715			
		Lab Sample ID:	490854371				490854372				490854373				490854374			
		Sample Date:	8/17/2015				8/17/2015				8/17/2015				8/17/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim																		
	Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.046	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
	Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.046	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
	Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.046	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	---
	Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.019	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
	Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.37	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	---
	N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.74	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	---
	Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.28	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	---
GC Other																		
OSW-8082A																		
	PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
	Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Metals																		
OSW-6020A																		
	Aluminum	7429-90-5	0.050	0.020	mg/l	---	0.014	0.020	mg/l	J	0.011	0.020	mg/l	J	0.28	0.020	mg/l	---
	Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	ND	0.020	mg/l	---	0.24	0.020	mg/l	---
	Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Arsenic	7440-38-2	0.0012	0.0020	mg/l	J	0.0016	0.0020	mg/l	J	0.0017	0.0020	mg/l	J	0.013	0.0020	mg/l	---
	Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.012	0.0020	mg/l	---
	Barium	7440-39-3	0.41	0.0020	mg/l	---	0.11	0.0020	mg/l	---	0.12	0.0020	mg/l	---	0.025	0.0020	mg/l	---
	Barium - Dissolved	7440-39-3	0.31	0.0020	mg/l	---	0.095	0.0020	mg/l	---	0.092	0.0020	mg/l	---	0.024	0.0020	mg/l	---
	Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	0.00085	0.0010	mg/l	J	ND	0.0010	mg/l	---
	Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
	Calcium	7440-70-2	44.5	1.0	mg/l	---	83.4	1.0	mg/l	---	85.0	1.0	mg/l	---	72.7	1.0	mg/l	---
	Calcium - Dissolved	7440-70-2	42.3	1.0	mg/l	---	82.6	1.0	mg/l	---	76.8	1.0	mg/l	---	57.7	1.0	mg/l	---
	Chromium	7440-47-3	0.0025	0.0020	mg/l	---	0.0018	0.0020	mg/l	J	0.0026	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Cobalt	7440-48-4	0.00064	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Copper	7440-50-8	0.0017	0.0020	mg/l	J	0.0021	0.0020	mg/l	---	0.0027	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Iron	7439-89-6	79.3	0.025	mg/l	---	18.5	0.025	mg/l	---	19.0	0.025	mg/l	---	0.019	0.025	mg/l	J
	Iron - Dissolved	7439-89-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---	0.011	0.025	mg/l	J
	Lead	7439-92-1	0.024	0.0020	mg/l	---	0.00029	0.0020	mg/l	J	0.0078	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Magnesium	7439-95-4	4.4	1.0	mg/l	---	22.4	1.0	mg/l	---	22.7	1.0	mg/l	---	ND	1.0	mg/l	---
	Magnesium - Dissolved	7439-95-4	4.4	1.0	mg/l	---	23.3	1.0	mg/l	---	21.7	1.0	mg/l	---	ND	1.0	mg/l	---
	Manganese	7439-96-5	0.81	0.0020	mg/l	---	1.3	0.0020	mg/l	---	1.4	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Manganese - Dissolved	7439-96-5	0.75	0.0020	mg/l	---	1.2	0.0020	mg/l	---	1.2	0.0020	mg/l	---	0.00071	0.0020	mg/l	J
	Nickel	7440-02-0	0.0017	0.0020	mg/l	J	0.0025	0.0020	mg/l	---	0.0023	0.0020	mg/l	---	0.0033	0.0020	mg/l	---
	Nickel - Dissolved	7440-02-0	0.00062	0.0020	mg/l	J	0.0021	0.0020	mg/l	---	0.0012	0.0020	mg/l	J	0.0022	0.0020	mg/l	---
	Potassium	7440-09-7	2.0	1.0	mg/l	---	5.0	1.0	mg/l	---	5.1	1.0	mg/l	---	39.3	1.0	mg/l	---
	Potassium - Dissolved	7440-09-7	1.9	1.0	mg/l	---	4.8	1.0	mg/l	---	4.5	1.0	mg/l	---	34.8	1.0	mg/l	---
	Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0099	0.0020	mg/l	---
	Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0088	0.0020	mg/l	---
	Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Sodium	7440-23-5	4.7	1.0	mg/l	---	79.6	1.0	mg/l	---	79.8	1.0	mg/l	---	170	10.0	mg/l	---
	Sodium - Dissolved	7440-23-5	4.8	1.0	mg/l	---	83.2	1.0	mg/l	---	77.3	1.0	mg/l	---	155	1.0	mg/l	E
	Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Thallium - Dissolved	7440-28-0	0.00030	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
	Vanadium	7440-62-2	0.010	0.0020	mg/l	---	0.0024	0.0020	mg/l	B	0.0028	0.0020	mg/l	B	0.0068	0.0020	mg/l	B
	Vanadium - Dissolved	7440-62-2	0.00084	0.0020	mg/l	UB	0.00095	0.0020	mg/l	UB	0.00095	0.0020	mg/l	UB	0.0048	0.0020	mg/l	---
	Zinc	7440-66-6	4.0	0.13	mg/l	---	0.86	0.025	mg/l	---	2.5	0.13	mg/l	---	ND	0.025	mg/l	---
	Zinc - Dissolved	7440-66-6	2.8	0.25	mg/l	---	0.15	0.025	mg/l	---	0.91	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A																		
	Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
	Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry																		
OSW-9012B																		
	Cyanide, Total	57-12-5	ND	0.010	mg/l	UJ	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A																		
	Chloride	16887-00-6	1.76	1.00	mg/l	---	175	1.00	mg/l	---	172	1.00	mg/l	---	47.2	1.00	mg/l	---
	Sulfate	14808-79-8	1.99	1.00	mg/l	---	3.46	1.00	mg/l	---	2.85	1.00	mg/l	---	299	5.00	mg/l	---
Prep																		
APHA-2320B																		
	Bicarbonate Alkalinity as CaCO3	E-14508	191	10.0	mg/l	---	240	10.0	mg/l	---	248	10.0	mg/l	---	ND	10.0	mg/l	---
	Total Alkalinity as CaCO3	E-14506	191	10.0	mg/l	---	240	10.0	mg/l	---	248	10.0	mg/l	---	101	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85437-1

		Sample Name:	RW-11S (236-241)-081715				FB-03-081815				TB-08-081815			
		Lab Sample ID:	490854375				490854376				490854377			
		Sample Date:	8/17/2015				8/18/2015				8/18/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8												
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	13	25	ug/l	UB	3.7	25	ug/l	J
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorofluoromethane - TIC	75-43-4												
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Hexane - TIC	110-54-3												
Indane - TIC	496-11-7												
Isopropyl alcohol - TIC	67-63-0												
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	0.39	5.0	ug/l	J	ND	5.0	ug/l	---
Naphthalene - TIC	91-20-3									0.37	5.0	ug/l	J
Silanol, trimethyl- - TIC	1066-40-6					6.3	---	ug/l	NJ				
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9												
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Total Alkanes TIC - TIC	Tic1												
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2												
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	1.1	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85437-1

		Sample Name:	RW-11S (236-241)-081715				FB-03-081815				TB-08-081815			
		Lab Sample ID:	490854375				490854376				490854377			
		Sample Date:	8/17/2015				8/18/2015				8/18/2015			
Analyte		**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---				
	1,4-Dioxane - TIC	123-91-1												
	1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8												
	2(3H)-Furanone, 5-heptyldihydro- - TIC	104-67-6												
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---				
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---				
	2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---				
	2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---				
	2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---				
	2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---				
	2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---				
	2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---				
	2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---				
	2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---				
	2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---				
	2-Mercaptobenzothiazole - TIC	149-30-4												
	2-Methyl-4-hydroxybenzoxazole - TIC	51110-60-2												
	2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---				
	2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---				
	2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---				
	2-Propanone, dimethylhydrazone - TIC	13483-31-3												
	2H-Pyran-2-one, 6-heptyltetrahydro- - TIC	713-95-1												
	3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---				
	3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---				
	3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5												
	3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---				
	4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---				
	4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---				
	4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---				
	4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---				
	4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---				
	4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---				
	4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---				
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
	Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Acetamide, N-(1-dimethylaminomethylene-2 - TIC	220098-91-9												
	Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---				
	Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---				
	Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---				
	Benzenesulfonamide, N-butyl- - TIC	3622-84-2												
	Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8												
	Benzothiazole - TIC	95-16-9												
	Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---				
	Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---				
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---				
	Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---				
	Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---				
	Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---				
	Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Cyclic octaatomic sulfur - TIC	10544-50-0												
	Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7												
	Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---				
	Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---				
	Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---				
	Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---				
	Diethyltoluamide - TIC	134-62-3					8.7	---	ug/l	NJ				
	Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---				
	Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---				
	Dodecanoic acid - TIC	143-07-7					11	---	ug/l	NJ				
	Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5												
	Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---				
	Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---				
	Hexaethylene glycol monododecyl ether - TIC	3055-96-7					3.2	---	ug/l	NJ				
	Hexagol - TIC	2615-15-8					3.3	---	ug/l	NJ				
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---				
	N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---				
	N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---				
	Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---				
	Octadecanoic acid - TIC	57-11-4					6.2	---	ug/l	NJ				
	Octanoic acid, 8-[(tetrahydro-2H-pyran-2 - TIC	54699-43-3												
	Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Phenol	108-95-2	ND	10	ug/l	---	ND	10	ug/l	---				
	Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
	Sulfur - TIC	13798-23-7												
	Tetradecanoic acid - TIC	544-63-8					4.7	---	ug/l	NJ				
	Tetraethylene glycol monododecyl ether - TIC	5274-68-0					3.6	---	ug/l	NJ				
	Tridecanoic acid - TIC	638-53-9					8.1	---	ug/l	NJ				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85437-1

		Sample Name:	RW-11S (236-241)-081715				FB-03-081815				TB-08-081815			
		Lab Sample ID:	490854375				490854376				490854377			
		Sample Date:	8/17/2015				8/18/2015				8/18/2015			
Analyte		**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim														
	Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
	Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
	Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---				
	Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---				
	Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---				
	N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---				
	Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---				
GC Other														
OSW-8082A														
	PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
	PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
	PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
	PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
	PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
	PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
	PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
	Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Metals														
OSW-6020A														
	Aluminum	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---				
	Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---				
	Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	0.00084	0.0020	mg/l	J				
	Arsenic	7440-38-2	0.0010	0.0020	mg/l	J	0.00061	0.0020	mg/l	J				
	Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Barium	7440-39-3	0.015	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Barium - Dissolved	7440-39-3	0.015	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
	Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
	Calcium	7440-70-2	16.1	1.0	mg/l	---	ND	1.0	mg/l	---				
	Calcium - Dissolved	7440-70-2	15.2	1.0	mg/l	---	ND	1.0	mg/l	---				
	Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	0.0036	0.0020	mg/l	---				
	Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Copper	7440-50-8	0.0070	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Copper - Dissolved	7440-50-8	0.0041	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Iron	7439-89-6	0.057	0.025	mg/l	---	ND	0.025	mg/l	---				
	Iron - Dissolved	7439-89-6	ND	0.025	mg/l	---	0.023	0.025	mg/l	J				
	Lead	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Magnesium	7439-95-4	2.2	1.0	mg/l	---	ND	1.0	mg/l	---				
	Magnesium - Dissolved	7439-95-4	2.2	1.0	mg/l	---	ND	1.0	mg/l	---				
	Manganese	7439-96-5	0.22	0.0020	mg/l	---	0.00089	0.0020	mg/l	UB				
	Manganese - Dissolved	7439-96-5	0.20	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Nickel	7440-02-0	0.0039	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Nickel - Dissolved	7440-02-0	0.0027	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Potassium	7440-09-7	1.5	1.0	mg/l	---	ND	1.0	mg/l	---				
	Potassium - Dissolved	7440-09-7	1.4	1.0	mg/l	---	ND	1.0	mg/l	---				
	Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Sodium	7440-23-5	3.1	1.0	mg/l	---	ND	1.0	mg/l	---				
	Sodium - Dissolved	7440-23-5	3.0	1.0	mg/l	---	ND	1.0	mg/l	---				
	Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
	Vanadium	7440-62-2	0.0024	0.0020	mg/l	B	0.0022	0.0020	mg/l	B				
	Vanadium - Dissolved	7440-62-2	0.0011	0.0020	mg/l	UB	0.00090	0.0020	mg/l	UB				
	Zinc	7440-66-6	0.015	0.025	mg/l	J	ND	0.025	mg/l	---				
	Zinc - Dissolved	7440-66-6	0.013	0.025	mg/l	J	ND	0.025	mg/l	---				
OSW-7470A														
	Mercury	7439-97-6	0.00018	0.00020	mg/l	J	ND	0.00020	mg/l	---				
	Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
General Chemistry														
OSW-9012B														
	Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---				
OSW-9056A														
	Chloride	16887-00-6	0.82	1.00	mg/l	J	ND	1.00	mg/l	---				
	Sulfate	14808-79-8	7.21	1.00	mg/l	---	ND	1.00	mg/l	---				
Prep														
APHA-2320B														
	Bicarbonate Alkalinity as CaCO3	E-14508	49.0	10.0	mg/l	---	ND	10.0	mg/l	---				
	Total Alkalinity as CaCO3	E-14506	49.0	10.0	mg/l	---	ND	10.0	mg/l	---				

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85437-1

		Sample Name:	PM Air Shaft-180-081715				CM-100-081715				CM-160-081715				RW-12 (55-65)-081715				RW-11S (236-241)-081715				FB-03-081815				TB-08-081815			
		Lab Sample ID:	490854371				490854372				490854373				490854374				490854375				490854376				490854377			
		Sample Date:	8/17/2015				8/17/2015				8/17/2015				8/17/2015				8/17/2015				8/18/2015				8/18/2015			
Analyte	**Cas No.**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																														
OSW-8260C																														
1,2,3-Trimethylbenzene - TIC	526-73-8		0.17	1.0	ug/l	J																								
Acetone	67-64-1														8.3	25	ug/l	UB					13	25	ug/l	UB				
Dichlorofluoromethane - TIC	75-43-4		0.27	1.0	ug/l	J																								
Hexane - TIC	110-54-3		0.23	2.0	ug/l	J																								
Indane - TIC	496-11-7		4.6	---	ug/l	NJ																								
Isopropyl alcohol - TIC	67-63-0														20	50	ug/l	J												
Naphthalene - TIC	91-20-3		0.58	5.0	ug/l	UB																					0.37	5.0	ug/l	J
Silanol, trimethyl- - TIC	1066-40-6																						6.3	---	ug/l	NJ				
Tetrahydrofuran - TIC	109-99-9		1.6	10	ug/l	J																								
Total Alkanes TIC - TIC	Tic1		0.23	---	ug/l	NJ																								
Unknown - TIC	Tic2														14	---	ug/l	NJ												
GC/MS SVOC																														
OSW-8260CSim																														
1,4-Dioxane	123-91-1						0.47	10	ug/l	J																				
OSW-8270D																														
1-Phenanthrenecarboxylic acid, 1,2,3,4,4 - TIC	1740-19-8														27	---	ug/l	NJ												
2(3H)-Furanone, 5-heptyldihydro- - TIC	104-67-6														31	---	ug/l	NJ												
2-Mercaptobenzothiazole - TIC	149-30-4														30	---	ug/l	NJ												
2-Methyl-4-hydroxybenzoxazole - TIC	51110-60-2														27	---	ug/l	NJ												
2-Propanone, dimethylhydrazone - TIC	13483-31-3														18	---	ug/l	NJ												
2H-Pyran-2-one, 6-heptyltetrahydro- - TIC	713-95-1														36	---	ug/l	NJ												
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5														20	---	ug/l	NJ												
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3														9.0	---	ug/l	NJ												
Acetamide, N-(1-dimethylaminomethylene-2 - TIC	220098-91-9														29	---	ug/l	NJ												
Benzenesulfonamide, N-butyl- - TIC	3622-84-2														18	---	ug/l	NJ												
Benzenesulfonamide, N-cyclohexyl-4-methy - TIC	80-30-8		3.5	---	ug/l	NJ																								
Benzothiazole - TIC	95-16-9														12	---	ug/l	NJ												
Cyclic octaatomic sulfur - TIC	10544-50-0						43	---	ug/l	NJ																				
Cyclohexanamine, N-cyclohexyl- - TIC	101-83-7		4.0	---	ug/l	NJ																								
Diethyltoluamide - TIC	134-62-3																						8.7	---	ug/l	NJ				
Dodecanoic acid - TIC	143-07-7																						11	---	ug/l	NJ				
Ethanol, 2-(2-butoxyethoxy)- - TIC	112-34-5														28	---	ug/l	NJ												
Hexaethylene glycol monododecyl ether - TIC	3055-96-7																						3.2	---	ug/l	NJ				
Hexagol - TIC	2615-15-8																						3.3	---	ug/l	NJ				
Octadecanoic acid - TIC	57-11-4														60	---	ug/l	NJ					6.2	---	ug/l	NJ				
Octanoic acid, 8-[(tetrahydro-2H-pyran-2 - TIC	54699-43-3														13	---	ug/l	NJ												
Sulfur - TIC	13798-23-7						3.2	---	ug/l	NJ																				
Tetradecanoic acid - TIC	544-63-8																						4.7	---	ug/l	NJ				
Tetraethylene glycol monododecyl ether - TIC	5274-68-0																						3.6	---	ug/l	NJ				
Tridecanoic acid - TIC	638-53-9																						8.1	---	ug/l	NJ				
1,4-Dioxane	123-91-1		6.7	10	ug/l	J																								
Metals																														
OSW-6020A																														
Manganese	7439-96-5																						0.00089	0.0020	mg/l	UB				
Sodium - Dissolved	7440-23-5														155	1.0	mg/l	E												
Vanadium	7440-62-2						0.0024	0.0020	mg/l	B	0.0028	0.0020	mg/l	B	0.0068	0.0020	mg/l	B	0.0024	0.0020	mg/l	B	0.0022	0.0020	mg/l	B				
Vanadium - Dissolved	7440-62-2		0.00084	0.0020	mg/l	UB	0.00095	0.0020	mg/l	UB	0.00095	0.0020	mg/l	UB					0.0011	0.0020	mg/l	UB	0.00090	0.0020	mg/l	UB				
General Chemistry																														
OSW-9012B																														
Cyanide, Total	57-12-5		ND	0.010	mg/l	UJ																								

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
85437

TestAmerica

09/21/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Car	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filter)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate	Total Number of containers	Special Instructions/Note:
					Preservation Code:														
1	PMA-Shaft-180-081715	8/17/15	12:05	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
2	CM-100-081715	8/17/15	15:10	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
3	CM-160-081715	8/17/15	16:45	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
4	RW-12 (55-65)-081715	8/17/15	11:11	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
5	RW-11S (236-241)-081715	8/17/15	15:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
6	FB-03-081815	8/18/15	08:00	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
7	TB-08-081815	8/18/15	—	—	Water	N	N	✓	✓										
					Water														
					Water														
					Water														
					Water														

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	8/18/15 845	Cornerstone	James Thrasher	8/18/15 845	TA
James Thrasher	8/18/15 1235	TA	[signature]	8-19-15 0910	TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.5, 2.9, 1.0, 0.6

E-Mail Date: 2015-10-09
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
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ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-85529-1

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1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-85529-1	8/18/2015	8/20/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM
GCMS VOC-SIM sample -004 result for 1,2,3-trichloropropane which was originally qualified as estimated with a J flag has been re-qualified as non-detect at the RL with a UB flag. Basis for qualification change was poor ion profile match between the peak in this sample and the reference ion profile and a non-detect for this analyte in the re-analysis of sample -004.
GCMS SVOC and SIM
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
PCB
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
METALS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.
INORGANICS
No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:
GCMS VOC
No additional non-conforming observations to report.
GCMS VOC-SIM
Ethylene dibromide (EDB) response was an outlier in the Continuing Calibration Verification Standard (CCV) for 8/26 and EDB, 1,2-dibromo-3-chloropropane and 1,2,3-trichloropropane were outlier for the 8/27 CCV. CCV from the re-analysis on 8/29 was acceptable for EDB so final data for this analyte was reported from that sequence.
GCMS SVOC
No additional non-conforming observations to report.
METALS
PDS and SERIAL DILUTION analytical sequence outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.
CRQL's were consistently within lab control limits with the exception of potassium which was always biased high.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not affect sample quantitation. There was no ending CCV reported for the sequences evaluated.
RAW DATA NOT INCLUDED IN ORIGINAL LAB LEVEL 4 DATA PACKAGE:
Metals – raw instrument data from 9/1 for sample 85529-1 dissolved calcium, manganese and zinc results. Raw instrument data for all sample dissolved mercury results of 8/31.

