Template Name
CitationID
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DO NOT REMOVE OR EDIT INFORMATION IN ROWS 1 THROUGH 5 - FOR INTERNAL USE ONLY
63.655(h)(8) Fenceline Monitoring Report (Spreadsheet Template)
63.655(h)(8)
v1.00
3/19/2019

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§63.655(h)(8) Fenceline Monitoring Report Spreadsheet Template

Welcome and Instructions

Purpose:

This spreadsheet template was designed by the U.S. EPA to facilitate fenceline monitoring reporting for Petroluem Refineries under 40 CFR part 63, subpart CC. CEDRI is accessed through the EPA's Central Data Exchange

Electronic reporting:

Electronic submission of fenceline monitoring reports through the EPA's Compliance and Emissions Data Reporting

This spreadsheet template is required to be uploaded to CEDRI to fulfill the electronic reporting requirement under §63.655(h)(8). CEDRI is accessed through the EPA's Central Data Exchange: https://cdx.epa.gov

Do not submit confidential business information (CBI) to EPA via CEDRI. If you are required to submit a report in CEDRI, you must submit the report via CEDRI with the CBI omitted and mail a complete report, including any information claimed to be CBI, to EPA on a compact disc, flash drive, or other commonly used electronic storage media via U.S. Postal Service. You must mark the outside of the digital storage media as CBI and then identify electronically within the digital storage media the specific information that is claimed as CBI. Mail the media to the address in the referencing federal regulation. If no address is specified, mail the media to:

U.S. EPA/OAQPS/CORE CBI Office Attention: Group Leader,
Measurement Policy Group MD C404-02

NOTE: The CEDRI spreadsheet template upload feature allows you to submit data in a single report for a single facility or multiple facilities using this EPA provided Excel workbook. Data for each facility must be entered into the worksheet labeled "Facility Information" in this Excel workbook. Each row in the "Facility Information" worksheet

For each facility record found in the "Facility Information" worksheet, you may reference a single file attachment that includes additional information. If you are uploading file attachments for your report, the uploaded files may be in any format (e.g., zip, docx, PDF). If you would like to include an Excel file(s) as an attachment, you must first zip the excel

IMPORTANT: The final CEDRI upload file must be a single ZIP file, which must include this Excel workbook and any related attachments that were referenced in the workbook (i.e., additional information file found in the "Facilty

§63.655 Reporting and recordkeeping requirements.

(8) For fenceline monitoring systems subject to §63.658, each owner or operator shall submit the following information to the EPA's Compliance and Emissions Data Reporting Interface (CEDRI) on a quarterly basis. (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). The first quarterly report must be submitted once the owner or operator has obtained 12 months of data. The first quarterly report must cover the period beginning on the compliance date that is specified in Table 11 of this subpart and ending on March 31, June 30, September 30 or December 31, whichever date is the first date that occurs after the owner or operator has obtained 12 months of data (i.e., the first quarterly report will contain between 12 and 15 months of data). Each subsequent quarterly report must cover one of the following reporting periods: Quarter 1 from January 1 through March 31; Quarter 2 from April 1 through June 30; Quarter 3 from July 1 through September 30; and Quarter 4 from

(i) Facility name and address.

(ii) Year and reporting quarter (i.e., Quarter 1, Quarter 2, Quarter 3, or Quarter 4).

(iii) For the first reporting period and for any reporting period in which a passive monitor is added or moved, for each passive monitor: the latitude and longitude location coordinates; the sampler name; and identification of the type of sampler (i.e., regular monitor, extra monitor, duplicate, field blank, inactive). The owner or operator shall determine the coordinates using an instrument with an accuracy of at least 3 meters. Coordinates shall be in decimal degrees with at least five decimal places.

(iv) The beginning and ending dates for each sampling period.

(v) Individual sample results for benzene reported in units of µg/m3 for each monitor for each sampling period that ends during the reporting period. Results below the method detection limit shall be flagged as below the detection limit and reported at the method detection limit.

(vi) Data flags that indicate each monitor that was skipped for the sampling period, if the owner or operator uses an alternative sampling frequency under §63.658(e)(3).

(vii) Data flags for each outlier determined in accordance with Section 9.2 of Method 325A of appendix A of this part. For each outlier, the owner or operator must submit the individual sample result of the outlier, as well as the evidence used to conclude

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The Fenceline Monitoring Program

The fenceline monitoring program requires refineries to monitor benzene emissions around their property boundary. The objective of this program is to have refineries assess the benzene monitoring data from their emissions sources such that the refinery can take appropriate actions to address the emissions from these sources in the event they exceed the benzene action level set by EPA.