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank was non-detect for all target analytes.

REMOVED BASED ON LEVEL 4 DATA PACKAGE REVIEW - GCMS-SIM VOC surrogate recoveries were outliers biased high for 1 out of 4 surrogates in client sample -004. GCMS-SIM VOC sample -004 detected results should be considered to be estimated and qualified with J flags. Non-detect results do not require qualification.

GCMS-SIM VOC QC batch 276290 LCS/LCSduplicate RPD only was an outlier for 1,4-dioxane. Qualification of client sample results was not required based on this QC outlier alone. QC batch 276673 LCS/LCSduplicate recovery outliers were not associated with reportable results so qualification was not required based on these QC outliers.

GCMS-SIM VOC QC batch 277393 and GCMS SVOC QC batch 275885 and 276363 and PCB QC batch 277676 and PAH QC batch 275872 did not include MS recovery data due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

GCMS VOC QC batch LCS/LCSduplicate RPD was an outlier for 1,1-dichloroethylene. Qualification of client sample results was not required based on this QC outlier alone.

GCMS-SIM SVOC QC batch 275872 method blank had a detection above the RL for hexachlorobenzene. Qualification of client sample results was not required based on this method blank detection.

GCMS SVOC QC batch 275885 LCS recoveries were outliers biased high for benzaldehyde. Qualification of client sample results was not required based on this high bias QC outlier.

Metals method blanks had detections below the RL in QC batch 275634 for arsenic and vanadium and in QC batch 276235 for vanadium. Client samples -001, -002, -003, -005 dissolved vanadium results and client samples -003 and -005 total vanadium results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -002 and -004 total vanadium results and client sample -004 dissolved vanadium result and client samples -001, -002, -003 and -005 total arsenic results should be considered to be non-detect at the concentration reported and qualified with B flags.

GCMS VOC QC batch 277302 and Metals QC batch 276235 and 275634 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

Cyanide client sample -003 MS/MSD recoveries were outliers biased low. Client samples -003 cyanide results should be considered to be estimated and qualified with UJ flags if non-detect and J flags if detected.

Chloride client sample -002 MS/MSD recoveries were outliers biased low. Client sample -002 chloride results should be considered to be estimated and qualified with a J flag.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD’s were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6ºC after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 85529-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	Mercury (Manual Cold Vapor)(D)	Mercury (Manual Cold Vapor)	TOTAL AND AMENABLE CYANIDE (AUTOMATED COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Inorganic Anions by IC	Alkalinity Prep
490855291	PM AirShaft-230-081815	8/18/2015	10:50:00	X	X	X	X	X	X	X	X	X	X	X	X
490855292	CM-275-081815	8/18/2015	1:20:00	X	X	X	X	X	X	X	X	X	X	X	X
490855293	RW-10A (75-85)- 081815	8/18/2015	10:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490855294	RW-10 (185-195)- 081815	8/18/2015	11:35:00	X	X	X	X	X	X	X	X	X	X	X	X
490855295	RW-8 (163-173)- 081815	8/18/2015	2:15:00	X	X	X	X	X	X	X	X	X	X	X	X
490855296	Trip Blank- 09-081915	8/18/2015	1:00:00	X	X										

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85529-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85529-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85529-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85529-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85529-1

		Sample Name:	PM AirShaft-230-081815				CM-275-081815				RW-10A (75-85)- 081815			
		Lab Sample ID:	490855291				490855292				490855293			
		Sample Date:	8/18/2015				8/18/2015				8/18/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8	0.41	1.0	ug/l	J								
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trimethylbenzene - TIC	95-63-6	0.20	1.0	ug/l	J								
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	0.42	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	1.4	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	3.6	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	25	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Benzene, 2-ethenyl-1,4-dimethyl- - TIC	2039-89-6	4.6	---	ug/l	NJ								
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	15	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	7.7	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	0.40	1.0	ug/l	J	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	1.7	5.0	ug/l	J	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Cyclopentane, methyl- - TIC	96-37-7	5.2	---	ug/l	NJ								
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7	1.0	5.0	ug/l	J								
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Hexane - TIC	110-54-3	0.16	2.0	ug/l	J								
Indane - TIC	496-11-7	7.3	---	ug/l	NJ								
Isopropylbenzene	98-82-8	7.4	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	0.27	5.0	ug/l	J	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
N-Propylbenzene - TIC	103-65-1	1.0	1.0	ug/l	---								
Naphthalene - TIC	91-20-3	4.6	5.0	ug/l	J								
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9	4.3	10	ug/l	J								
Toluene	108-88-3	0.24	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Total Alkanes - TIC	TIC1	0.16	---	ug/l	NJ								
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	0.85	3.0	ug/l	J	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSIM													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	140	100	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.30	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85529-1

		Sample Name:	PM AirShaft-230-081815				CM-275-081815				RW-10A (75-85)- 081815			
		Lab Sample ID:	490855291				490855292				490855293			
		Sample Date:	8/18/2015				8/18/2015				8/18/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2,2'-oxybis[1-chloropropane]	108-60-1	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	24	ug/l	---	ND	24	ug/l	---	ND	25	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2-Chloronaphthalene	91-58-7	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2-Chlorophenol	95-57-8	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2-Methylnaphthalene	91-57-6	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
2-Methylphenol	95-48-7	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
2-Nitroaniline	88-74-4	ND	24	ug/l	---	ND	24	ug/l	---	ND	25	ug/l	---
2-Nitrophenol	88-75-5	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5												
3-Nitroaniline	99-09-2	ND	24	ug/l	---	ND	24	ug/l	---	ND	25	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	24	ug/l	---	ND	24	ug/l	---	ND	25	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
4-Chloroaniline	106-47-8	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
4-Nitroaniline	100-01-6	ND	24	ug/l	---	ND	24	ug/l	---	ND	25	ug/l	---
4-Nitrophenol	100-02-7	ND	24	ug/l	---	ND	24	ug/l	---	ND	25	ug/l	---
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
Acenaphthene	83-32-9	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Acenaphthylene	208-96-8	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Acetophenone	98-86-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Anthracene	120-12-7	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Atrazine	1912-24-9	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Benzaldehyde	100-52-7	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Benzenesulfonamide, N-butyl- - TIC	3622-84-2												
Benzo[g,h,i]perylene	191-24-2	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Caprolactam	105-60-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Carbazole	86-74-8	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Chrysene	218-01-9	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Dibenzofuran	132-64-9	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Diethyl phthalate	84-66-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Dimethyl phthalate	131-11-3	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Diphenyl	92-52-4	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Fluoranthene	206-44-0	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Fluorene	86-73-7	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Hexachloroethane	67-72-1	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Isophorone	78-59-1	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
n-Hexadecanoic acid - TIC	57-10-3												
N-Nitrosodi-n-propylamine	621-64-7	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Naphthalene	91-20-3	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Nitrobenzene	98-95-3	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Phenanthrene	85-01-8	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Phenol	108-95-2	ND	9.6	ug/l	---	ND	9.6	ug/l	---	ND	10	ug/l	---
Pyrene	129-00-0	ND	1.9	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
OSW-8270DSIM													
Benzo[a]anthracene	56-55-3	ND	0.046	ug/l	---	ND	0.046	ug/l	---	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.046	ug/l	---	ND	0.046	ug/l	---	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.046	ug/l	---	ND	0.046	ug/l	---	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.019	ug/l	---	ND	0.019	ug/l	---	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.37	ug/l	---	ND	0.37	ug/l	---	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.74	ug/l	---	ND	0.74	ug/l	---	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.28	ug/l	---	ND	0.28	ug/l	---	ND	0.30	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85529-1

		Sample Name:	PM AirShaft-230-081815				CM-275-081815				RW-10A (75-85)- 081815			
		Lab Sample ID:	490855291				490855292				490855293			
		Sample Date:	8/18/2015				8/18/2015				8/18/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.48	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.48	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.48	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.48	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.48	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.48	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.48	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.48	ug/l	---	ND	0.45	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.035	0.020	mg/l	---	0.086	0.020	mg/l	---	ND	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic	7440-38-2	0.0030	0.0020	mg/l	B	0.0032	0.0020	mg/l	B	0.0020	0.0020	mg/l	B
Arsenic - Dissolved	7440-38-2	0.00058	0.0020	mg/l	J	0.00054	0.0020	mg/l	J	ND	0.0020	mg/l	---
Barium	7440-39-3	0.54	0.0020	mg/l	---	0.12	0.0020	mg/l	---	0.0071	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.29	0.0020	mg/l	---	0.088	0.0020	mg/l	---	0.0069	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	0.0064	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	98.9	10.0	mg/l	---	83.2	1.0	mg/l	---	51.4	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	149	50.0	mg/l	---	82.9	1.0	mg/l	---	50.2	1.0	mg/l	---
Chromium	7440-47-3	0.0088	0.0020	mg/l	---	0.016	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	0.0016	0.0020	mg/l	J	0.00094	0.0020	mg/l	J	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	0.0010	0.0020	mg/l	J	0.00055	0.0020	mg/l	J	ND	0.0020	mg/l	---
Copper	7440-50-8	0.0061	0.0020	mg/l	---	0.018	0.0020	mg/l	---	0.0040	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0019	0.0020	mg/l	J
Iron	7439-89-6	126	0.25	mg/l	---	25.5	0.025	mg/l	---	0.029	0.025	mg/l	---
Iron - Dissolved	7439-89-6	ND	0.025	mg/l	---	0.014	0.025	mg/l	J	ND	0.025	mg/l	---
Lead	7439-92-1	0.98	0.0020	mg/l	---	0.091	0.0020	mg/l	---	0.00082	0.0020	mg/l	J
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00026	0.0020	mg/l	J
Magnesium	7439-95-4	11.4	1.0	mg/l	---	22.8	1.0	mg/l	---	14.0	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	11.9	1.0	mg/l	---	24.0	1.0	mg/l	---	14.4	1.0	mg/l	---
Manganese	7439-96-5	2.1	0.020	mg/l	---	1.3	0.0020	mg/l	---	0.0019	0.0020	mg/l	J
Manganese - Dissolved	7439-96-5	2.9	0.10	mg/l	---	1.4	0.020	mg/l	---	0.00082	0.0020	mg/l	J
Nickel	7440-02-0	0.0029	0.0020	mg/l	---	0.0060	0.0020	mg/l	---	0.0059	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.0014	0.0020	mg/l	J	0.0034	0.0020	mg/l	---	0.0058	0.0020	mg/l	---
Potassium	7440-09-7	7.9	1.0	mg/l	---	4.7	1.0	mg/l	---	2.2	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	7.9	1.0	mg/l	---	4.7	1.0	mg/l	---	2.1	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	29.6	1.0	mg/l	---	82.7	1.0	mg/l	---	5.0	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	30.9	1.0	mg/l	---	87.2	1.0	mg/l	---	5.1	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0050	0.0020	mg/l	---	0.0022	0.0020	mg/l	B	0.0014	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.00089	0.0020	mg/l	UB	0.0010	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB
Zinc	7440-66-6	5.7	0.25	mg/l	---	8.2	0.25	mg/l	---	0.013	0.025	mg/l	J
Zinc - Dissolved	7440-66-6	4.6	1.3	mg/l	---	2.8	0.25	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	UJ
OSW-9056A													
Chloride	16887-00-6	11.2	1.00	mg/l	---	183	1.00	mg/l	J	3.02	1.00	mg/l	---
Sulfate	14808-79-8	ND	1.00	mg/l	---	3.46	1.00	mg/l	---	34.1	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	506	10.0	mg/l	---	249	10.0	mg/l	---	147	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	506	10.0	mg/l	---	249	10.0	mg/l	---	147	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85529-1

		Sample Name:	RW-10 (185-195)- 081815				RW-8 (163-173)- 081815				Trip Blank- 09-081915			
		Lab Sample ID:	490855294				490855295				490855296			
		Sample Date:	8/18/2015				8/18/2015				8/18/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,3-Trimethylbenzene - TIC	526-73-8												
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trimethylbenzene - TIC	95-63-6												
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	24	25	ug/l	J	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	0.27	1.0	ug/l	J	ND	1.0	ug/l	---
Benzene, 2-ethenyl-1,4-dimethyl- - TIC	2039-89-6												
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	1.6	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Cyclopentane, methyl- - TIC	96-37-7												
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7												
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Hexane - TIC	110-54-3												
Indane - TIC	496-11-7												
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
N-Propylbenzene - TIC	103-65-1												
Naphthalene - TIC	91-20-3												
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9												
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Total Alkanes - TIC	TIC1												
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSIM													
1,2,3-Trichloropropane	96-18-4	0.016	0.030	ug/l	UB	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85529-1

		Sample Name:	RW-10 (185-195)- 081815				RW-8 (163-173)- 081815				Trip Blank- 09-081915			
		Lab Sample ID:	490855294				490855295				490855296			
		Sample Date:	8/18/2015				8/18/2015				8/18/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---	ND	10	ug/l	---				
2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	---	ND	10	ug/l	---				
2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---	ND	10	ug/l	---				
2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---	ND	10	ug/l	---				
2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---	ND	25	ug/l	---				
2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---	ND	10	ug/l	---				
2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---	ND	10	ug/l	---				
2-Chloronaphthalene	91-58-7	ND	10	ug/l	---	ND	10	ug/l	---				
2-Chlorophenol	95-57-8	ND	10	ug/l	---	ND	10	ug/l	---				
2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
2-Methylphenol	95-48-7	ND	10	ug/l	---	ND	10	ug/l	---				
2-Nitroaniline	88-74-4	ND	25	ug/l	---	ND	25	ug/l	---				
2-Nitrophenol	88-75-5	ND	10	ug/l	---	ND	10	ug/l	---				
3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---	ND	10	ug/l	---				
3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---	ND	10	ug/l	---				
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5	12	---	ug/l	NJ								
3-Nitroaniline	99-09-2	ND	25	ug/l	---	ND	25	ug/l	---				
4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---	ND	25	ug/l	---				
4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chloroaniline	106-47-8	ND	10	ug/l	---	ND	10	ug/l	---				
4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---	ND	10	ug/l	---				
4-Nitroaniline	100-01-6	ND	25	ug/l	---	ND	25	ug/l	---				
4-Nitrophenol	100-02-7	ND	25	ug/l	---	ND	25	ug/l	---				
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3	3.8	---	ug/l	NJ								
Acenaphthene	83-32-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Acenaphthylene	208-96-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Acetophenone	98-86-2	ND	10	ug/l	---	ND	10	ug/l	---				
Anthracene	120-12-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Atrazine	1912-24-9	ND	10	ug/l	---	ND	10	ug/l	---				
Benzaldehyde	100-52-7	ND	10	ug/l	---	ND	10	ug/l	---				
Benzenesulfonamide, N-butyl- - TIC	3622-84-2					8.4	---	ug/l	NJ				
Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---	ND	10	ug/l	---				
Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---	ND	10	ug/l	---				
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---	ND	10	ug/l	---				
Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---	ND	10	ug/l	---				
Caprolactam	105-60-2	ND	10	ug/l	---	ND	10	ug/l	---				
Carbazole	86-74-8	ND	10	ug/l	---	ND	10	ug/l	---				
Chrysene	218-01-9	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---	ND	10	ug/l	---				
Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---	ND	10	ug/l	---				
Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Dibenzofuran	132-64-9	ND	10	ug/l	---	ND	10	ug/l	---				
Diethyl phthalate	84-66-2	ND	10	ug/l	---	ND	10	ug/l	---				
Dimethyl phthalate	131-11-3	ND	10	ug/l	---	ND	10	ug/l	---				
Diphenyl	92-52-4	ND	10	ug/l	---	ND	10	ug/l	---				
Fluoranthene	206-44-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Fluorene	86-73-7	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---	ND	10	ug/l	---				
Hexachloroethane	67-72-1	ND	10	ug/l	---	ND	10	ug/l	---				
Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Isophorone	78-59-1	ND	10	ug/l	---	ND	10	ug/l	---				
n-Hexadecanoic acid - TIC	57-10-3	5.8	---	ug/l	NJ								
N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---	ND	10	ug/l	---				
N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---	ND	10	ug/l	---				
Naphthalene	91-20-3	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Nitrobenzene	98-95-3	ND	10	ug/l	---	ND	10	ug/l	---				
Phenanthrene	85-01-8	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
Phenol	108-95-2	3.3	10	ug/l	J	ND	10	ug/l	---				
Pyrene	129-00-0	ND	2.0	ug/l	---	ND	2.0	ug/l	---				
OSW-8270DSIM													
Benzo[a]anthracene	56-55-3	ND	0.043	ug/l	---	ND	0.050	ug/l	---				
Benzo[a]pyrene	50-32-8	ND	0.043	ug/l	---	ND	0.050	ug/l	---				
Benzo[b]fluoranthene	205-99-2	ND	0.043	ug/l	---	ND	0.050	ug/l	---				
Hexachlorobenzene	118-74-1	ND	0.017	ug/l	---	ND	0.020	ug/l	---				
Hexachlorobutadiene	87-68-3	ND	0.34	ug/l	---	ND	0.40	ug/l	---				
N-Nitrosodimethylamine	62-75-9	ND	0.69	ug/l	---	ND	0.80	ug/l	---				
Pentachlorophenol	87-86-5	ND	0.26	ug/l	---	ND	0.30	ug/l	---				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85529-1

		Sample Name:	RW-10 (185-195)- 081815				RW-8 (163-173)- 081815				Trip Blank- 09-081915			
		Lab Sample ID:	490855294				490855295				490855296			
		Sample Date:	8/18/2015				8/18/2015				8/18/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.46	ug/l	---	ND	0.46	ug/l	---				
PCB-1221	11104-28-2	ND	0.46	ug/l	---	ND	0.46	ug/l	---				
PCB-1232	11141-16-5	ND	0.46	ug/l	---	ND	0.46	ug/l	---				
PCB-1242	53469-21-9	ND	0.46	ug/l	---	ND	0.46	ug/l	---				
PCB-1248	12672-29-6	ND	0.46	ug/l	---	ND	0.46	ug/l	---				
PCB-1254	11097-69-1	ND	0.46	ug/l	---	ND	0.46	ug/l	---				
PCB-1260	11096-82-5	ND	0.46	ug/l	---	ND	0.46	ug/l	---				
Polychlorinated biphenyls, Total	1336-36-3	ND	0.46	ug/l	---	ND	0.46	ug/l	---				
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.17	0.020	mg/l	---	ND	0.020	mg/l	---				
Aluminum - Dissolved	7429-90-5	0.18	0.020	mg/l	---	ND	0.020	mg/l	---				
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Arsenic	7440-38-2	0.0067	0.0020	mg/l	---	0.0036	0.0020	mg/l	B				
Arsenic - Dissolved	7440-38-2	0.0052	0.0020	mg/l	---	0.0021	0.0020	mg/l	---				
Barium	7440-39-3	0.011	0.0020	mg/l	---	0.012	0.0020	mg/l	---				
Barium - Dissolved	7440-39-3	0.011	0.0020	mg/l	---	0.012	0.0020	mg/l	---				
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Calcium	7440-70-2	47.7	1.0	mg/l	---	37.5	1.0	mg/l	---				
Calcium - Dissolved	7440-70-2	47.2	1.0	mg/l	---	35.0	1.0	mg/l	---				
Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Copper	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Iron	7439-89-6	0.014	0.025	mg/l	J	0.029	0.025	mg/l	---				
Iron - Dissolved	7439-89-6	0.030	0.025	mg/l	---	0.017	0.025	mg/l	J				
Lead	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Magnesium	7439-95-4	0.44	1.0	mg/l	J	6.2	1.0	mg/l	---				
Magnesium - Dissolved	7439-95-4	0.43	1.0	mg/l	J	6.3	1.0	mg/l	---				
Manganese	7439-96-5	ND	0.0020	mg/l	---	0.015	0.0020	mg/l	---				
Manganese - Dissolved	7439-96-5	ND	0.0020	mg/l	---	0.016	0.0020	mg/l	---				
Nickel	7440-02-0	0.0037	0.0020	mg/l	---	0.019	0.0020	mg/l	---				
Nickel - Dissolved	7440-02-0	0.0031	0.0020	mg/l	---	0.014	0.0020	mg/l	---				
Potassium	7440-09-7	11.7	1.0	mg/l	---	2.5	1.0	mg/l	---				
Potassium - Dissolved	7440-09-7	11.9	1.0	mg/l	---	2.2	1.0	mg/l	---				
Selenium	7782-49-2	0.0011	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Selenium - Dissolved	7782-49-2	0.00081	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Sodium	7440-23-5	39.0	1.0	mg/l	---	52.4	1.0	mg/l	---				
Sodium - Dissolved	7440-23-5	41.5	1.0	mg/l	---	48.9	1.0	mg/l	---				
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Vanadium	7440-62-2	0.0024	0.0020	mg/l	B	0.0012	0.0020	mg/l	UB				
Vanadium - Dissolved	7440-62-2	0.0028	0.0020	mg/l	B	0.0013	0.0020	mg/l	UB				
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---				
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---				
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---				
OSW-9056A													
Chloride	16887-00-6	4.61	1.00	mg/l	---	11.1	1.00	mg/l	---				
Sulfate	14808-79-8	123	1.00	mg/l	---	162	1.00	mg/l	---				
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	ND	10.0	mg/l	---	72.8	10.0	mg/l	---				
Total Alkalinity as CaCO3	E-14506	69.5	10.0	mg/l	---	72.8	10.0	mg/l	---				

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85529-1

		Sample Name:	PM AirShaft-230-081815				CM-275-081815				RW-10A (75-85)- 081815				RW-10 (185-195)- 081815				RW-8 (163-173)- 081815			
		Lab Sample ID:	490855291				490855292				490855293				490855294				490855295			
		Sample Date:	8/18/2015				8/18/2015				8/18/2015				8/18/2015				8/18/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																					
OSW-8260C																					
1,2,3-Trimethylbenzene - TIC	526-73-8	0.41	1.0	ug/l	J																
1,2,4-Trimethylbenzene - TIC	95-63-6	0.20	1.0	ug/l	J																
Benzene, 2-ethenyl-1,4-dimethyl- - TIC	2039-89-6	4.6	---	ug/l	NJ																
Cyclopentane, methyl- - TIC	96-37-7	5.2	---	ug/l	NJ																
Ethyl ether - TIC	60-29-7	1.0	5.0	ug/l	J																
Hexane - TIC	110-54-3	0.16	2.0	ug/l	J																
Indane - TIC	496-11-7	7.3	---	ug/l	NJ																
Naphthalene - TIC	91-20-3	4.6	5.0	ug/l	J																
Tetrahydrofuran - TIC	109-99-9	4.3	10	ug/l	J																
Total Alkanes - TIC	TIC1	0.16	---	ug/l	NJ																
GC/MS SVOC																					
OSW-8260CSIM																					
1,2,3-Trichloropropane	96-18-4													0.016	0.030	ug/l	UB				
OSW-8270D																					
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5													12	---	ug/l	NJ				
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3													3.8	---	ug/l	NJ				
Benzenesulfonamide, N-butyl- - TIC	3622-84-2																	8.4	---	ug/l	NJ
n-Hexadecanoic acid - TIC	57-10-3													5.8	---	ug/l	NJ				
Metals																					
OSW-6020A																					
Arsenic	7440-38-2	0.0030	0.0020	mg/l	B	0.0032	0.0020	mg/l	B	0.0020	0.0020	mg/l	B					0.0036	0.0020	mg/l	B
Vanadium	7440-62-2					0.0022	0.0020	mg/l	B	0.0014	0.0020	mg/l	UB	0.0024	0.0020	mg/l	B	0.0012	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.00089	0.0020	mg/l	UB	0.0010	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB	0.0028	0.0020	mg/l	B	0.0013	0.0020	mg/l	UB
General Chemistry																					
OSW-9012B																					
Cyanide, Total	57-12-5									ND	0.010	mg/l	UJ								
OSW-9056A																					
Chloride	16887-00-6					183	1.00	mg/l	J												

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

09/21/2015

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
85529

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Carr	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filtert)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
				Preservation Code:																	
PMAirShaft-230-081815	8/18/15	10:50	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
CM-275-081815	8/18/15	13:20	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
RW-10A (75-85)-081815	8/18/15	10:25	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
RW-10 (185-195)-081815	8/18/15	11:35	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
RW-8 (163-173)-081815	8/18/15	14:15	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
TB-09-081915	8/19/15	—	—	Water	✓	✓	✓	✓													
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[illegible]	8/19/15 900	Cornerstone	James Thorn	8/19/15 900	TA
James Thorn	8/19/15 1145	TA	[illegible] 0.2/2.5	8/20/15 0920	TAN

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

F1

E-Mail Date: 2015-10-12
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-85780-1

PREPARED BY:
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1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-85780-1	8/21/2015	8/22/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM

GCMS VOC Continuing Calibration Verification standards 278001/3 analyzed on 9/1 and CCV 278444/2 analyzed on 9/2 had multiple responses outside of laboratory control limits. High bias outliers did not have an effect on client sample data or were not associated with target analytes for this submittal. Low bias recoveries were observed for target analytes chloromethane and methyl acetate in the CCV from 9/1 and chloromethane, bromomethane, acetone and methyl acetate from 9/2. All client sample methyl acetate, acetone, bromomethane and chloromethane results should be considered to be estimated and qualified with UJ flags if non-detect and J flags if detected based on these low bias CCV responses.

GCMS SVOC and SIM

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

PCB

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

METALS

Client sample -003 total manganese result was above the instrument linear dynamic range (LDR) so this result should be considered to be estimated and qualified with an E flag.

INORGANICS

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:

GCMS VOC

CCV outliers were not associated with target analytes for this submittal.

GCMS VOC-SIM

CCV for sequence 276673 on 8/27 had outliers that were not associated with reported sample results. ICV for sequence 277064 on 8/28 were reported on form VII as outliers based on known spike values reported. Verification with laboratory indicated that the known spike values should have been 10 and 0.5 (instead of 2000/100) as was historically reported for other sequences to these ICV recoveries were considered to be acceptable when compared to these historical values.

CCV 278441 had one surrogate outlier biased high – qualification of client sample results was not required based on this surrogate recovery outlier.

GCMS SVOC

Sample -010 was received with a pH of 14 according to the laboratory prep log. Sample was acidified to pH 2 prior to the initial extraction so qualification was not made based on this sample condition.

QC batch 276471 MS/MSD was not spiked during QC prep and was consequentially re-extracted outside of the referenced hold time criteria.

GCMS SVOC-SIM

Sample -008 and -011was received at a pH of 11 according to the laboratory prep log. Sample was acidified to pH 2 prior to the initial extraction so qualification was not made based on this sample condition.

METALS

No additional observations to report.

PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not result in qualification of final client sample results.

RAW DATA NOT INCLUDED IN ORIGINAL LAB LEVEL 4 DATA PACKAGE:

DISSOLVED MERCURY – Sample raw data was not included – duplicate of total mercury run was reported instead.

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank was non-detect for all target analytes.

GCMS-VOC SIM QC batch 278441 CCV response outliers as noted in the laboratory submittal case narrative were not used to qualify results as part of this level 2 data package review.

GCMS-VOC SIM QC batch 278441 LCS and LCSduplicate recoveries were outliers biased low for ethylene dibromide. Qualification of client sample results was not required based on this QC outlier.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

GCMS VOC QC batch 278444 LCS recovery was an outlier biased high for cyclohexane. Qualification of client sample results was not required based on these high bias QC outliers.

GCMS VOC QC batch 278444 method blank had a detection below the RL for methylene chloride. Qualification of client sample results was not required based on this method blank detection.

GCMS VOC sample -005 MSD recovery only was an outlier biased high for cyclohexane. Qualification of client sample results was not required based on this QC outlier alone.

GCMS VOC SIM QC batch 277754 MS recoveries were not performed due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

GCMS SVOC and GCMS-SIM SVOC sample -005 MS recoveries were not reported in the laboratory submittal QC summary. These QC results will be evaluated as part of the level 4 data package review to follow.

GCMS SVOC-SIM sample -005 was re-analyzed outside of the referenced holding time so these re-analysis results should be considered to be estimated and qualified with J flags if detected and UJ flags if noon-detect.

GCMS SVOC QC batch 277998 LCS recoveries were outliers biased high for benzaldehyde. Qualification of client sample results was not required based on this high bias QC outlier.

Note: sample -008 preservation outlier (pH of 11) could not be evaluated based on the level 2 data package so will be addressed as part of the level 4 data package review.

PCB sample -008 was not analyzed due to insufficient sample volume available.

GCMS-SIM SVOC surrogate recoveries were outliers biased low and less than 10% for at least 1 out of 3 acid fraction surrogates in client samples -004, -005, -008 and -010. Base-neutral fraction surrogates were outliers biased low and less than 10% for at least 1 out of 3 base-neutral surrogates in client samples -005, -008 and -010 and 1 out of 3 base-neutral fraction surrogates was an outlier biased low but greater than 10% for client sample -004. Client sample -004, -005, -008 and -010 initial analysis GCMS SVOC-SIM acid fraction results and client samples -005, -008 and -010 base-neutral fraction results should be considered to be unusable and qualified with R flags if non-detect and estimated with J flags if detected. Samples -004, -005, -008 and -010 were re-analyzed outside of the referenced holding time so these re-analysis results should all be considered to be estimated and qualified with J flags if detected and UJ flags if non-detect. Surrogate recovery outliers for QC batch 277998 LCS did not require qualification of client sample results.

GCMS-SIM SVOC LCS/LCSduplicate RPD for QC batch 277972 was an outlier for pentachlorophenol. Qualification of client sample results was not required based on this QC outlier alone.

Metals method blanks had detections below the RL in QC batch 275892 and 276511 for total and dissolved vanadium. Client samples -001, -002, -003, -004, -005, -006, -007 dissolved vanadium results and client samples -001, -002, -003, -004, -005, -007, -008 total vanadium results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -006 total vanadium results should be considered to be non-detect at the concentration reported and qualified with B flags.

Cyanide sample -005 MS recovery only was an outlier biased low. Qualification of client sample results is not required based on this QC outlier alone. QC batch 276133 MS recovery outliers were not determined using samples from this submittal.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.
If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.
All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.
CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6°C after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 85780-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	Mercury (Manual Cold Vapor)(D)	Mercury (Manual Cold Vapor)	TOTAL AND AMENABLE CYANIDE (AUTOMATED COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Inorganic Anions by IC	Alkalinity Prep
490857801	SW-PAB-03-082115	8/21/2015	10:30:00	X	X	X	X	X	X	X	X	X	X	X	X
4908578010	RW-2 (279-289)-082115	8/21/2015	1:45:00	X	X	X	X	X	X	X	X	X	X	X	X
490857802	SW-PAB-02-082115	8/21/2015	11:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490857803	SW-PAB-01A-082115	8/21/2015	12:20:00	X	X	X	X	X	X	X	X	X	X	X	X
490857804	SW-PAB-01-082115	8/21/2015	12:45:00	X	X	X	X	X	X	X	X	X	X	X	X
490857805	SW-11-082115	8/21/2015	1:10:00	X	X	X	X	X	X	X	X	X	X	X	X
490857806	SW-PAB-00-082115	8/21/2015	1:50:00	X	X	X	X	X	X	X	X	X	X	X	X
490857807	RW-9A (85-95)-082115	8/21/2015	10:45:00	X	X	X	X	X	X	X	X	X	X	X	X
490857808	RW-9 (206-216)-082115	8/21/2015	9:25:00	X	X	X	X			X		X	X		
490857809	TB-12-082115	8/21/2015	1:00:00	X	X										

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85780-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
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NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85780-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85780-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85780-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-03-082115				RW-2 (279-289)-082115				SW-PAB-02-082115			
		Lab Sample ID:	490857801				4908578010				490857802			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	0.24	1.0	ug/l	J	ND	1.0	ug/l	---
1-Propene, 2-methyl- - TIC	115-11-7					3.0	---	ug/l	NJ				
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	3.2	50	ug/l	J	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	UJ	12	25	ug/l	J	ND	25	ug/l	UJ
Benzene	71-43-2	ND	1.0	ug/l	---	0.22	1.0	ug/l	J	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	2.3	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7					1.5	5.0	ug/l	J				
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	0.25	1.0	ug/l	J	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9					3.3	10	ug/l	J				
Toluene	108-88-3	ND	1.0	ug/l	---	0.83	1.0	ug/l	J	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2					62	---	ug/l	NJ				
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	0.29	10	ug/l	J	10	10	ug/l	---	0.79	10	ug/l	J
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-03-082115				RW-2 (279-289)-082115				SW-PAB-02-082115			
		Lab Sample ID:	490857801				4908578010				490857802			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	1,2-Benzenedicarboxylic acid, diisooctyl - TIC	27554-26-3												
	1,4-Benzenediamine, N-(1-methylethyl)-N' - TIC	101-72-4					5.9	---	ug/l	NJ				
	2(3H)-Benzothiazolone - TIC	934-34-9					3.8	---	ug/l	NJ				
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	22	ug/l	---	ND	25	ug/l	---	ND	23	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2,6,10,14,18,22-Tetracosahexaene, 2,6,10 - TIC	111-02-4									3.2	---	ug/l	NJ
	2,6-Dinitrotoluene	606-20-2	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2-Chlorophenol	95-57-8	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2-Methylnaphthalene	91-57-6	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	2-Methylphenol	95-48-7	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	2-Nitroaniline	88-74-4	ND	22	ug/l	---	ND	25	ug/l	---	ND	23	ug/l	---
	2-Nitrophenol	88-75-5	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5					33	---	ug/l	NJ				
	3-Nitroaniline	99-09-2	ND	22	ug/l	---	ND	25	ug/l	---	ND	23	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	22	ug/l	---	ND	25	ug/l	---	ND	23	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	4-Chloroaniline	106-47-8	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	4-Nitroaniline	100-01-6	ND	22	ug/l	---	ND	25	ug/l	---	ND	23	ug/l	---
	4-Nitrophenol	100-02-7	ND	22	ug/l	---	ND	25	ug/l	---	ND	23	ug/l	---
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3					17	---	ug/l	NJ				
	9-Octadecenoic acid, (E)- - TIC	112-79-8												
	Acenaphthene	83-32-9	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Acenaphthylene	208-96-8	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Acetic acid, chloro-, octadecyl ester - TIC	5348-82-3									4.1	---	ug/l	NJ
	Acetophenone	98-86-2	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Anthracene	120-12-7	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Atrazine	1912-24-9	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Benzaldehyde	100-52-7	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Benzenesulfonamide, 2-methyl- - TIC	88-19-7					9.6	---	ug/l	NJ				
	Benzenesulfonamide, N-butyl- - TIC	3622-84-2												
	Benzoic acid, 3,5-bis(1,1-dimethylethyl) - TIC	1421-49-4												
	Benzo[g,h,i]perylene	191-24-2	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Bis(2-chloroethoxy)methane	111-91-1	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Caprolactam	105-60-2	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Carbazole	86-74-8	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Chrysene	218-01-9	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Di-n-butyl phthalate	84-74-2	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Dibenzofuran	132-64-9	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Diethyl phthalate	84-66-2	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Diethylene glycol dibenzoate - TIC	120-55-8												
	Dimethyl phthalate	131-11-3	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Diphenyl	92-52-4	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Fluoranthene	206-44-0	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Fluorene	86-73-7	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Heptadecane - TIC	629-78-7												
	Hexachlorocyclopentadiene	77-47-4	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Hexachloroethane	67-72-1	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Isophorone	78-59-1	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	N-Nitrosodi-n-propylamine	621-64-7	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Naphthalene	91-20-3	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Nitrobenzene	98-95-3	ND	8.9	ug/l	---	ND	9.8	ug/l	---	ND	9.1	ug/l	---
	Octadecanoic acid - TIC	57-11-4	3.8	---	ug/l	NJ	4.9	---	ug/l	NJ				
	Octaethylene glycol monododecyl ether - TIC	3055-98-9												
	Oleic Acid - TIC	112-80-1					11	---	ug/l	NJ	14	---	ug/l	NJ
	Oxirane, heptadecyl- - TIC	67860-04-2									3.2	---	ug/l	NJ
	Phenanthrene	85-01-8	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Phenol	108-95-2	ND	8.9	ug/l	---	1.7	9.8	ug/l	J	ND	9.1	ug/l	---
	Pyrene	129-00-0	ND	1.8	ug/l	---	ND	2.0	ug/l	---	ND	1.8	ug/l	---
	Tetraethyleneglycol monomethylether - TIC	23783-42-8					3.5	---	ug/l	NJ				
	Tridecanoic acid - TIC	638-53-9												
	[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0									4.6	---	ug/l	NJ