The benzene monitoring data are reported to EPA electronically on a quarterly basis starting in May 2019. EPA posts the data on WebFIRE, a publicly accessible website, so the public can stay informed on the fenceline monitoring program.

Fenceline Monitoring Regulatory Requirements

40 CFR part 63 subpart CC (Refinery MACT CC) requires all refineries to implement a fenceline monitoring program for benzene emissions. The regulatory requirements of the program can be found in 40 CFR 63.658, and the reporting requirements can be found in 40 CFR 63.655(h)(8). Fenceline monitoring is required to be performed in accordance with Methods 325A and 325B of 40 CFR part 63 Appendix A.

40 CFR Part 63 Subpart CC is available here.

Methods 325A and 325B are available here.

Fenceline Monitoring Data Collection and Reporting

The fenceline monitors are passive diffusive tubes that are placed around the property boundary of the refinery. Each tube pulls a sample for a continuous two-week period. New tubes are placed on the property boundary every two weeks. Benzene concentration measurements from the two week-samples are required to be reported to EPA on a quarterly basis. The refinery is required to subtract the lowest individual monitor reading from the highest individual monitor reading for each two-week period. This result is called the benzene concentration difference (Δc) for a given two-week sample period. An annual average Δc is calculated from the most recent 26 two-week sampling periods. The annual average Δc is recalculated on a rolling basis, meaning it is updated for every two-week sample that is taken by the refinery.

Remaining consistent with EPA's practice to generally require reporting of all test data and not just values calculated from test data and/or where a facility exceeds an emission or operating limit, refineries are required to report the individual fenceline monitoring results for each two-week sampling period for each monitor. This data is submitted electronically through EPA's Compliance and Emissions Data Reporting Interface (CEDRI), which is a reporting portal on EPA's Central Data Exchange (CDX).

How the Fenceline Monitoring Data Should Be Used

The fenceline monitoring data provide refiners additional insight into their emission sources and their potential impacts, such that they can take appropriate actions to mitigate and address the emissions from these sources in the event the annual average Δc exceeds the benzene action level. Since samples are completed every two weeks, refineries may also be able to identify sources that might lead to elevated fenceline concentrations and can correct issues early, in efforts to avoid exceeding the benzene action level.

The public availability of the monitoring data provides transparency and allows for public oversight. The data are being provided to the public so that they can stay informed on the status of refinery monitoring data and emission sources and the actions a refinery is taking to address issues, as necessary.

How the Fenceline Monitoring Data Should Not Be Used

The benzene action level is not an ambient air standard. The fenceline monitors are not intended to provide a measure of benzene levels in the community. There is no correlation between the benzene action level and any health-based benzene or other hazardous air pollutant exposure standard. The benzene action level does not correlate to a benzene emissions level that presents a risk to the public. EPA did not establish the fenceline monitoring program as a risk reduction step under the Clean Air Act section 112(f)(2). Rather, the fenceline monitoring requirements are a development of practices that will provide additional information on the status of emission sources for refineries and the public. It is also important to note that the fenceline monitoring program is not an appropriate tool for monitoring and assessing emergency releases since the data from the monitors are not immediately available.

The fenceline monitors are not limited to measuring emissions from only refineries. The passive diffusive tubes may collect benzene from nearby sources that refineries do not manage, such as neighboring facilities, roadways, airports, marine ports, and from environmental events (e.g., smoke from forest fires). External emissions sources may contribute to elevated background readings that are measured by a refinery's fenceline monitors. Consequently, while this monitoring program is a reasonable means for a refinery to oversee its emission sources, there may be situations where the monitors identify benzene emissions that do not originate from the refinery.

The Benzene Action Level

The benzene action level is 9 micrograms per cubic meter ($\mu g/m^3$) for the rolling annual average Δc. Exceeding the benzene action level is not a violation of the Refinery MACT CC regulation. Rather, exceeding the action level requires the refinery to perform a root cause and corrective action analysis. While the data from an individual monitor for any 2-week sampling period may be above 9 $\mu g/m^3$ or an individual sampling period Δc value may be above 9 $\mu g/m^3$, the root cause and corrective action analysis is only required when the rolling annual average Δc is above 9 $\mu g/m^3$. It is important to note that an individual elevated value from a monitor may be the result of an upset event in the refinery, but it could also be related to a process change maintenance activity or an intermittent emission from a source external to the refinery, as discussed above. The fenceline monitoring program recognizes these possibilities and provides a mechanism to identify and address these situations.

Because the rolling annual average Δc is based on the sample results from 26 individual 2-week sample periods, the rolling annual average Δc may remain above the benzene action level even after the root cause of the action level exceedance has been addressed. In other words, one elevated sampling period Δc value may continue to affect the rolling annual average Δc for subsequent sampling periods. This does not mean the emission source that contributed to the higher Δc value is continuing, but rather that the high Δc value may impact the rolling annual average Δc for an additional 25 sampling periods (until the high Δc value is no longer used in calculating the rolling annual average Δc).