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-03-082115				RW-2 (279-289)-082115				SW-PAB-02-082115			
		Lab Sample ID:	490857801				4908578010				490857802			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	R	ND	0.050	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	R	ND	0.050	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	R	ND	0.050	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	R	ND	0.020	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	R	ND	0.40	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	R	ND	0.80	ug/l	---
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	R	ND	0.30	ug/l	---
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.45	ug/l	---
PCB-1221	11104-28-2	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.45	ug/l	---
PCB-1232	11141-16-5	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.45	ug/l	---
PCB-1242	53469-21-9	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.45	ug/l	---
PCB-1248	12672-29-6	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.45	ug/l	---
PCB-1254	11097-69-1	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.45	ug/l	---
PCB-1260	11096-82-5	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.45	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.46	ug/l	---	ND	0.50	ug/l	---	ND	0.45	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	ND	0.020	mg/l	---	0.25	0.020	mg/l	---	0.010	0.020	mg/l	J
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	0.25	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.00098	0.0020	mg/l	J	0.00069	0.0020	mg/l	J	0.0010	0.0020	mg/l	J
Arsenic	7440-38-2	0.00054	0.0020	mg/l	J	0.0019	0.0020	mg/l	J	0.00056	0.0020	mg/l	J
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	0.0021	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.062	0.0020	mg/l	---	0.032	0.0020	mg/l	---	0.073	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.060	0.0020	mg/l	---	0.038	0.0020	mg/l	---	0.067	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	25.3	1.0	mg/l	---	132	20.0	mg/l	---	29.4	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	22.1	1.0	mg/l	---	134	5.0	mg/l	---	27.3	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.0030	0.0020	mg/l	---
Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	0.00055	0.0020	mg/l	J	ND	0.0020	mg/l	---
Iron	7439-89-6	3.7	0.025	mg/l	---	0.015	0.025	mg/l	J	2.8	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.073	0.025	mg/l	---	ND	0.025	mg/l	---	0.082	0.025	mg/l	---
Lead	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	4.1	1.0	mg/l	---	ND	1.0	mg/l	---	5.0	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	3.8	1.0	mg/l	---	ND	1.0	mg/l	---	4.9	1.0	mg/l	---
Manganese	7439-96-5	0.76	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.98	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.69	0.0020	mg/l	---	0.00050	0.0020	mg/l	J	0.60	0.0020	mg/l	---
Nickel	7440-02-0	ND	0.0020	mg/l	---	0.0029	0.0020	mg/l	---	ND	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---	0.0032	0.0020	mg/l	---	0.00053	0.0020	mg/l	J
Potassium	7440-09-7	0.58	1.0	mg/l	J	23.6	1.0	mg/l	---	1.4	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	0.52	1.0	mg/l	J	25.1	1.0	mg/l	---	1.4	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	0.00086	0.0020	mg/l	J	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	0.00069	0.0020	mg/l	J	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	7.1	1.0	mg/l	---	134	20.0	mg/l	---	5.4	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	6.4	1.0	mg/l	---	125	5.0	mg/l	---	5.3	1.0	mg/l	---
Thallium	7440-28-0	0.0011	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.00033	0.0020	mg/l	J
Thallium - Dissolved	7440-28-0	0.00088	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.00040	0.0020	mg/l	J
Vanadium	7440-62-2	0.0014	0.0020	mg/l	UB	0.018	0.0020	mg/l	---	0.0014	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.00078	0.0020	mg/l	UB	0.017	0.0020	mg/l	---	0.00079	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	0.023	0.025	mg/l	J
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	8.42	1.00	mg/l	---	194	1.00	mg/l	---	3.88	1.00	mg/l	---
Sulfate	14808-79-8	5.04	1.00	mg/l	---	176	5.00	mg/l	---	0.78	1.00	mg/l	J
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	65.6	10.0	mg/l	---	ND	10.0	mg/l	---	88.4	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	65.6	10.0	mg/l	---	104	10.0	mg/l	---	88.4	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-01A-082115				SW-PAB-01-082115				SW-11-082115			
		Lab Sample ID:	490857803				490857804				490857805			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Propene, 2-methyl- - TIC	115-11-7												
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	UJ	ND	25	ug/l	UJ	ND	25	ug/l	UJ
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7												
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9												
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2												
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	2.1	10	ug/l	J	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-01A-082115				SW-PAB-01-082115				SW-11-082115			
		Lab Sample ID:	490857803				490857804				490857805			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
1,2-Benzenedicarboxylic acid, diisooctyl - TIC	27554-26-3	3.3	---	ug/l	NJ								
1,4-Benzenediamine, N-(1-methylethyl)-N' - TIC	101-72-4												
2(3H)-Benzothiazolone - TIC	934-34-9												
2,2'-oxybis[1-chloropropane]	108-60-1	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2,3,4,6-Tetrachlorophenol	58-90-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	23	ug/l	---	ND	22	ug/l	---	ND	23	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2,6,10,14,18,22-Tetracosahexaene, 2,6,10 - TIC	111-02-4												
2,6-Dinitrotoluene	606-20-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2-Chloronaphthalene	91-58-7	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2-Chlorophenol	95-57-8	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2-Methylnaphthalene	91-57-6	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
2-Methylphenol	95-48-7	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
2-Nitroaniline	88-74-4	ND	23	ug/l	---	ND	22	ug/l	---	ND	23	ug/l	---
2-Nitrophenol	88-75-5	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5												
3-Nitroaniline	99-09-2	ND	23	ug/l	---	ND	22	ug/l	---	ND	23	ug/l	---
4,6-Dinitro-2-methylphenol	534-52-1	ND	23	ug/l	---	ND	22	ug/l	---	ND	23	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
4-Chloroaniline	106-47-8	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
4-Nitroaniline	100-01-6	ND	23	ug/l	---	ND	22	ug/l	---	ND	23	ug/l	---
4-Nitrophenol	100-02-7	ND	23	ug/l	---	ND	22	ug/l	---	ND	23	ug/l	---
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3												
9-Octadecenoic acid, (E)- - TIC	112-79-8	6.5	---	ug/l	NJ								
Acenaphthene	83-32-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Acenaphthylene	208-96-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Acetic acid, chloro-, octadecyl ester - TIC	5348-82-3												
Acetophenone	98-86-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Anthracene	120-12-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Atrazine	1912-24-9	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Benzaldehyde	100-52-7	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Benzenesulfonamide, 2-methyl- - TIC	88-19-7												
Benzenesulfonamide, N-butyl- - TIC	3622-84-2												
Benzoic acid, 3,5-bis(1,1-dimethylethyl) - TIC	1421-49-4												
Benzo[g,h,i]perylene	191-24-2	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Caprolactam	105-60-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Carbazole	86-74-8	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Chrysene	218-01-9	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Dibenzofuran	132-64-9	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Diethyl phthalate	84-66-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Diethylene glycol dibenzoate - TIC	120-55-8									8.1	---	ug/l	NJ
Dimethyl phthalate	131-11-3	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Diphenyl	92-52-4	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Fluoranthene	206-44-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Fluorene	86-73-7	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Heptadecane - TIC	629-78-7					4.2	---	ug/l	NJ				
Hexachlorocyclopentadiene	77-47-4	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Hexachloroethane	67-72-1	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Isophorone	78-59-1	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
N-Nitrosodi-n-propylamine	621-64-7	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Naphthalene	91-20-3	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Nitrobenzene	98-95-3	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Octadecanoic acid - TIC	57-11-4	3.2	---	ug/l	NJ								
Octaethylene glycol monododecyl ether - TIC	3055-98-9	3.1	---	ug/l	NJ								
Oleic Acid - TIC	112-80-1									6.9	---	ug/l	NJ
Oxirane, heptadecyl- - TIC	67860-04-2												
Phenanthrene	85-01-8	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Phenol	108-95-2	ND	9.1	ug/l	---	ND	8.8	ug/l	---	ND	9.1	ug/l	---
Pyrene	129-00-0	ND	1.8	ug/l	---	ND	1.8	ug/l	---	ND	1.8	ug/l	---
Tetraethyleneglycol monomethylether - TIC	23783-42-8												
Tridecanoic acid - TIC	638-53-9	4.9	---	ug/l	NJ								
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0												

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-01A-082115				SW-PAB-01-082115				SW-11-082115			
		Lab Sample ID:	490857803				490857804				490857805			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	R
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	R
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	R
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	R
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	R
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	R
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	R	0.11	0.30	ug/l	J
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.45	ug/l	---	ND	0.43	ug/l	---	ND	0.43	ug/l	---
PCB-1221	11104-28-2	ND	0.45	ug/l	---	ND	0.43	ug/l	---	ND	0.43	ug/l	---
PCB-1232	11141-16-5	ND	0.45	ug/l	---	ND	0.43	ug/l	---	ND	0.43	ug/l	---
PCB-1242	53469-21-9	ND	0.45	ug/l	---	ND	0.43	ug/l	---	ND	0.43	ug/l	---
PCB-1248	12672-29-6	ND	0.45	ug/l	---	ND	0.43	ug/l	---	ND	0.43	ug/l	---
PCB-1254	11097-69-1	ND	0.45	ug/l	---	ND	0.43	ug/l	---	ND	0.43	ug/l	---
PCB-1260	11096-82-5	ND	0.45	ug/l	---	ND	0.43	ug/l	---	ND	0.43	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.45	ug/l	---	ND	0.43	ug/l	---	ND	0.43	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.051	0.020	mg/l	---	0.033	0.020	mg/l	---	0.065	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	0.016	0.020	mg/l	J
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.00084	0.0020	mg/l	J	0.0010	0.0020	mg/l	J	0.0011	0.0020	mg/l	J
Arsenic	7440-38-2	0.0013	0.0020	mg/l	J	0.00052	0.0020	mg/l	J	ND	0.0020	mg/l	---
Arsenic - Dissolved	7440-38-2	0.00062	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.065	0.0020	mg/l	---	0.044	0.0020	mg/l	---	0.0081	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.050	0.0020	mg/l	---	0.047	0.0020	mg/l	---	0.0079	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	28.8	1.0	mg/l	---	9.8	1.0	mg/l	---	10.2	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	27.0	1.0	mg/l	---	8.8	1.0	mg/l	---	9.8	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	0.00070	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	ND	0.0020	mg/l	---	0.00056	0.0020	mg/l	J	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	0.00053	0.0020	mg/l	J	0.00073	0.0020	mg/l	J	0.00077	0.0020	mg/l	J
Iron	7439-89-6	7.3	0.025	mg/l	---	3.1	0.025	mg/l	---	0.17	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.81	0.025	mg/l	---	0.34	0.025	mg/l	---	0.063	0.025	mg/l	---
Lead	7439-92-1	0.00028	0.0020	mg/l	J	0.00061	0.0020	mg/l	J	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	5.0	1.0	mg/l	---	2.2	1.0	mg/l	---	2.8	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	5.1	1.0	mg/l	---	2.1	1.0	mg/l	---	2.9	1.0	mg/l	---
Manganese	7439-96-5	2.0	0.0020	mg/l	E	0.30	0.0020	mg/l	---	0.022	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	1.5	0.0020	mg/l	---	0.30	0.0020	mg/l	---	0.015	0.0020	mg/l	---
Nickel	7440-02-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.00052	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.00052	0.0020	mg/l	J
Potassium	7440-09-7	1.7	1.0	mg/l	---	0.74	1.0	mg/l	J	0.58	1.0	mg/l	J
Potassium - Dissolved	7440-09-7	1.7	1.0	mg/l	---	0.68	1.0	mg/l	J	0.58	1.0	mg/l	J
Selenium	7782-49-2	0.00063	0.0020	mg/l	J	0.00074	0.0020	mg/l	J	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	4.5	1.0	mg/l	---	3.5	1.0	mg/l	---	3.6	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	3.6	1.0	mg/l	---	3.2	1.0	mg/l	---	3.6	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	0.00079	0.0020	mg/l	J
Thallium - Dissolved	7440-28-0	0.00020	0.0020	mg/l	J	ND	0.0020	mg/l	---	0.00068	0.0020	mg/l	J
Vanadium	7440-62-2	0.0017	0.0020	mg/l	UB	0.0016	0.0020	mg/l	UB	0.0018	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.00079	0.0020	mg/l	UB	0.00090	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	1.75	1.00	mg/l	---	1.07	1.00	mg/l	---	1.08	1.00	mg/l	---
Sulfate	14808-79-8	1.74	1.00	mg/l	---	4.78	1.00	mg/l	---	7.00	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	92.1	10.0	mg/l	---	32.4	10.0	mg/l	---	30.6	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	92.1	10.0	mg/l	---	32.4	10.0	mg/l	---	30.6	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-00-082115				RW-9A (85-95)-082115				RW-9 (206-216)-082115			
		Lab Sample ID:	490857806				490857807				490857808			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1-Propene, 2-methyl- - TIC	115-11-7												
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	11	50	ug/l	J	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	UJ	3.9	25	ug/l	J	5.6	25	ug/l	J
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7												
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9												
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	0.20	1.0	ug/l	J
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Unknown - TIC	Tic2												
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-00-082115				RW-9A (85-95)-082115				RW-9 (206-216)-082115			
		Lab Sample ID:	490857806				490857807				490857808			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015			
	Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC														
OSW-8270D														
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	1,2-Benzenedicarboxylic acid, diisooctyl - TIC	27554-26-3												
	1,4-Benzenediamine, N-(1-methylethyl)-N' - TIC	101-72-4												
	2(3H)-Benzothiazolone - TIC	934-34-9												
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2,4,5-Trichlorophenol	95-95-4	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2,4,6-Trichlorophenol	88-06-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2,4-Dichlorophenol	120-83-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2,4-Dimethylphenol	105-67-9	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2,4-Dinitrophenol	51-28-5	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
	2,4-Dinitrotoluene	121-14-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2,6,10,14,18,22-Tetracosahexaene, 2,6,10 - TIC	111-02-4												
	2,6-Dinitrotoluene	606-20-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2-Chloronaphthalene	91-58-7	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2-Chlorophenol	95-57-8	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2-Methylnaphthalene	91-57-6	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	2-Methylphenol	95-48-7	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	2-Nitroaniline	88-74-4	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
	2-Nitrophenol	88-75-5	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	3 & 4 Methylphenol	65794-96-9	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	3,3'-Dichlorobenzidine	91-94-1	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5									22	---	ug/l	NJ
	3-Nitroaniline	99-09-2	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
	4,6-Dinitro-2-methylphenol	534-52-1	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
	4-Bromophenyl phenyl ether	101-55-3	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	4-Chloro-3-methylphenol	59-50-7	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	4-Chloroaniline	106-47-8	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	4-Chlorophenyl phenyl ether	7005-72-3	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	4-Nitroaniline	100-01-6	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
	4-Nitrophenol	100-02-7	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3									6.0	---	ug/l	NJ
	9-Octadecenoic acid, (E)- - TIC	112-79-8					14	---	ug/l	NJ				
	Acenaphthene	83-32-9	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Acenaphthylene	208-96-8	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Acetic acid, chloro-, octadecyl ester - TIC	5348-82-3												
	Acetophenone	98-86-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Anthracene	120-12-7	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Atrazine	1912-24-9	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Benzaldehyde	100-52-7	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Benzenesulfonamide, 2-methyl- - TIC	88-19-7												
	Benzenesulfonamide, N-butyl- - TIC	3622-84-2									15	---	ug/l	NJ
	Benzoic acid, 3,5-bis(1,1-dimethylethyl) - TIC	1421-49-4									4.8	---	ug/l	NJ
	Benzo[g,h,i]perylene	191-24-2	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Benzo[k]fluoranthene	207-08-9	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Bis(2-chloroethoxy)methane	111-91-1	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Bis(2-chloroethyl)ether	111-44-4	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Butyl benzyl phthalate	85-68-7	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Caprolactam	105-60-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Carbazole	86-74-8	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Chrysene	218-01-9	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Di-n-butyl phthalate	84-74-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Di-n-octyl phthalate	117-84-0	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Dibenz(a,h)anthracene	53-70-3	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Dibenzofuran	132-64-9	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Diethyl phthalate	84-66-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Diethylene glycol dibenzoate - TIC	120-55-8												
	Dimethyl phthalate	131-11-3	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Diphenyl	92-52-4	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Fluoranthene	206-44-0	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Fluorene	86-73-7	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Heptadecane - TIC	629-78-7												
	Hexachlorocyclopentadiene	77-47-4	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Hexachloroethane	67-72-1	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Isophorone	78-59-1	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	N-Nitrosodi-n-propylamine	621-64-7	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	N-Nitrosodiphenylamine	86-30-6	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Naphthalene	91-20-3	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Nitrobenzene	98-95-3	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Octadecanoic acid - TIC	57-11-4												
	Octaethylene glycol monododecyl ether - TIC	3055-98-9												
	Oleic Acid - TIC	112-80-1	5.7	---	ug/l	NJ					17	---	ug/l	NJ
	Oxirane, heptadecyl- - TIC	67860-04-2												
	Phenanthrene	85-01-8	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Phenol	108-95-2	ND	8.8	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
	Pyrene	129-00-0	ND	1.8	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
	Tetraethyleneglycol monomethylether - TIC	23783-42-8												
	Tridecanoic acid - TIC	638-53-9									5.6	---	ug/l	NJ
	[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0												

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-00-082115				RW-9A (85-95)-082115				RW-9 (206-216)-082115			
		Lab Sample ID:	490857806				490857807				490857808			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	R
Benzo[a]pyrene	50-32-8	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	R
Benzo[b]fluoranthene	205-99-2	ND	0.050	ug/l	---	ND	0.050	ug/l	---	ND	0.050	ug/l	R
Hexachlorobenzene	118-74-1	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	R
Hexachlorobutadiene	87-68-3	ND	0.40	ug/l	---	ND	0.40	ug/l	---	ND	0.40	ug/l	R
N-Nitrosodimethylamine	62-75-9	ND	0.80	ug/l	---	ND	0.80	ug/l	---	ND	0.80	ug/l	R
Pentachlorophenol	87-86-5	ND	0.30	ug/l	---	ND	0.30	ug/l	---	ND	0.30	ug/l	R
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1254	11097-69-1	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---				
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.18	0.020	mg/l	---	0.059	0.020	mg/l	---	0.10	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	0.016	0.020	mg/l	J	ND	0.020	mg/l	---				
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	0.00050	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Arsenic	7440-38-2	ND	0.0020	mg/l	---	0.0032	0.0020	mg/l	---	0.0030	0.0020	mg/l	---
Arsenic - Dissolved	7440-38-2	ND	0.0020	mg/l	---	0.0034	0.0020	mg/l	---				
Barium	7440-39-3	0.0098	0.0020	mg/l	---	0.012	0.0020	mg/l	---	0.035	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.0086	0.0020	mg/l	---	0.012	0.0020	mg/l	---				
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---				
Calcium	7440-70-2	10.8	1.0	mg/l	---	26.5	1.0	mg/l	---	27.6	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	10.2	1.0	mg/l	---	23.2	1.0	mg/l	---				
Chromium	7440-47-3	0.00057	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Cobalt	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Copper	7440-50-8	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	0.00074	0.0020	mg/l	J	ND	0.0020	mg/l	---				
Iron	7439-89-6	0.23	0.025	mg/l	---	0.34	0.025	mg/l	---	0.092	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.035	0.025	mg/l	---	0.060	0.025	mg/l	---				
Lead	7439-92-1	0.00036	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Magnesium	7439-95-4	3.0	1.0	mg/l	---	5.6	1.0	mg/l	---	17.6	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	2.9	1.0	mg/l	---	5.1	1.0	mg/l	---				
Manganese	7439-96-5	0.028	0.0020	mg/l	---	0.046	0.0020	mg/l	---	0.0046	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.0026	0.0020	mg/l	---	0.038	0.0020	mg/l	---				
Nickel	7440-02-0	ND	0.0020	mg/l	---	0.0049	0.0020	mg/l	---	0.00057	0.0020	mg/l	J
Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---	0.00096	0.0020	mg/l	J				
Potassium	7440-09-7	0.64	1.0	mg/l	J	2.7	1.0	mg/l	---	50.9	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	0.59	1.0	mg/l	J	2.2	1.0	mg/l	---				
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Sodium	7440-23-5	4.5	1.0	mg/l	---	5.9	1.0	mg/l	---	162	20.0	mg/l	---
Sodium - Dissolved	7440-23-5	4.2	1.0	mg/l	---	6.4	1.0	mg/l	---				
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---				
Vanadium	7440-62-2	0.0020	0.0020	mg/l	B	0.0014	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0013	0.0020	mg/l	UB	0.00098	0.0020	mg/l	UB				
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---				
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---				
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	ND	0.010	mg/l	---	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	1.01	1.00	mg/l	---	1.52	1.00	mg/l	---				
Sulfate	14808-79-8	8.15	1.00	mg/l	---	14.2	1.00	mg/l	---				
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	31.4	10.0	mg/l	---	76.6	10.0	mg/l	---				
Total Alkalinity as CaCO3	E-14506	31.4	10.0	mg/l	---	76.6	10.0	mg/l	---				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

Sample Name: TB-12-082115
Lab Sample ID: 490857809
Sample Date: 8/21/2015

Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier
GC/MS VOC					
OSW-8260C					
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---
1-Propene, 2-methyl- - TIC	115-11-7				
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	UJ
Benzene	71-43-2	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	UJ
Carbon disulfide	75-15-0	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7				
Ethylbenzene	100-41-4	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9				
Toluene	108-88-3	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---
Unknown - TIC	Tic2				
Vinyl chloride	75-01-4	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---
OSW-8260CSim					
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

Sample Name: TB-12-082115
Lab Sample ID: 490857809
Sample Date: 8/21/2015

Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier
GC/MS SVOC					
OSW-8270D					
1,2,4,5-Tetrachlorobenzene	95-94-3				
1,2-Benzenedicarboxylic acid, diisooctyl - TIC	27554-26-3				
1,4-Benzenediamine, N-(1-methylethyl)-N' - TIC	101-72-4				
2(3H)-Benzothiazolone - TIC	934-34-9				
2,2'-oxybis[1-chloropropane]	108-60-1				
2,3,4,6-Tetrachlorophenol	58-90-2				
2,4,5-Trichlorophenol	95-95-4				
2,4,6-Trichlorophenol	88-06-2				
2,4-Dichlorophenol	120-83-2				
2,4-Dimethylphenol	105-67-9				
2,4-Dinitrophenol	51-28-5				
2,4-Dinitrotoluene	121-14-2				
2,6,10,14,18,22-Tetracosahexaene, 2,6,10 - TIC	111-02-4				
2,6-Dinitrotoluene	606-20-2				
2-Chloronaphthalene	91-58-7				
2-Chlorophenol	95-57-8				
2-Methylnaphthalene	91-57-6				
2-Methylphenol	95-48-7				
2-Nitroaniline	88-74-4				
2-Nitrophenol	88-75-5				
3 & 4 Methylphenol	65794-96-9				
3,3'-Dichlorobenzidine	91-94-1				
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5				
3-Nitroaniline	99-09-2				
4,6-Dinitro-2-methylphenol	534-52-1				
4-Bromophenyl phenyl ether	101-55-3				
4-Chloro-3-methylphenol	59-50-7				
4-Chloroaniline	106-47-8				
4-Chlorophenyl phenyl ether	7005-72-3				
4-Nitroaniline	100-01-6				
4-Nitrophenol	100-02-7				
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3				
9-Octadecenoic acid, (E)- - TIC	112-79-8				
Acenaphthene	83-32-9				
Acenaphthylene	208-96-8				
Acetic acid, chloro-, octadecyl ester - TIC	5348-82-3				
Acetophenone	98-86-2				
Anthracene	120-12-7				
Atrazine	1912-24-9				
Benzaldehyde	100-52-7				
Benzenesulfonamide, 2-methyl- - TIC	88-19-7				
Benzenesulfonamide, N-butyl- - TIC	3622-84-2				
Benzoic acid, 3,5-bis(1,1-dimethylethyl) - TIC	1421-49-4				
Benzo[g,h,i]perylene	191-24-2				
Benzo[k]fluoranthene	207-08-9				
Bis(2-chloroethoxy)methane	111-91-1				
Bis(2-chloroethyl)ether	111-44-4				
Bis(2-ethylhexyl) phthalate	117-81-7				
Butyl benzyl phthalate	85-68-7				
Caprolactam	105-60-2				
Carbazole	86-74-8				
Chrysene	218-01-9				
Di-n-butyl phthalate	84-74-2				
Di-n-octyl phthalate	117-84-0				
Dibenz(a,h)anthracene	53-70-3				
Dibenzofuran	132-64-9				
Diethyl phthalate	84-66-2				
Diethylene glycol dibenzoate - TIC	120-55-8				
Dimethyl phthalate	131-11-3				
Diphenyl	92-52-4				
Fluoranthene	206-44-0				
Fluorene	86-73-7				
Heptadecane - TIC	629-78-7				
Hexachlorocyclopentadiene	77-47-4				
Hexachloroethane	67-72-1				
Indeno[1,2,3-cd]pyrene	193-39-5				
Isophorone	78-59-1				
N-Nitrosodi-n-propylamine	621-64-7				
N-Nitrosodiphenylamine	86-30-6				
Naphthalene	91-20-3				
Nitrobenzene	98-95-3				
Octadecanoic acid - TIC	57-11-4				
Octaethylene glycol monododecyl ether - TIC	3055-98-9				
Oleic Acid - TIC	112-80-1				
Oxirane, heptadecyl- - TIC	67860-04-2				
Phenanthrene	85-01-8				
Phenol	108-95-2				
Pyrene	129-00-0				
Tetraethyleneglycol monomethylether - TIC	23783-42-8				
Tridecanoic acid - TIC	638-53-9				
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

Sample Name: TB-12-082115
Lab Sample ID: 490857809
Sample Date: 8/21/2015

Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier
OSW-8270DSim					
Benzo[a]anthracene	56-55-3				
Benzo[a]pyrene	50-32-8				
Benzo[b]fluoranthene	205-99-2				
Hexachlorobenzene	118-74-1				
Hexachlorobutadiene	87-68-3				
N-Nitrosodimethylamine	62-75-9				
Pentachlorophenol	87-86-5				
GC Other					
OSW-8082A					
PCB-1016	12674-11-2				
PCB-1221	11104-28-2				
PCB-1232	11141-16-5				
PCB-1242	53469-21-9				
PCB-1248	12672-29-6				
PCB-1254	11097-69-1				
PCB-1260	11096-82-5				
Polychlorinated biphenyls, Total	1336-36-3				
Metals					
OSW-6020A					
Aluminum	7429-90-5				
Aluminum - Dissolved	7429-90-5				
Antimony	7440-36-0				
Antimony - Dissolved	7440-36-0				
Arsenic	7440-38-2				
Arsenic - Dissolved	7440-38-2				
Barium	7440-39-3				
Barium - Dissolved	7440-39-3				
Beryllium	7440-41-7				
Beryllium - Dissolved	7440-41-7				
Cadmium	7440-43-9				
Cadmium - Dissolved	7440-43-9				
Calcium	7440-70-2				
Calcium - Dissolved	7440-70-2				
Chromium	7440-47-3				
Chromium - Dissolved	7440-47-3				
Cobalt	7440-48-4				
Cobalt - Dissolved	7440-48-4				
Copper	7440-50-8				
Copper - Dissolved	7440-50-8				
Iron	7439-89-6				
Iron - Dissolved	7439-89-6				
Lead	7439-92-1				
Lead - Dissolved	7439-92-1				
Magnesium	7439-95-4				
Magnesium - Dissolved	7439-95-4				
Manganese	7439-96-5				
Manganese - Dissolved	7439-96-5				
Nickel	7440-02-0				
Nickel - Dissolved	7440-02-0				
Potassium	7440-09-7				
Potassium - Dissolved	7440-09-7				
Selenium	7782-49-2				
Selenium - Dissolved	7782-49-2				
Silver	7440-22-4				
Silver - Dissolved	7440-22-4				
Sodium	7440-23-5				
Sodium - Dissolved	7440-23-5				
Thallium	7440-28-0				
Thallium - Dissolved	7440-28-0				
Vanadium	7440-62-2				
Vanadium - Dissolved	7440-62-2				
Zinc	7440-66-6				
Zinc - Dissolved	7440-66-6				
OSW-7470A					
Mercury	7439-97-6				
Mercury - Dissolved	7439-97-6				
General Chemistry					
OSW-9012B					
Cyanide, Total	57-12-5				
OSW-9056A					
Chloride	16887-00-6				
Sulfate	14808-79-8				
Prep					
APHA-2320B					
Bicarbonate Alkalinity as CaCO3	E-14508				
Total Alkalinity as CaCO3	E-14506				

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-03-082115				RW-2 (279-289)-082115				SW-PAB-02-082115				SW-PAB-01A-082115				SW-PAB-01-082115				SW-11-082115			
		Lab Sample ID:	490857801				4908578010				490857802				490857803				490857804				490857805			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015				8/21/2015				8/21/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																										
OSW-8260C																										
1-Propene, 2-methyl- - TIC	115-11-7					3.0	---	ug/l	NJ																	
Acetone	67-64-1	ND	25	ug/l	UJ					ND	25	ug/l	UJ	ND	25	ug/l	UJ	ND	25	ug/l	UJ	ND	25	ug/l	UJ
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Ethyl ether - TIC	60-29-7					1.5	5.0	ug/l	J																	
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Tetrahydrofuran - TIC	109-99-9					3.3	10	ug/l	J																	
Unknown - TIC	Tic2					62	---	ug/l	NJ																	
GC/MS SVOC																										
OSW-8270D																										
1,2-Benzenedicarboxylic acid, diisooctyl - TIC	27554-26-3													3.3	---	ug/l	NJ									
1,4-Benzenediamine, N-(1-methylethyl)-N' - TIC	101-72-4					5.9	---	ug/l	NJ																	
2(3H)-Benzothiazolone - TIC	934-34-9					3.8	---	ug/l	NJ																	
2,6,10,14,18,22-Tetracosahexaene, 2,6,10 - TIC	111-02-4									3.2	---	ug/l	NJ													
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5					33	---	ug/l	NJ																	
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3					17	---	ug/l	NJ																	
9-Octadecenoic acid, (E)- - TIC	112-79-8													6.5	---	ug/l	NJ									
Acetic acid, chloro-, octadecyl ester - TIC	5348-82-3									4.1	---	ug/l	NJ													
Benzenesulfonamide, 2-methyl- - TIC	88-19-7					9.6	---	ug/l	NJ																	
Benzenesulfonamide, N-butyl- - TIC	3622-84-2																									
Benzoic acid, 3,5-bis(1,1-dimethylethyl) - TIC	1421-49-4																									
Diethylene glycol dibenzoate - TIC	120-55-8																					8.1	---	ug/l	NJ
Heptadecane - TIC	629-78-7																	4.2	---	ug/l	NJ				
Octadecanoic acid - TIC	57-11-4	3.8	---	ug/l	NJ	4.9	---	ug/l	NJ					3.2	---	ug/l	NJ								
Octaethylene glycol monododecyl ether - TIC	3055-98-9													3.1	---	ug/l	NJ								
Oleic Acid - TIC	112-80-1					11	---	ug/l	NJ	14	---	ug/l	NJ									6.9	---	ug/l	NJ
Oxirane, heptadecyl- - TIC	67860-04-2									3.2	---	ug/l	NJ												
Tetraethyleneglycol monomethylether - TIC	23783-42-8					3.5	---	ug/l	NJ																
Tridecanoic acid - TIC	638-53-9													4.9	---	ug/l	NJ								
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0									4.6	---	ug/l	NJ												
OSW-8270DSim																										
Benzo[a]anthracene	56-55-3					ND	0.050	ug/l	R													ND	0.050	ug/l	R
Benzo[a]pyrene	50-32-8					ND	0.050	ug/l	R													ND	0.050	ug/l	R
Benzo[b]fluoranthene	205-99-2					ND	0.050	ug/l	R													ND	0.050	ug/l	R
Hexachlorobenzene	118-74-1					ND	0.020	ug/l	R													ND	0.020	ug/l	R
Hexachlorobutadiene	87-68-3					ND	0.40	ug/l	R													ND	0.40	ug/l	R
N-Nitrosodimethylamine	62-75-9					ND	0.80	ug/l	R													ND	0.80	ug/l	R
Pentachlorophenol	87-86-5					ND	0.30	ug/l	R									ND	0.30	ug/l	R	0.11	0.30	ug/l	J
Metals																										
OSW-6020A																										
Manganese	7439-96-5													2.0	0.0020	mg/l	E								
Vanadium	7440-62-2	0.0014	0.0020	mg/l	UB					0.0014	0.0020	mg/l	UB	0.0017	0.0020	mg/l	UB	0.0016	0.0020	mg/l	UB	0.0018	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.00078	0.0020	mg/l	UB					0.00079	0.0020	mg/l	UB	0.00079	0.0020	mg/l	UB	0.00090	0.0020	mg/l	UB	0.0011	0.0020	mg/l	UB

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85780-1

		Sample Name:	SW-PAB-00-082115				RW-9A (85-95)-082115				RW-9 (206-216)-082115				TB-12-082115			
		Lab Sample ID:	490857806				490857807				490857808				490857809			
		Sample Date:	8/21/2015				8/21/2015				8/21/2015				8/21/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																	
OSW-8260C																	
1-Propene, 2-methyl- - TIC	115-11-7																
Acetone	67-64-1	ND	25	ug/l	UJ									ND	25	ug/l	UJ
Bromomethane	74-83-9	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Ethyl ether - TIC	60-29-7																
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Tetrahydrofuran - TIC	109-99-9																
Unknown - TIC	Tic2																
GC/MS SVOC																	
OSW-8270D																	
1,2-Benzenedicarboxylic acid, diisooctyl - TIC	27554-26-3																
1,4-Benzenediamine, N-(1-methylethyl)-N' - TIC	101-72-4																
2(3H)-Benzothiazolone - TIC	934-34-9																
2,6,10,14,18,22-Tetracosahexaene, 2,6,10 - TIC	111-02-4																
3,5-di-tert-Butyl-4-hydroxyphenylpropion - TIC	20170-32-5									22	---	ug/l	NJ				
7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6, - TIC	82304-66-3									6.0	---	ug/l	NJ				
9-Octadecenoic acid, (E)- - TIC	112-79-8					14	---	ug/l	NJ								
Acetic acid, chloro-, octadecyl ester - TIC	5348-82-3																
Benzenesulfonamide, 2-methyl- - TIC	88-19-7																
Benzenesulfonamide, N-butyl- - TIC	3622-84-2									15	---	ug/l	NJ				
Benzoic acid, 3,5-bis(1,1-dimethylethyl) - TIC	1421-49-4									4.8	---	ug/l	NJ				
Diethylene glycol dibenzoate - TIC	120-55-8																
Heptadecane - TIC	629-78-7																
Octadecanoic acid - TIC	57-11-4																
Octaethylene glycol monododecyl ether - TIC	3055-98-9																
Oleic Acid - TIC	112-80-1	5.7	---	ug/l	NJ					17	---	ug/l	NJ				
Oxirane, heptadecyl- - TIC	67860-04-2																
Tetraethyleneglycol monomethylether - TIC	23783-42-8																
Tridecanoic acid - TIC	638-53-9									5.6	---	ug/l	NJ				
[1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'- - TIC	366-29-0																
OSW-8270DSim																	
Benzo[a]anthracene	56-55-3									ND	0.050	ug/l	R				
Benzo[a]pyrene	50-32-8									ND	0.050	ug/l	R				
Benzo[b]fluoranthene	205-99-2									ND	0.050	ug/l	R				
Hexachlorobenzene	118-74-1									ND	0.020	ug/l	R				
Hexachlorobutadiene	87-68-3									ND	0.40	ug/l	R				
N-Nitrosodimethylamine	62-75-9									ND	0.80	ug/l	R				
Pentachlorophenol	87-86-5									ND	0.30	ug/l	R				
Metals																	
OSW-6020A																	
Manganese	7439-96-5																
Vanadium	7440-62-2	0.0020	0.0020	mg/l	B	0.0014	0.0020	mg/l	UB	0.0015	0.0020	mg/l	UB				
Vanadium - Dissolved	7440-62-2	0.0013	0.0020	mg/l	UB	0.00098	0.0020	mg/l	UB								

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
85780
#1
B

TestAmerica

09/21/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Carr	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2SO3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)

Other:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filter)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
				Preservation Code:																		
1	SW-PAB-03-082115	8/21/15	10:30	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
2	SW-PAB-02-082115	8/21/15	11:25	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
3	SW-PAB-01A-082115	8/21/15	12:20	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
4	SW-PAB-01-082115	8/21/15	12:45	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
5	SW-11-082115 MS/MSD	8/21/15	13:10	G	Water	N	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
6	SW-PAB-00-082115	8/21/15	13:50	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
7	RW-9A (85-95)-082115	8/21/15	10:45	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
8	RW-9 (206-216)-082115	8/21/15	09:25	G	Water	N	N	✓	✓	✓	✓	H	✓	H	✓	H	H					Limited sample volume, analyze if volume adequate
9	TB-12-082115	8/21/15	—	—	Water	N	N	✓	✓													
10	RW-2 (279-289)-082115	8/21/15	13:45	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
					Water																	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	8/21/15 1440		Tusha Smith	8/21/15 1440	TA
Tusha Smith	8/21/15 1800	TA	[signature] 1800	8/21/15	TA
[signature]	8/21/15	TA	[signature] 5.9/2.5/5.8	8/22/15 0945	TAN

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
Δ Yes Δ No	3cooler.	

E-Mail Date: 2015-10-13
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER - not available
CADENA PROJECT E203361
SAMPLES COLLECTED August 2015
SUBMITTAL #: 490-85948-1

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1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by TestAmerica-Nashville Laboratory the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. A sampling and analysis summary that lists all sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. A summary of all of the analytical data is presented in Appendix 3. Copies of sample Chain of Custody (COC) documents and cooler receipt forms for samples discussed in this report are included in Attachment A.
Note: One field sample from this submittal was collected in triplicate to facilitate use of this sample as the QC batch MS/MSD for each analysis where appropriate (MS not required for alkalinity).

Table 1.1

Laboratory Submittal	***Sample Date***	***Laboratory Receipt Date***
490-85948-1	8/24-25/2015	8/26/2015

The samples noted below were validated against the associated method/parameter in order to achieve the validation requirements for this SDG:

Table 1.2

Parameter	***Reference Method***	***Analyte Listing***
Volatile Organics	OSW-8260C	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8260CSIM	1,2-Dibromo-3-Chloropropane,1,4-Dioxane,EthyleneDibromide,1,2,3-Trichloropropane
Semi-Volatile Organics	OSW-8270D	TCL List OLM4.2 plus 15 TIC's
Custom Short List	OSW-8270DSIM	Extended list includes the following: Benzo(a)anthracene,Benzo(a)pyrene, Benzo(b)fluoranthene,Hexachlorobenzene, Hexachlorobutadiene,N-Nitrosodimethylamine,Pentachlorophenol
PCB	OSW-8082A	7 Standard Aroclors
Metals	OSW-6020A/7470A	Total and dissolved TAL Metals
Ion Chromatography	OSW-9056A	Chloride and Sulfate
Total Cyanide	OSW-9021B	Total and Amenable Cyanide
General Chemistry	APHA-2320B	Total and Bicarbonate Alkalinity

All "SW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third Edition, November 1986 (with all subsequent revisions).
The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis. A Level IV (Tier 3) data review was performed on the samples listed in Table 1.2 above by (CADENA).

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.
ii.) "Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are presented in the following subsections.

An overview of the review findings is presented in table format. Several data qualifier flags were utilized in the review process. The definitions of these qualifier flags are as follows:

- J Indicates an estimated value.
- U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. However, the quantitation limit is considered to be approximate due to associated quality assurance results.
- UB The analyte was detected in the sample at a level between the MDL and RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the reporting limit.
- B The analyte was detected in the sample at a level above the RDL. For organics the sample concentration for common lab contaminates was less than 10 times the blank concentration or 5 times for other organic compounds and for inorganics the sample concentration was less than 10 times the blank concentration. The sample result should be considered non-detect at the concentration reported.
- R The analyte/compound results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte/compound cannot be verified.

All flags have been incorporated into the data tables in this report.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS VOC and SIM

GCMS VOC Continuing Calibration Verification standards CCV 278804/2 analyzed on 9/3 had multiple responses outside of laboratory control limits. High bias outliers did not have an effect on client sample data or were not associated with target analytes for this submittal. Low bias recoveries were observed for target analytes chloromethane and methyl acetate in the CCV from 9/3. All client sample methyl acetate and methyl acetate results should be considered to be estimated and qualified with UJ flags if non-detect and J flags if detected based on these low bias CCV responses.

GCMS SVOC and SIM

GCMS SVOC Continuing Calibration Verification (CCV) standard 277755/3 had multiple response outliers biased high and target analyte 2,2'-oxybis(1-chloropropane) response biased low. This analyte reporting limit and result should be considered to be estimated and qualified with UJ flags for all samples. Target analyte high bias outliers did not result in qualification of client data since associated sample results were all non-detect.

PCB

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

METALS

Client sample -005 dissolved manganese result was above the instrument linear dynamic range (LDR) so this result should be considered to be estimated and qualified with an E flag (total manganese for sample -004 was marginally over the LDR (less than 10%) so the associated result was not qualified.

Dissolved selenium result for sample -002 was qualified with a B flag due to detections in associated calibration blank CCB 490-278732/125. Total thallium and total lead in client sample -001 were qualified with UB flags due to detections in associated calibration blank CCB 490-277352/18.

INORGANICS

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:

GCMS VOC

No additional observations to report.

GCMS VOC-SIM

CCV for sequence 278757 on 9/3 had an outlier biased high for 1,4-dioxane and one surrogate. Since all associated client sample 1,4-dioxane results were non-detect qualifications were not applied based on this high bias calibration response outlier. ICV for sequence 277064 on 8/28 were reported on form VII as outliers based on known spike values reported. Verification with laboratory indicated that the known spike values should have been 10 and 0.5 (instead of 2000/100) as was historically reported for other sequences to these ICV recoveries were considered to be acceptable when compared to these historical values.

GCMS SVOC
No additional observations to report.
GCMS SVOC-SIM
No additional observations to report.
METALS
No additional observations to report.
PCB – internal standard technique was used for both columns. Some initial and continuing calibration outliers were observed for specific aroclor 1016/1260 peaks on the secondary columns but these outliers did not result in qualification of final client sample results.
Sample -007 was received at a pH of 10 according to the laboratory submittal prep log. This is outside of recommended preservation range for this analysis but sample pH was adjusted prior to sample prep so qualifications were not applied based on this preservation non-conformance.
RAW DATA NOT INCLUDED IN ORIGINAL LAB LEVEL 4 DATA PACKAGE:
TOTAL MERCURY – Sample raw data was not included – duplicate of total mercury run was reported instead. (Received from lab 2015-10-27)
CYANIDE – raw data from sequence analyzed on 8/27. (Received from lab 2015-10-27)

VERIFICATION SUMMARY

The following qualifications and associated data flags were applied based on the initial level 2 review of this data package.

The following minor QC exceptions or missing information were noted:

GCMS VOC trip blank was non-detect for all target analytes.

GCMS-SIM VOC QC batch 278757 and GCMS SVOC QC batch 277755 CCV response outliers as noted in the laboratory submittal case narrative were not used to qualify results as part of this level 2 data package review.

GCMS VOC and GCMS SVOC TIC results should be considered to be estimated and qualified with NJ flags unless the TIC analyte detected is an instrument calibrated compound that is just not part of the TAL for this submittal in which case no qualification is required other than the TIC qualification code or J flag if the result is detected below the RL.

GCMS VOC QC batch 278804 LCS recovery was an outlier biased high for cyclohexane. Qualification of client sample results was not required based on these high bias QC outliers.

GCMS VOC QC batch 278804 method blank had a detection below the RL for methylene chloride. Client sample -003 result for this analyte should be considered to be non-detect at the RL and qualified with a UB flag.

GCMS VOC sample -001 MS recovery only was an outlier biased low for 1,1-dichloroethylene. Qualification of client sample results was not required based on this QC outlier alone.

PAH QC batch 277571 MS recoveries were not performed due to insufficient sample volume available for spiking according to the laboratory submittal case narrative.

GCMS SVOC QC batch 277572 MS recovery outliers were not determined using samples from this submittal so qualification of client sample results was not required based on these sample-specific QC outliers.

GCMS SVOC QC batch 277572 LCS recoveries were outliers biased high for benzaldehyde. Qualification of

client sample results was not required based on this high bias QC outlier.

GCMS SVOC surrogate recoveries were outliers biased high for only 1 out of 3 acid fraction surrogates in QC batch 277572 method blank and LCS. Qualification based on these surrogate recovery outliers was not required.

Metals method blanks had detections below the RL in QC batch 276608 for total silver and total vanadium and in QC batch 277682 for dissolved vanadium and in QC batch 277068 for dissolved vanadium and dissolved manganese. Client samples -003, -004, -005 dissolved vanadium results and client samples -003.-005, -006 total vanadium results and client sample -003 dissolved manganese results should be considered to be non-detect at the RL and qualified with UB flags. Client samples -006 total vanadium results and client samples -001, -002, -006 dissolved vanadium results and client sample -004 dissolved manganese results should be considered to be non-detect at the concentration reported and qualified with B flags.

Metals sample -001 MS/MSD recoveries were not considered to be statistically reliable due to elevated levels of target analyte in the original sample matrix relative to the amount spiked (4X rule) so were not used to qualify results for manganese.

Cyanide sample -004 MSD recovery only was an outlier biased low. Qualification of client sample results is not required based on this QC outlier alone. QC batch sample duplicate RPD outlier was not performed using a sample from this submittal so qualification was not required based on this sample-specific QC outlier.

Note: Field blank data, if available, was not utilized to qualify client sample results as part of this level 2 data package verification review.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

2.0 VOLATILE ORGANIC COMPOUNDS (VOCs) – METHOD SW846 8260C and SIM Analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) VOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS VOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS VOCs

Initial calibration data for VOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS VOCs

Initial calibration verification (ICV) standards for VOC analyses were reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

2.2 CONTINUING CALIBRATION – GC/MS VOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

2.3 INTERNAL STANDARDS – GC/MS VOCs

Internal standard (IS) data were reviewed and met criteria without exception.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS VOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.
If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.
All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS VOCs

A laboratory control sample (LCS) was prepared and analyzed for VOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS VOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.
CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS VOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS VOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS VOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable unless noted otherwise in verification/validation summary.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS VOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS VOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D and SIM analysis

The target analyte list was defined by the client-project as TCL List OLM4.2.

3.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

3.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds (Bromofluorobenzene or BFB) were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

3.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs were reviewed and met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

3.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

3.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

3.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria without exception.

3.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

3.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) was prepared and analyzed for SVOCs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

3.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

3.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

3.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

3.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

3.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

TIC detections that are not supported by the calibration criteria available in the level 4 data package were qualified with NJ flags including the total alkane parameters. Detections made using the TIC approach that are supported by calibration and retention time data were qualified as target analytes using J flags for detections below the RL and no qualifiers for results above the RL that are supported with compliant batch and instrument QC.

3.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

4.0 POLYCHLORINATED BIPHENYLS (PCBs) – METHOD SW846 8082A

The target analyte list was defined by the client as the standard 7 aroclors.

4.1 CALIBRATION – GAS CHROMATOGRAPH-ECD

4.1.1 TUNING AND MASS CALIBRATION – PCB

Not applicable for this analysis.

4.1.2 INITIAL CALIBRATION – PCB

Initial calibration data for PCBs were reviewed and met the criteria for instrument sensitivity and linearity of response without exception.

4.1.3 INITIAL CALIBRATION VERIFICATION – PCB

Initial calibration verification (ICV) standards for PCB analyses were reviewed and met criteria specified by the laboratory with no exceptions.

4.2 CONTINUING CALIBRATION – PCBs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary.

4.3 INTERNAL STANDARDS – PCB

Internal standard (IS) data were reviewed and met criteria unless noted otherwise in verification/validation summary. (NOTE: Lab quantitation approach DID use internal standard quantitation for this submittal).

4.4 SURROGATE SPIKE RECOVERIES – PCB

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were within the established laboratory control limits unless noted otherwise in verification/validation summary.

4.5 LABORATORY CONTROL SAMPLE ANALYSES - PCB

A laboratory control sample (LCS) was prepared and analyzed for PCBs. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary..

4.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - PCB

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

CADENA does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

4.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - PCB

There were no field duplicate comparisons performed as part of this validation request.

4.8 EXTRACT CLEANUP - PCB

Extract cleanups were performed in accordance with laboratory SOP's and as noted in level 4 data package prep logs.

4.9 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - PCB

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

4.10 TENTATIVELY IDENTIFIED COMPOUNDS - PCB

Not requested for this analytical procedure.

4.11 BLANKS – METHOD/FIELD/CALIBRATION - PCB

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

5.0 HPLC/IC – METHOD SW846 9056A – CHLORIDE AND SULFATE

5.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

5.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

5.3 CONTINUTING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

5.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

5.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

5.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

5.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

5.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

6.0 METALS – ICPMS by Method 6020 TOTAL AND DISSOLVED and Mercury by Method 7470A

The following samples provided in this SDG underwent a Level IV review for either/and metals or mercury analyses:

- Method 6020A: ALL
- Method 7470A: ALL

6.1 ICP/MS TUNING AND MASS CALIBRATION

Instrument tuning data were reviewed. Tuning elements were analyzed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

6.2 INITIAL CALIBRATION

Initial calibration data for metals and mercury were reviewed and met the criteria for linearity of response without exception.

6.3 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards for metals and mercury analyses were reviewed and met criteria unless otherwise noted in verification/validation summary section of this document.

An initial calibration blank (ICB) was analyzed for metals and mercury analyses. Metals and mercury were reported as non-detect in each ICB analysis unless noted otherwise in verification/validation summary.

6.4 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for metals and mercury analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

6.5 INTERFERENCE CHECK STANDARD

The interference check standard results were reviewed and found to meet criteria.

6.6 INTERNAL STANDARDS

Internal standard (IS) data were reviewed and found to meet criteria unless noted otherwise in verification/validation summary.

6.7 LABORATORY CONTROL SAMPLE ANALYSIS

A laboratory control sample (LCS) was prepared and analyzed for metals and mercury. The LCS recoveries were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

6.8 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE (MS/MSD) ANALYSES

The MS/MSD recoveries and RPD's were either not performed using a client sample or were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

6.9 CONTRACT REQUIRED DETECTION LIMIT STANDARD ANALYSES

Each contract required detection limit (CRDL) standard was analyzed at the proper frequency and were within laboratory control limits unless noted otherwise in verification/validation summary.

6.10 ICP SERIAL DILUTION

Serial dilutions were analyzed at the proper frequency and were either not performed using the client sample or were within laboratory control limits unless noted otherwise in verification/validation summary.

6.11 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

6.12 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

6.13 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

7.0 GENERAL CHEMISTRY- TOTAL AND AMENABLE CYANIDE AND ALKALINITY – METHODS 9012B and 2320B

7.1 INITIAL CALIBRATION

Initial calibration data were reviewed and met the criteria for linearity of response unless noted otherwise in verification/validation summary.

7.2 INITIAL CALIBRATION VERIFICATION

Initial calibration verification (ICV) standards reviewed and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

7.3 CONTINUING CALIBRATION

Continuing calibration verification (CCV) standards for these analyses were analyzed at the required frequency and met criteria specified by the laboratory unless noted otherwise in verification/validation summary.

The continuing calibration blanks (CCB) were analyzed at the proper frequency and were reported as non-detect unless noted otherwise in verification/validation summary.

7.4 LABORTORY CONTROL SAMPLE ANALYSES

A laboratory control sample (LCS) was prepared and analyzed for these analyses. The LCS recoveries were within the laboratory control limits unless noted otherwise in verification/validation summary.

7.5 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES

The MS/MSD recoveries and RPD's were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

Cadena does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

7.6 FIELD QA/QC – FIELD DUPLICATE ANALYSES

There were no field duplicate comparisons performed as part of this validation request.

7.7 TARGET ANALYTES AND REQUIRED LIMITS OF DETECTION

Target analyte lists were based on project specific requirements. Limits of detection were not specifically provided for water matrices. Analyte lists reported by laboratory were in compliance with available reference documents (COC).

7.8 BLANKS – METHOD/FIELD/CALIBRATION

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

8.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

8.1 SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time and preservation requirements are summarized in Appendix 5.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

All samples were properly preserved and cooled to 0-6°C after collection.

8.2 METHOD BLANK SUMMARY

The method blank results for samples from the SDG covered in this evaluation were all non-detect at the method detection limit unless noted otherwise in verification/validation summary.

Evaluation of blank contamination includes directions on the interpretation of the affected analytical results.

9.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

10.0 QC SUMMARY

All sample results meet the project specific QAPP standard for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 85948-1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS VOC Volatiles	GCMS VOC SIM	OSW-8270D	GCMS SVOC SIM	OSW-8082A	Metals by ICP Mass Spectroscopy(D)	Metals by ICP Mass Spectroscopy	Mercury (Manual Cold Vapor)(D)	Mercury (Manual Cold Vapor)	TOTAL AND AMENABLE CYANIDE (AUTOMATED COLORIMETRIC, WITH OFF-LINE DISTILLATION)	Inorganic Anions by IC	Alkalinity Prep
490859481	OB-15B-082415	8/24/2015	11:15:00	X	X	X	X	X	X	X	X	X	X	X	X
490859482	RW-13 (71-91)-082415	8/24/2015	1:35:00	X	X	X	X	X	X	X	X	X	X	X	X
490859483	FB-01-082415	8/24/2015	7:30:00	X	X	X	X	X	X	X	X	X	X	X	X
490859484	RW-5A-082415	8/24/2015	10:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490859485	OB-7-082415	8/24/2015	12:50:00	X	X	X	X	X	X	X	X	X	X	X	X
490859486	RW-4A (113-123)-082415	8/24/2015	9:35:00	X	X	X	X	X	X	X	X	X	X	X	X
490859487	RW-4 (333-343)-082415	8/24/2015	11:25:00	X	X	X	X	X	X	X	X	X	X	X	X
490859488	TB-13-082515	8/25/2015	1:00:00	X	X										

APPENDIX 2

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85948-1
August 2015

Description

- Standard Report Cover page
- Table of Contents
- SDG Case Narrative
- Sample Summary
- Executive Summary detection highlights
- Method Summary
- Method/Analyst Summary
- Analytical Results
- Surrogate Summary
- Quality Control Results
- Data Qualifiers
- QC Summary Association
- Lab Chronicle
- GCMS Volatiles Data - Method 8260C and SIM
  - QC Summary Data
    - Surrogate recoveries (form II)
    - Check Sample recoveries (form III)
    - Matrix spike/Matrix spike duplicate report (form III)
    - Method blank report (form IV)
    - Tuning and mass calibrations (form V)
    - Internal Standard and RT area summary (form VIII)
  - Sample Data
    - GCMS VOA Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Total Ion Profile Chromatogram
    - Ion profiles of detected target analyte peaks
    - Manual integration if applicable
    - Tentatively Identified Compound Reports (if applicable)
  - Standards Data
    - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
    - ICAL Raw integration data from instrument
    - ICAL Total Ion Profile Chromatogram
    - ICV check standard recovery report (Form VII)
    - ICV check standard total ion profile with integration
    - GCMS VOA Continuing Calibration Data (Form VII)
    - CCV raw integration data from instrument
    - CCV Total Ion Profile Chromatogram
    - Manual integration if applicable
  - Raw QC Data
    - Tune information (not included with SIM package)
    - FORM I - QC data
    - Method Blank integration/internal standard and total ion profile raw data
    - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
    - MS and MSD integration/internal standard and total ion profile raw data
  - Miscellaneous Data
    - Run logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85948-1
August 2015

Description

GCMS Semivolatiles Data - Method 8270D and SIM

- QC Summary Data
  - Surrogate recoveries (form II)
  - Check Sample recoveries (form III)
  - Method blank report (form IV)
  - Tuning and mass calibrations (form V) (not applicable for SIM)
  - Internal Standard and RT area summary (form VIII)
- Sample Data
  - GCMS VOA Organics Analysis Data Sheet (Form I)
  - Raw integration data from instrument
  - Total Ion Profile Chromatogram
  - Ion profiles of detected target analyte peaks
  - Manual integration if applicable
  - Tentatively Identified Compound Reports (if applicable)
- Standards Data
  - GCMS VOA Initial Calibration Data Internal Standard Curve Evaluation (Form VI)
  - ICAL Raw integration data from instrument
  - ICAL Total Ion Profile Chromatogram
  - ICV check standard recovery report
  - ICV check standard total ion profile with integration
  - GCMS VOA Continuing Calibration Data (Form VII)
  - CCV raw integration data from instrument
  - CCV Total Ion Profile Chromatogram
  - Manual integration if applicable
- Raw QC Data
  - Tune information (not applicable for SIM)
  - Method Blank integration/internal standard and total ion profile raw data
  - LCS and LCSDuplicate integration/internal standard and total ion profile raw data
- Miscellaneous Data
  - Instrument run logs
  - Extraction bench sheets

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85948-1
August 2015

Description

- Polychlorinated Biphenyls Data (PCB)
  - QC Summary data
    - Surrogate recoveries (form II)
    - Check Sample Recovery data (form III)
    - Method Blank data (form IV)
    - Analytical sequence with RT check (Form VIII)
    - Identification Summary (Form X)
  - Sample Data
    - Organics Analysis Data Sheet (Form I)
    - Raw integration data from instrument
    - Chromatogram
  - Standards Data (both columns)
    - Initial Calibration Data External Standard RT Summary (Form VI)
    - Initial Calibration Data Summary with average RF
    - Raw integration data from instrument with manual integrations where applicable
    - ICAL chromatograms
    - Continuing Calibration Data (Form VII) with RT Summaries
    - ICV raw integration and chromatograms
    - CCV raw integration data from instrument
    - CCV chromatogram
  - Raw QC Data
    - LCS/LCSD sample data report and integration and chromatograms
    - Method blank integration and chromatograms
  - Miscellaneous Data
    - Sequence table (run log)
    - PCB Batch Worksheet
- HPLC/IC - 9056A ORGFM_28D - Anions, Ion Chromatography - Sulfate and Chloride
  - Raw Data and Data Summaries for:
    - LCS/LCSD (form III)
    - MS/MSD (form III)
    - METHOD BLANKS (Form IV)
    - SAMPLE DATA (Form I)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VI)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - ICAL (Form VII)
      - Raw instrument data and chromatography
      - Manual Integration (if applicable)
    - QC DATA (Form I)
      - Raw instrument data and chromatography
    - Analysis Run Logs

APPENDIX 2
LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
FORD RINGWOOD MINES PROJECT
NEW JERSEY FULL PACKAGE MINI FINAL REPORT - LEVEL 4
E203361 - 490-85948-1
August 2015

Description

METALS DATA (ICPMS and mercury)
- Forms Data
  - Cover Page
  - Inorganic Analysis Data Sheet - Metals Dissolved/Total Recoverable (1A-IN)
  - CCV standard report - mercury and ICPMS (2A-IN)
  - CRQL report - mercury and ICPMS (2B-IN)
  - ICB report - mercury and ICPMS (3-IN)
  - Method blank report (3-IN)
  - Interference check standard A - ICPMS (4A-IN)
  - Interference check standard AB - ICPMS (4A-IN)
  - MS/MSD Sample recovery (5A-IN)
  - PDS Summary (5B-IN)
  - LCS Recovery form (7A-IN)
  - LCS Duplicate Recover (7D-IN)
  - ICP-MS Serial Dilutions (8-IN)
  - Detection Limits Form (9-IN)
  - Linear dynamic ranges - ICPMS (11-IN)
  - Prep log - mercury and ICPMS (12-IN)
  - Run log - ICPMS and Mercury (13-IN)
  - ICP-MS TUNE (14-IN)
  - ICPMS Internal Standards Relative Intensity Summary (15-IN)
- Instrument Printouts
  - ICP-MS Raw instrument data
  - Mercury raw instrument data, run logs and calibrations
- Miscellaneous Data
  - Metals Batch Worksheet

GENERAL CHEMISTRY - Total and Amenable Cyanide and Alkalinity
- Cover Page
- Raw Data and Data Summaries for:
  - Sample Data (Form 1B-IN)
  - CCV/CCB (Form 2-IN)
  - METHOD BLANKS (Form 3-IN)
  - MATRIX SPIKES (Form 5-IN)
  - Sample DUPLICATES (Form 6-IN)
  - LCS/LCSD (Form 7-IN)
  - Detection Limits Form (9-IN)
  - Prep log (12-IN)
  - Analysis Run Logs (13-IN)
  - Raw Data - instrument sample sequence and calibration curve
  - Alkalinity Reagents
  - Alkalinity pH meter calibration
  - Alkalinity sequence log and raw data
  - General Chemistry Batch Worksheets

Shipping and Receiving Documents
- COC forms
- Cooler Receipt Form, checklist and narrative

APPENDIX 3

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	OB-15B-082415				RW-13 (71-91)-082415				FB-01-082415			
		Lab Sample ID:	490859481				490859482				490859483			
		Sample Date:	8/24/2015				8/24/2015				8/24/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	35	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7												
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	0.53	5.0	ug/l	UB
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
tert-Butyldimethylsilanol - TIC	18173-64-3												
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9					0.98	10	ug/l	J				
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	OB-15B-082415				RW-13 (71-91)-082415				FB-01-082415			
		Lab Sample ID:	490859481				490859482				490859483			
		Sample Date:	8/24/2015				8/24/2015				8/24/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2,2'-oxybis[1-chloropropane]	108-60-1	ND	8.6	ug/l	UJ	ND	9.3	ug/l	UJ	ND	8.6	ug/l	UJ
2,3,4,6-Tetrachlorophenol	58-90-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	22	ug/l	---	ND	23	ug/l	---	ND	22	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2-Chloronaphthalene	91-58-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2-Chlorophenol	95-57-8	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2-Methylnaphthalene	91-57-6	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
2-Methylphenol	95-48-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
2-Nitroaniline	88-74-4	ND	22	ug/l	---	ND	23	ug/l	---	ND	22	ug/l	---
2-Nitrophenol	88-75-5	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
3-Nitroaniline	99-09-2	ND	22	ug/l	---	ND	23	ug/l	---	ND	22	ug/l	---
3H-Benz[e]indene, 2-methyl- - TIC	150096-60-9					4.6	---	ug/l	NJ				
4,6-Dinitro-2-methylphenol	534-52-1	ND	22	ug/l	---	ND	23	ug/l	---	ND	22	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
4-Chloroaniline	106-47-8	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
4-Nitroaniline	100-01-6	ND	22	ug/l	---	ND	23	ug/l	---	ND	22	ug/l	---
4-Nitrophenol	100-02-7	ND	22	ug/l	---	ND	23	ug/l	---	ND	22	ug/l	---
Acenaphthene	83-32-9	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Acenaphthylene	208-96-8	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Acetophenone	98-86-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Anthracene	120-12-7	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Atrazine	1912-24-9	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Benzaldehyde	100-52-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Benzenamine, N,N-dimethyl-4-nitro- - TIC	100-23-2					7.5	---	ug/l	NJ				
Benzo[g,h,i]perylene	191-24-2	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Caprolactam	105-60-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Carbazole	86-74-8	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Chrysene	218-01-9	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Dibenzofuran	132-64-9	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Diethyl phthalate	84-66-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Diethyltoluamide - TIC	134-62-3									11	---	ug/l	NJ
Dimethyl phthalate	131-11-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Diphenyl	92-52-4	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Fluoranthene	206-44-0	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Fluorene	86-73-7	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Hexachloroethane	67-72-1	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Isophorone	78-59-1	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
n-Hexadecanoic acid - TIC	57-10-3					3.4	---	ug/l	NJ				
N-Nitrosodi-n-propylamine	621-64-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Naphthalene	91-20-3	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Nitrobenzene	98-95-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Oleic Acid - TIC	112-80-1	3.1	---	ug/l	NJ	5.7	---	ug/l	NJ				
p-Benzoquinone - TIC	106-51-4	7.0	---	ug/l	NJ								
Phenanthrene	85-01-8	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Phenol	108-95-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	8.6	ug/l	---
Pyrene	129-00-0	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	1.7	ug/l	---
Tetradecane - TIC	629-59-4					3.0	---	ug/l	NJ				
Tridecanoic acid - TIC	638-53-9												
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.046	ug/l	---	ND	0.043	ug/l	---	ND	0.046	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.046	ug/l	---	ND	0.043	ug/l	---	ND	0.046	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.046	ug/l	---	ND	0.043	ug/l	---	ND	0.046	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.019	ug/l	---	ND	0.017	ug/l	---	ND	0.019	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.37	ug/l	---	ND	0.34	ug/l	---	ND	0.37	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.74	ug/l	---	ND	0.69	ug/l	---	ND	0.74	ug/l	---
Pentachlorophenol	87-86-5	ND	0.28	ug/l	---	ND	0.26	ug/l	---	ND	0.28	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	OB-15B-082415				RW-13 (71-91)-082415				FB-01-082415			
		Lab Sample ID:	490859481				490859482				490859483			
		Sample Date:	8/24/2015				8/24/2015				8/24/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.43	ug/l	---	ND	0.48	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.43	ug/l	---	ND	0.48	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.43	ug/l	---	ND	0.48	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.43	ug/l	---	ND	0.48	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.43	ug/l	---	ND	0.48	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.43	ug/l	---	ND	0.48	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.43	ug/l	---	ND	0.48	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.43	ug/l	---	ND	0.48	ug/l	---	ND	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.89	0.020	mg/l	---	1.7	0.020	mg/l	---	ND	0.020	mg/l	---
Aluminum - Dissolved	7429-90-5	0.17	0.020	mg/l	---	0.038	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	0.00075	0.0020	mg/l	J	0.0011	0.0020	mg/l	J
Arsenic	7440-38-2	0.0014	0.0020	mg/l	J	0.0029	0.0020	mg/l	---	ND	0.0020	mg/l	---
Arsenic - Dissolved	7440-38-2	0.0011	0.0020	mg/l	J	0.0020	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.041	0.0020	mg/l	---	0.059	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.0016	0.0020	mg/l	J	0.046	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	23.0	1.0	mg/l	---	49.6	1.0	mg/l	---	ND	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	21.7	1.0	mg/l	---	47.9	1.0	mg/l	---	ND	1.0	mg/l	---
Chromium	7440-47-3	0.0022	0.0020	mg/l	---	0.0080	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	0.00052	0.0020	mg/l	J	0.0013	0.0020	mg/l	J
Cobalt	7440-48-4	0.00082	0.0020	mg/l	J	0.00059	0.0020	mg/l	J	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	0.0019	0.0020	mg/l	J	0.0048	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	0.0011	0.0020	mg/l	J	ND	0.0020	mg/l	---
Iron	7439-89-6	1.6	0.025	mg/l	---	4.3	0.025	mg/l	---	ND	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.21	0.025	mg/l	---	0.041	0.025	mg/l	---	ND	0.025	mg/l	---
Lead	7439-92-1	0.00063	0.0020	mg/l	UB	0.0023	0.0020	mg/l	---	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	5.8	1.0	mg/l	---	14.8	1.0	mg/l	---	ND	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	5.7	1.0	mg/l	---	15.3	1.0	mg/l	---	ND	1.0	mg/l	---
Manganese	7439-96-5	4.0	0.020	mg/l	---	0.056	0.0020	mg/l	---	ND	0.0020	mg/l	---
Manganese - Dissolved	7439-96-5	0.42	0.0020	mg/l	---	0.036	0.0020	mg/l	---	0.00059	0.0020	mg/l	UB
Nickel	7440-02-0	0.015	0.0020	mg/l	---	0.0030	0.0020	mg/l	---	ND	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.0012	0.0020	mg/l	J	0.0011	0.0020	mg/l	J	ND	0.0020	mg/l	---
Potassium	7440-09-7	0.90	1.0	mg/l	J	47.5	1.0	mg/l	---	ND	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	0.74	1.0	mg/l	J	48.6	1.0	mg/l	---	ND	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	0.0031	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	0.0030	0.0020	mg/l	B	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	4.0	1.0	mg/l	---	19.4	1.0	mg/l	---	ND	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	3.9	1.0	mg/l	---	20.3	1.0	mg/l	---	ND	1.0	mg/l	---
Thallium	7440-28-0	0.0011	0.0020	mg/l	UB	0.00020	0.0020	mg/l	J	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Vanadium	7440-62-2	0.0054	0.0020	mg/l	---	0.0067	0.0020	mg/l	---	0.0013	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.0024	0.0020	mg/l	B	0.0022	0.0020	mg/l	B	0.00095	0.0020	mg/l	UB
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	0.0098	0.010	mg/l	J	0.0072	0.010	mg/l	J	ND	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	1.53	1.00	mg/l	---	37.7	1.00	mg/l	---	ND	1.00	mg/l	---
Sulfate	14808-79-8	10.8	1.00	mg/l	---	63.0	1.00	mg/l	---	ND	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	66.9	10.0	mg/l	---	146	10.0	mg/l	---	ND	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	66.9	10.0	mg/l	---	146	10.0	mg/l	---	ND	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	RW-5A-082415				OB-7-082415				RW-4A (113-123)-082415			
		Lab Sample ID:	490859484				490859485				490859486			
		Sample Date:	8/24/2015				8/24/2015				8/24/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC													
OSW-8260C													
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	0.18	1.0	ug/l	J	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	0.22	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7					0.28	5.0	ug/l	J				
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
tert-Butyldimethylsilanol - TIC	18173-64-3									3.1	---	ug/l	NJ
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9												
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim													
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	RW-5A-082415				OB-7-082415				RW-4A (113-123)-082415			
		Lab Sample ID:	490859484				490859485				490859486			
		Sample Date:	8/24/2015				8/24/2015				8/24/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC													
OSW-8270D													
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2,2'-oxybis[1-chloropropane]	108-60-1	ND	8.6	ug/l	UJ	ND	9.3	ug/l	UJ	ND	10	ug/l	UJ
2,3,4,6-Tetrachlorophenol	58-90-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2,4,5-Trichlorophenol	95-95-4	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2,4,6-Trichlorophenol	88-06-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2,4-Dichlorophenol	120-83-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2,4-Dimethylphenol	105-67-9	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2,4-Dinitrophenol	51-28-5	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
2,4-Dinitrotoluene	121-14-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2,6-Dinitrotoluene	606-20-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2-Chloronaphthalene	91-58-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2-Chlorophenol	95-57-8	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2-Methylnaphthalene	91-57-6	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
2-Methylphenol	95-48-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
2-Nitroaniline	88-74-4	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
2-Nitrophenol	88-75-5	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
3 & 4 Methylphenol	65794-96-9	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
3,3'-Dichlorobenzidine	91-94-1	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
3-Nitroaniline	99-09-2	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
3H-Benz[e]indene, 2-methyl- - TIC	150096-60-9												
4,6-Dinitro-2-methylphenol	534-52-1	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
4-Bromophenyl phenyl ether	101-55-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
4-Chloro-3-methylphenol	59-50-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
4-Chloroaniline	106-47-8	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
4-Chlorophenyl phenyl ether	7005-72-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
4-Nitroaniline	100-01-6	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
4-Nitrophenol	100-02-7	ND	22	ug/l	---	ND	23	ug/l	---	ND	25	ug/l	---
Acenaphthene	83-32-9	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Acenaphthylene	208-96-8	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Acetophenone	98-86-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Anthracene	120-12-7	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Atrazine	1912-24-9	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Benzaldehyde	100-52-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Benzenamine, N,N-dimethyl-4-nitro- - TIC	100-23-2												
Benzo[g,h,i]perylene	191-24-2	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Benzo[k]fluoranthene	207-08-9	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Bis(2-chloroethoxy)methane	111-91-1	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Bis(2-chloroethyl)ether	111-44-4	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Bis(2-ethylhexyl) phthalate	117-81-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Butyl benzyl phthalate	85-68-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Caprolactam	105-60-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Carbazole	86-74-8	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Chrysene	218-01-9	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Di-n-butyl phthalate	84-74-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Di-n-octyl phthalate	117-84-0	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Dibenz(a,h)anthracene	53-70-3	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Dibenzofuran	132-64-9	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Diethyl phthalate	84-66-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Diethyltoluamide - TIC	134-62-3	5.4	---	ug/l	NJ								
Dimethyl phthalate	131-11-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Diphenyl	92-52-4	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Fluoranthene	206-44-0	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Fluorene	86-73-7	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Hexachlorocyclopentadiene	77-47-4	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Hexachloroethane	67-72-1	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Isophorone	78-59-1	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
n-Hexadecanoic acid - TIC	57-10-3									4.8	---	ug/l	NJ
N-Nitrosodi-n-propylamine	621-64-7	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
N-Nitrosodiphenylamine	86-30-6	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Naphthalene	91-20-3	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Nitrobenzene	98-95-3	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Oleic Acid - TIC	112-80-1	6.6	---	ug/l	NJ	17	---	ug/l	NJ	15	---	ug/l	NJ
p-Benzoquinone - TIC	106-51-4												
Phenanthrene	85-01-8	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Phenol	108-95-2	ND	8.6	ug/l	---	ND	9.3	ug/l	---	ND	10	ug/l	---
Pyrene	129-00-0	ND	1.7	ug/l	---	ND	1.9	ug/l	---	ND	2.0	ug/l	---
Tetradecane - TIC	629-59-4												
Tridecanoic acid - TIC	638-53-9					3.5	---	ug/l	NJ				
OSW-8270DSim													
Benzo[a]anthracene	56-55-3	ND	0.045	ug/l	---	ND	0.046	ug/l	---	ND	0.046	ug/l	---
Benzo[a]pyrene	50-32-8	ND	0.045	ug/l	---	ND	0.046	ug/l	---	ND	0.046	ug/l	---
Benzo[b]fluoranthene	205-99-2	ND	0.045	ug/l	---	ND	0.046	ug/l	---	ND	0.046	ug/l	---
Hexachlorobenzene	118-74-1	ND	0.018	ug/l	---	ND	0.019	ug/l	---	ND	0.019	ug/l	---
Hexachlorobutadiene	87-68-3	ND	0.36	ug/l	---	ND	0.37	ug/l	---	ND	0.37	ug/l	---
N-Nitrosodimethylamine	62-75-9	ND	0.71	ug/l	---	ND	0.74	ug/l	---	ND	0.74	ug/l	---
Pentachlorophenol	87-86-5	ND	0.27	ug/l	---	ND	0.28	ug/l	---	ND	0.28	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	RW-5A-082415				OB-7-082415				RW-4A (113-123)-082415			
		Lab Sample ID:	490859484				490859485				490859486			
		Sample Date:	8/24/2015				8/24/2015				8/24/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other													
OSW-8082A													
PCB-1016	12674-11-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	0.18	0.50	ug/l	J	ND	0.50	ug/l	---	1.3	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.50	ug/l	---	ND	0.50	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---	ND	0.50	ug/l	---	1.3	0.50	ug/l	---
Metals													
OSW-6020A													
Aluminum	7429-90-5	0.055	0.020	mg/l	---	ND	0.020	mg/l	---	0.016	0.020	mg/l	J
Aluminum - Dissolved	7429-90-5	ND	0.020	mg/l	---	ND	0.020	mg/l	---	ND	0.020	mg/l	---
Antimony	7440-36-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Antimony - Dissolved	7440-36-0	ND	0.0020	mg/l	---	0.00050	0.0020	mg/l	J	0.00063	0.0020	mg/l	J
Arsenic	7440-38-2	0.0033	0.0020	mg/l	---	0.00057	0.0020	mg/l	J	ND	0.0020	mg/l	---
Arsenic - Dissolved	7440-38-2	0.0011	0.0020	mg/l	J	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Barium	7440-39-3	0.025	0.0020	mg/l	---	0.018	0.0020	mg/l	---	0.014	0.0020	mg/l	---
Barium - Dissolved	7440-39-3	0.025	0.0020	mg/l	---	0.017	0.0020	mg/l	---	0.015	0.0020	mg/l	---
Beryllium	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cadmium	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---	ND	0.0010	mg/l	---
Calcium	7440-70-2	76.3	1.0	mg/l	---	76.5	1.0	mg/l	---	12.9	1.0	mg/l	---
Calcium - Dissolved	7440-70-2	69.7	1.0	mg/l	---	78.1	1.0	mg/l	---	13.4	1.0	mg/l	---
Chromium	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Chromium - Dissolved	7440-47-3	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt	7440-48-4	0.0012	0.0020	mg/l	J	0.0032	0.0020	mg/l	---	ND	0.0020	mg/l	---
Cobalt - Dissolved	7440-48-4	0.0011	0.0020	mg/l	J	0.0033	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper	7440-50-8	0.00050	0.0020	mg/l	J	0.0030	0.0020	mg/l	---	ND	0.0020	mg/l	---
Copper - Dissolved	7440-50-8	ND	0.0020	mg/l	---	0.0012	0.0020	mg/l	J	ND	0.0020	mg/l	---
Iron	7439-89-6	4.3	0.025	mg/l	---	1.7	0.025	mg/l	---	0.028	0.025	mg/l	---
Iron - Dissolved	7439-89-6	0.14	0.025	mg/l	---	0.013	0.025	mg/l	J	ND	0.025	mg/l	---
Lead	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Magnesium	7439-95-4	8.4	1.0	mg/l	---	28.0	1.0	mg/l	---	4.7	1.0	mg/l	---
Magnesium - Dissolved	7439-95-4	8.3	1.0	mg/l	---	30.7	1.0	mg/l	---	5.1	1.0	mg/l	---
Manganese	7439-96-5	1.0	0.0020	mg/l	---	2.7	0.020	mg/l	---	0.0016	0.0020	mg/l	J
Manganese - Dissolved	7439-96-5	1.0	0.0020	mg/l	B	2.7	0.0020	mg/l	E	0.0013	0.0020	mg/l	J
Nickel	7440-02-0	0.00085	0.0020	mg/l	J	0.0019	0.0020	mg/l	J	0.015	0.0020	mg/l	---
Nickel - Dissolved	7440-02-0	0.0012	0.0020	mg/l	J	0.0022	0.0020	mg/l	---	0.017	0.0020	mg/l	---
Potassium	7440-09-7	10.9	1.0	mg/l	---	2.8	1.0	mg/l	---	1.4	1.0	mg/l	---
Potassium - Dissolved	7440-09-7	10.3	1.0	mg/l	---	2.9	1.0	mg/l	---	1.5	1.0	mg/l	---
Selenium	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Sodium	7440-23-5	7.7	1.0	mg/l	---	10.2	1.0	mg/l	---	5.7	1.0	mg/l	---
Sodium - Dissolved	7440-23-5	7.3	1.0	mg/l	---	11.1	1.0	mg/l	---	6.4	1.0	mg/l	---
Thallium	7440-28-0	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---	ND	0.0020	mg/l	---
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---	0.00059	0.0020	mg/l	J	0.00037	0.0020	mg/l	J
Vanadium	7440-62-2	0.0022	0.0020	mg/l	B	0.0017	0.0020	mg/l	UB	0.0019	0.0020	mg/l	UB
Vanadium - Dissolved	7440-62-2	0.00087	0.0020	mg/l	UB	0.0019	0.0020	mg/l	UB	0.0025	0.0020	mg/l	B
Zinc	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---	ND	0.025	mg/l	---	ND	0.025	mg/l	---
OSW-7470A													
Mercury	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---	ND	0.00020	mg/l	---
General Chemistry													
OSW-9012B													
Cyanide, Total	57-12-5	ND	0.010	mg/l	---	0.0095	0.010	mg/l	J	0.016	0.010	mg/l	---
OSW-9056A													
Chloride	16887-00-6	1.53	1.00	mg/l	---	8.06	1.00	mg/l	---	1.54	1.00	mg/l	---
Sulfate	14808-79-8	9.23	1.00	mg/l	---	7.39	1.00	mg/l	---	14.7	1.00	mg/l	---
Prep													
APHA-2320B													
Bicarbonate Alkalinity as CaCO3	E-14508	221	10.0	mg/l	---	297	10.0	mg/l	---	44.4	10.0	mg/l	---
Total Alkalinity as CaCO3	E-14506	221	10.0	mg/l	---	297	10.0	mg/l	---	44.4	10.0	mg/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	RW-4 (333-343)-082415				TB-13-082515			
		Lab Sample ID:	490859487				490859488			
		Sample Date:	8/24/2015				8/25/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC									
OSW-8260C									
1,1,1-Trichloroethane	71-55-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2,2-Tetrachloroethane	79-34-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1,2-Trichloroethane	79-00-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethane	75-34-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2,4-Trichlorobenzene	120-82-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	10	ug/l	---	ND	10	ug/l	---
1,2-Dibromoethane	106-93-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichlorobenzene	95-50-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloroethane	107-06-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,2-Dichloropropane	78-87-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,3-Dichlorobenzene	541-73-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
1,4-Dichlorobenzene	106-46-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---
2-Butanone (MEK)	78-93-3	ND	50	ug/l	---	ND	50	ug/l	---
2-Hexanone	591-78-6	ND	10	ug/l	---	ND	10	ug/l	---
4-Methyl-2-pentanone (MIBK)	108-10-1	ND	10	ug/l	---	ND	10	ug/l	---
Acetone	67-64-1	ND	25	ug/l	---	ND	25	ug/l	---
Benzene	71-43-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromoform	75-25-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Bromomethane	74-83-9	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon disulfide	75-15-0	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Carbon tetrachloride	56-23-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorobenzene	108-90-7	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chlorodibromomethane	124-48-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroethane	75-00-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloroform	67-66-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Chloromethane	74-87-3	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,3-Dichloropropene	10061-01-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Cyclohexane	110-82-7	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Dichlorobromomethane	75-27-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Dichlorodifluoromethane	75-71-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Ethyl ether - TIC	60-29-7								
Ethylbenzene	100-41-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Freon-113	76-13-1	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Isopropylbenzene	98-82-8	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methyl acetate	79-20-9	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methyl tert-butyl ether	1634-04-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Methylcyclohexane	108-87-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Methylene Chloride	75-09-2	ND	5.0	ug/l	---	ND	5.0	ug/l	---
Styrene	100-42-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
tert-Butyldimethylsilanol - TIC	18173-64-3								
Tetrachloroethene	127-18-4	ND	6.0	ug/l	---	ND	6.0	ug/l	---
Tetrahydrofuran - TIC	109-99-9								
Toluene	108-88-3	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,3-Dichloropropene	10061-02-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichlorofluoromethane	75-69-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Xylenes, Total	1330-20-7	ND	3.0	ug/l	---	ND	3.0	ug/l	---
OSW-8260CSim									
1,2,3-Trichloropropane	96-18-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---
1,2-Dibromo-3-Chloropropane	96-12-8	ND	0.020	ug/l	---	ND	0.020	ug/l	---
1,4-Dioxane	123-91-1	ND	10	ug/l	---	ND	10	ug/l	---
Ethylene Dibromide	106-93-4	ND	0.030	ug/l	---	ND	0.030	ug/l	---

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	RW-4 (333-343)-082415				TB-13-082515			
		Lab Sample ID:	490859487				490859488			
		Sample Date:	8/24/2015				8/25/2015			
Analyte		**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS SVOC										
OSW-8270D										
	1,2,4,5-Tetrachlorobenzene	95-94-3	ND	10	ug/l	---				
	2,2'-oxybis[1-chloropropane]	108-60-1	ND	10	ug/l	UJ				
	2,3,4,6-Tetrachlorophenol	58-90-2	ND	10	ug/l	---				
	2,4,5-Trichlorophenol	95-95-4	ND	10	ug/l	---				
	2,4,6-Trichlorophenol	88-06-2	ND	10	ug/l	---				
	2,4-Dichlorophenol	120-83-2	ND	10	ug/l	---				
	2,4-Dimethylphenol	105-67-9	ND	10	ug/l	---				
	2,4-Dinitrophenol	51-28-5	ND	25	ug/l	---				
	2,4-Dinitrotoluene	121-14-2	ND	10	ug/l	---				
	2,6-Dinitrotoluene	606-20-2	ND	10	ug/l	---				
	2-Chloronaphthalene	91-58-7	ND	10	ug/l	---				
	2-Chlorophenol	95-57-8	ND	10	ug/l	---				
	2-Methylnaphthalene	91-57-6	ND	2.0	ug/l	---				
	2-Methylphenol	95-48-7	ND	10	ug/l	---				
	2-Nitroaniline	88-74-4	ND	25	ug/l	---				
	2-Nitrophenol	88-75-5	ND	10	ug/l	---				
	3 & 4 Methylphenol	65794-96-9	ND	10	ug/l	---				
	3,3'-Dichlorobenzidine	91-94-1	ND	10	ug/l	---				
	3-Nitroaniline	99-09-2	ND	25	ug/l	---				
	3H-Benz[e]indene, 2-methyl- - TIC	150096-60-9								
	4,6-Dinitro-2-methylphenol	534-52-1	ND	25	ug/l	---				
	4-Bromophenyl phenyl ether	101-55-3	ND	10	ug/l	---				
	4-Chloro-3-methylphenol	59-50-7	ND	10	ug/l	---				
	4-Chloroaniline	106-47-8	ND	10	ug/l	---				
	4-Chlorophenyl phenyl ether	7005-72-3	ND	10	ug/l	---				
	4-Nitroaniline	100-01-6	ND	25	ug/l	---				
	4-Nitrophenol	100-02-7	ND	25	ug/l	---				
	Acenaphthene	83-32-9	ND	2.0	ug/l	---				
	Acenaphthylene	208-96-8	ND	2.0	ug/l	---				
	Acetophenone	98-86-2	ND	10	ug/l	---				
	Anthracene	120-12-7	ND	2.0	ug/l	---				
	Atrazine	1912-24-9	ND	10	ug/l	---				
	Benzaldehyde	100-52-7	ND	10	ug/l	---				
	Benzenamine, N,N-dimethyl-4-nitro- - TIC	100-23-2								
	Benzo[g,h,i]perylene	191-24-2	ND	2.0	ug/l	---				
	Benzo[k]fluoranthene	207-08-9	ND	2.0	ug/l	---				
	Bis(2-chloroethoxy)methane	111-91-1	ND	10	ug/l	---				
	Bis(2-chloroethyl)ether	111-44-4	ND	10	ug/l	---				
	Bis(2-ethylhexyl) phthalate	117-81-7	ND	10	ug/l	---				
	Butyl benzyl phthalate	85-68-7	ND	10	ug/l	---				
	Caprolactam	105-60-2	ND	10	ug/l	---				
	Carbazole	86-74-8	ND	10	ug/l	---				
	Chrysene	218-01-9	ND	2.0	ug/l	---				
	Di-n-butyl phthalate	84-74-2	ND	10	ug/l	---				
	Di-n-octyl phthalate	117-84-0	ND	10	ug/l	---				
	Dibenz(a,h)anthracene	53-70-3	ND	2.0	ug/l	---				
	Dibenzofuran	132-64-9	ND	10	ug/l	---				
	Diethyl phthalate	84-66-2	ND	10	ug/l	---				
	Diethyltoluamide - TIC	134-62-3								
	Dimethyl phthalate	131-11-3	ND	10	ug/l	---				
	Diphenyl	92-52-4	ND	10	ug/l	---				
	Fluoranthene	206-44-0	ND	2.0	ug/l	---				
	Fluorene	86-73-7	ND	2.0	ug/l	---				
	Hexachlorocyclopentadiene	77-47-4	ND	10	ug/l	---				
	Hexachloroethane	67-72-1	ND	10	ug/l	---				
	Indeno[1,2,3-cd]pyrene	193-39-5	ND	2.0	ug/l	---				
	Isophorone	78-59-1	ND	10	ug/l	---				
	n-Hexadecanoic acid - TIC	57-10-3	5.4	---	ug/l	NJ				
	N-Nitrosodi-n-propylamine	621-64-7	ND	10	ug/l	---				
	N-Nitrosodiphenylamine	86-30-6	ND	10	ug/l	---				
	Naphthalene	91-20-3	ND	2.0	ug/l	---				
	Nitrobenzene	98-95-3	ND	10	ug/l	---				
	Oleic Acid - TIC	112-80-1	5.5	---	ug/l	NJ				
	p-Benzoquinone - TIC	106-51-4								
	Phenanthrene	85-01-8	ND	2.0	ug/l	---				
	Phenol	108-95-2	ND	10	ug/l	---				
	Pyrene	129-00-0	ND	2.0	ug/l	---				
	Tetradecane - TIC	629-59-4								
	Tridecanoic acid - TIC	638-53-9								
OSW-8270DSim										
	Benzo[a]anthracene	56-55-3	ND	0.046	ug/l	---				
	Benzo[a]pyrene	50-32-8	ND	0.046	ug/l	---				
	Benzo[b]fluoranthene	205-99-2	ND	0.046	ug/l	---				
	Hexachlorobenzene	118-74-1	ND	0.019	ug/l	---				
	Hexachlorobutadiene	87-68-3	ND	0.37	ug/l	---				
	N-Nitrosodimethylamine	62-75-9	ND	0.74	ug/l	---				
	Pentachlorophenol	87-86-5	ND	0.28	ug/l	---				

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	RW-4 (333-343)-082415				TB-13-082515			
		Lab Sample ID:	490859487				490859488			
		Sample Date:	8/24/2015				8/25/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other									
OSW-8082A									
PCB-1016	12674-11-2	ND	0.50	ug/l	---				
PCB-1221	11104-28-2	ND	0.50	ug/l	---				
PCB-1232	11141-16-5	ND	0.50	ug/l	---				
PCB-1242	53469-21-9	ND	0.50	ug/l	---				
PCB-1248	12672-29-6	ND	0.50	ug/l	---				
PCB-1254	11097-69-1	ND	0.50	ug/l	---				
PCB-1260	11096-82-5	ND	0.50	ug/l	---				
Polychlorinated biphenyls, Total	1336-36-3	ND	0.50	ug/l	---				
Metals									
OSW-6020A									
Aluminum	7429-90-5	0.86	0.020	mg/l	---				
Aluminum - Dissolved	7429-90-5	1.0	0.020	mg/l	---				
Antimony	7440-36-0	ND	0.0020	mg/l	---				
Antimony - Dissolved	7440-36-0	0.00055	0.0020	mg/l	J				
Arsenic	7440-38-2	0.00090	0.0020	mg/l	J				
Arsenic - Dissolved	7440-38-2	0.0011	0.0020	mg/l	J				
Barium	7440-39-3	0.019	0.0020	mg/l	---				
Barium - Dissolved	7440-39-3	0.022	0.0020	mg/l	---				
Beryllium	7440-41-7	ND	0.0020	mg/l	---				
Beryllium - Dissolved	7440-41-7	ND	0.0020	mg/l	---				
Cadmium	7440-43-9	ND	0.0010	mg/l	---				
Cadmium - Dissolved	7440-43-9	ND	0.0010	mg/l	---				
Calcium	7440-70-2	51.4	1.0	mg/l	---				
Calcium - Dissolved	7440-70-2	59.8	1.0	mg/l	---				
Chromium	7440-47-3	0.036	0.0020	mg/l	---				
Chromium - Dissolved	7440-47-3	0.043	0.0020	mg/l	---				
Cobalt	7440-48-4	ND	0.0020	mg/l	---				
Cobalt - Dissolved	7440-48-4	ND	0.0020	mg/l	---				
Copper	7440-50-8	0.0011	0.0020	mg/l	J				
Copper - Dissolved	7440-50-8	0.0015	0.0020	mg/l	J				
Iron	7439-89-6	ND	0.025	mg/l	---				
Iron - Dissolved	7439-89-6	ND	0.025	mg/l	---				
Lead	7439-92-1	ND	0.0020	mg/l	---				
Lead - Dissolved	7439-92-1	ND	0.0020	mg/l	---				
Magnesium	7439-95-4	ND	1.0	mg/l	---				
Magnesium - Dissolved	7439-95-4	ND	1.0	mg/l	---				
Manganese	7439-96-5	ND	0.0020	mg/l	---				
Manganese - Dissolved	7439-96-5	0.00052	0.0020	mg/l	J				
Nickel	7440-02-0	ND	0.0020	mg/l	---				
Nickel - Dissolved	7440-02-0	ND	0.0020	mg/l	---				
Potassium	7440-09-7	4.5	1.0	mg/l	---				
Potassium - Dissolved	7440-09-7	5.4	1.0	mg/l	---				
Selenium	7782-49-2	0.00080	0.0020	mg/l	J				
Selenium - Dissolved	7782-49-2	ND	0.0020	mg/l	---				
Silver	7440-22-4	ND	0.0020	mg/l	---				
Silver - Dissolved	7440-22-4	ND	0.0020	mg/l	---				
Sodium	7440-23-5	15.8	1.0	mg/l	---				
Sodium - Dissolved	7440-23-5	18.8	1.0	mg/l	---				
Thallium	7440-28-0	ND	0.0020	mg/l	---				
Thallium - Dissolved	7440-28-0	ND	0.0020	mg/l	---				
Vanadium	7440-62-2	0.012	0.0020	mg/l	---				
Vanadium - Dissolved	7440-62-2	0.013	0.0020	mg/l	---				
Zinc	7440-66-6	ND	0.025	mg/l	---				
Zinc - Dissolved	7440-66-6	ND	0.025	mg/l	---				
OSW-7470A									
Mercury	7439-97-6	ND	0.00020	mg/l	---				
Mercury - Dissolved	7439-97-6	ND	0.00020	mg/l	---				
General Chemistry									
OSW-9012B									
Cyanide, Total	57-12-5	ND	0.010	mg/l	---				
OSW-9056A									
Chloride	16887-00-6	3.76	1.00	mg/l	---				
Sulfate	14808-79-8	21.2	1.00	mg/l	---				
Prep									
APHA-2320B									
Bicarbonate Alkalinity as CaCO3	E-14508	ND	10.0	mg/l	---				
Total Alkalinity as CaCO3	E-14506	128	10.0	mg/l	---				

APPENDIX 4

Qualified Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-1

		Sample Name:	OB-15B-082415				RW-13 (71-91)-082415				FB-01-082415				RW-5A-082415				OB-7-082415				RW-4A (113-123)-082415				RW-4 (333-343)-082415				TB-13-082515			
		Lab Sample ID:	490859481				490859482				490859483				490859484				490859485				490859486				490859487				490859488			
		Sample Date:	8/24/2015				8/24/2015				8/24/2015				8/24/2015				8/24/2015				8/24/2015				8/24/2015				8/25/2015			
Analyte	**Cas No.**		**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC/MS VOC																																		
OSW-8260C																																		
Chloromethane	74-87-3		ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ
Ethyl ether - TIC	60-29-7																		0.28	5.0	ug/l	J												
Methyl acetate	79-20-9		ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ
Methylene Chloride	75-09-2										0.53	5.0	ug/l	UB																				
tert-Butyldimethylsilanol - TIC	18173-64-3																						3.1	---	ug/l	NJ								
Tetrahydrofuran - TIC	109-99-9						0.98	10	ug/l	J																								
GC/MS SVOC																																		
OSW-8270D																																		
2,2'-oxybis[1-chloropropane]	108-60-1		ND	8.6	ug/l	UJ	ND	9.3	ug/l	UJ	ND	8.6	ug/l	UJ	ND	8.6	ug/l	UJ	ND	9.3	ug/l	UJ	ND	10	ug/l	UJ	ND	10	ug/l	UJ				
3H-Benz[e]indene, 2-methyl- - TIC	150096-60-9						4.6	---	ug/l	NJ																								
Benzenamine, N,N-dimethyl-4-nitro- - TIC	100-23-2						7.5	---	ug/l	NJ																								
Diethyltoluamide - TIC	134-62-3										11	---	ug/l	NJ	5.4	---	ug/l	NJ																
n-Hexadecanoic acid - TIC	57-10-3						3.4	---	ug/l	NJ													4.8	---	ug/l	NJ	5.4	---	ug/l	NJ				
Oleic Acid - TIC	112-80-1		3.1	---	ug/l	NJ	5.7	---	ug/l	NJ					6.6	---	ug/l	NJ	17	---	ug/l	NJ	15	---	ug/l	NJ	5.5	---	ug/l	NJ				
p-Benzoquinone - TIC	106-51-4		7.0	---	ug/l	NJ																												
Tetradecane - TIC	629-59-4						3.0	---	ug/l	NJ																								
Tridecanoic acid - TIC	638-53-9																		3.5	---	ug/l	NJ												
Metals																																		
OSW-6020A																																		
Lead	7439-92-1		0.00063	0.0020	mg/l	UB																												
Manganese - Dissolved	7439-96-5										0.00059	0.0020	mg/l	UB	1.0	0.0020	mg/l	B	2.7	0.0020	mg/l	E												
Selenium - Dissolved	7782-49-2						0.0030	0.0020	mg/l	B																								
Thallium	7440-28-0		0.0011	0.0020	mg/l	UB																												
Vanadium	7440-62-2										0.0013	0.0020	mg/l	UB	0.0022	0.0020	mg/l	B	0.0017	0.0020	mg/l	UB	0.0019	0.0020	mg/l	UB								
Vanadium - Dissolved	7440-62-2		0.0024	0.0020	mg/l	B	0.0022	0.0020	mg/l	B	0.00095	0.0020	mg/l	UB	0.00087	0.0020	mg/l	UB	0.0019	0.0020	mg/l	UB	0.0025	0.0020	mg/l	B								

APPENDIX 5

EPA Sample Holding Time and Preservation Requirements

Parameter	***Reference Method***	***Matrix***	***Preservation & Storage***	***Holding Times***
Volatile Organics by GCMS	OSW-8260C/SIM	Water	Acidify ph<2 Refrigeration 0-6$_o$C	14 days
Semivolatile Organics by GCMS	OSW-8270D/SIM	Water	Refrigeration 0-6$_o$C	7 days Extraction 40 days Analysis
Polychlorinated Biphenyls by GC/ECD	OSW-8082A	Water	Refrigeration 0-6$_o$C	365 days - Extraction - Analysis
Metals by ICP/ICPMS Spectroscopy	OSW-6010B OSW-6020A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	180 days
Mercury in Aqueous Waste	OSW-7470A	Water	Acidify pH<2 Refrigeration 0-6$_o$C	28 days
Alkalinity	EPA 2320B	Water	Refrigeration 0-6$_o$C	14 days
Chloride and Sulfate	OSW-9056A	Water	Refrigeration 0-6oC	28 days
Total and Amenable Cyanide	OSW-9012B	Water	Test for presence of Sulfide – if unknown collect two samples and treat one with Lead Carbonate. Then adjust sample to pH of greater than or equal to 12with NaOH. Refrigeration at 0-4C –(also may require treatment for aldehydes and chlorine/hypochlorite/sulfite)	14 days if preserved. 24 hours or sooner if unpreserved

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

Loc: 490
85948
#1
L

TestAmerica

09/21/2015

Client Information	Sampler: Robert Lautenberg	Lab PM: Brown, Shali	Carrier Tr	COC No: 490-41539-14078.2
Client Contact: Tim Roeper	Phone: 845 695 0200	E-Mail: shali.brown@testamericainc.com		Page:
Company: Cornerstone Environmental Group, LLC/ FORD				Job #:
Address: 100 Crystal Run Road Suite 101	Due Date Requested:			
City: Middletown	TAT Requested (days): Standard TAT -Levl IV data package			
State, Zip: NY, 10941				
Phone: 845-695-0252(Tel)	PO #:			
Email: tim.roeper@cornerstoneeg.com	WO #:			
Project Name: FORD Ringwood Mines SA GW/SW E203361	Project #: 49008864			
Site:	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C TCL + Total Alkanes and 15 TICs	8260B_SIM Custom Short List	8270D TCL plus 15 TICs	8270D_SIM Custom List	80822A Standard PCB's (7)	6020A, 7470A - TAL Metals (Total)	6020A, 7470A - TAL Metals (Dissolved, lab filterf)	9012B - Cyanide, Total	2320B Total and Bicarbonate Alkalinity	9056A_ORGFM_28D Chloride and Sulfate				Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
OB-15B-082415	8/24/15	11:15	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
RW-13 (71-91)-082415	8/24/15	13:35	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
FB-01-082415	8/24/15	07:30	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
RW-5A-082415	8/24/15	10:25	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
OB-7-082415	8/24/15	12:50	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
RW-4A (113-123)-082415	8/24/15	09:35	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
RW-4 (333-343)-082415	8/24/15	11:25	G	Water	N	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
TB-13-082515	8/25/15	—	—	Water	N	N	✓	✓													
				Water																	
				Water																	
				Water																	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[illegible]	8/25/15 0800	Cornerstone	James Thesson	8/25/15 0800	TA
James Thesson	8-25-15 1140	TA	[illegible] 1510 5/1.2	8/26/15 915	TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

November 20, 2015

Tim Roeper
Cornerstone EG
100 Crystal Run Road
Suite 101
Middletown, NY 10941

CADENA project ID: E203361
Project: Ford Ringwood Mines Project
Project number:
Laboratory: TestAmerica - Nashville
Laboratory submittal: 85948-2
Sample date: 2015-08-24
Report received by CADENA: 2015-11-20
Initial Data Verification completed by CADENA: 2015-11-20

There were no significant QC anomalies or exceptions to report.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

2 Water sample(s) were analyzed for PCB parameter(s).

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at http://clms.cadenaco.com/index.cfm.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: TestAmerica-Nashville
Laboratory Submittal: 85948-2

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	OSW-8082A
490859484	RW-5A-082415	8/24/2015	10:25:00	X
490859486	RW-4A (113-123)-082415	8/24/2015	9:35:00	X

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: TestAmerica - Nashville
Laboratory Submittal: 85948-2

		Sample Name:	RW-5A-082415				RW-4A (113-123)-082415			
		Lab Sample ID:	490859484				490859486			
		Sample Date:	8/24/2015				8/24/2015			
Analyte	**Cas No.**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**	**Result**	**Report Limit**	**Units**	**Valid Qualifier**
GC Other									
OSW-8082A									
PCB-1016	12674-11-2	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1221	11104-28-2	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1232	11141-16-5	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1242	53469-21-9	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1248	12672-29-6	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1254	11097-69-1	ND	0.45	ug/l	---	ND	0.50	ug/l	---
PCB-1260	11096-82-5	ND	0.45	ug/l	---	ND	0.50	ug/l	---
Polychlorinated biphenyls, Total	1336-36-3	ND	0.45	ug/l	---	ND	0.50	ug/l	---