How the Benzene Action Level was Developed

EPA established the benzene action level by conducting atmospheric dispersion modeling to determine expected fenceline benzene concentrations. The dispersion modeling used the emissions inventories reported by refineries in response to the 2011 Refinery ICR, which were adjusted to represent reductions from additional control requirements prescribed in amendments to Refinery MACT CC and 40 CFR part 63 subpart UUU (together, the Refinery Sector MACT Rules) that were published on Dec. 1, 2015. Atmospheric dispersion modeling is a mathematical simulation of how air pollutants disperse in the atmosphere, which allows the modeler to evaluate what the expected concentration would be at any given geographic point. These geographic points are referred to as receptor locations. Modeling was conducted using EPA's American Meteorological Society/EPA Regulatory Model dispersion modeling system (AERMOD) to determine estimated concentrations within the sites and extending from the facility outward to a distance of 50 kilometers. This modeling indicated that based on refinery emissions sources controlled consistent with the existing and updated provisions specified in the Refinery Sector MACT Rules, the maximum post-control benzene concentration expected at the fenceline should be 9 $\mu g/m^3$ (annual average).

The refinery emissions inventories generally reflect the emissions from emission sources with required emissions controls working as designed (e.g., no tears in seals for storage vessel floating roofs, water seals in sewer drains). If a refinery's emissions inventory is correct, then the annual average Δc benzene values for the refinery should not exceed 9 $\mu g/m^3$. Because EPA's modeling approach considers only the emissions from the refinery and not the background readings from emission sources external to the refinery, this concentration is comparable to the highest modeled fenceline concentration after correcting for these background emission sources. The subtraction of the lowest monitor reading from the highest monitor reading in the calculation of Δc accounts for background readings from these emissions sources.

Site-Specific Monitoring Plans

Refineries may request approval from EPA to use a site-specific monitoring plan to account for emissions sources from the refinery source category or external to the refinery that are not regulated by the Refinery Sector MACT Rules. The site-specific monitoring plan must include identification of these emissions sources. For excluded onsite sources, the plan must include documentation that the onsite source is excluded from the Refinery Sector MACT Rules. The plan must also include the location of any additional monitoring stations that will be used to determine a uniform background concentration or concentrations contributed by the excluded emission source(s); identification of the fenceline monitoring location(s) impacted by the excluded emissions source(s); and a description of the calculations that will be used to determine the concentration contribution for each monitoring location. If more frequent monitoring or a monitoring station other than a passive diffusive tube monitoring station is proposed, the plan must provide a detailed description of the measurement methods, measurement frequency, and recording frequency for determining the uniform background or concentrations contributed by the excluded emission source(s). These plans will be made available to the public in WebFIRE.

Data Flags

EPA Methods 325A and 325B include numerous quality control checks, including laboratory blanks, field blanks, and duplicate samples. In the event there are data that are flagged, under the "Sample Results" tab of this workbook, refiners may note the flags that have been identified on laboratory data and provide explanations of what these flags mean. Data flagged for adjustment or elimination will be documented in the site's refinery quarterly data reports that are submitted electronically through CEDRI.

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For fenceline monitoring systems subject to §63.658, each owner or operator shall submit the f

The asterisk (*) next to each field indicates that the corresponding field is required.

Facility Record No. *   **(Field value will automatically generate if a value is not entered.)**
XML Tag:
e.g.: 1
e.g.: ER01
1

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ollowing information to the EPA's Compliance and Emissions Data Reporting Interface (CEDRI) on a quarterly basis.

SITE INFORMATION

Facility Name * (§63.655(h)(8)(i))	**Address * (§63.655(h)(8)(i))**	**Address 2**	**City * (§63.655(h)(8)(i))**	**County ***	**State Abbreviation * (§63.655(h)(8)(i))**	**Zip Code * (§63.655(h)(8)(i))**
FacilityName	AddressLine1	AddressLine2	CityName	CountyName	StateName	ZIPCode
e.g.: ABC Company	e.g.: 123 Main Street	e.g.: Suite 101	e.g.: Brooklyn	e.g.: Kings	e.g.: NY	e.g.: 11221
e.g.: Exemplar Refining	e.g.: 345 Park	e.g.: Suite 100	e.g.: Houston	e.g.: Harris	e.g.: TX	e.g.: 77390
Philadelphia Energy Solutions	3144 Passyunk Avenue		Philadelphia	Philadelphia	PA	19145

	REPORTING PERIOD		ADDITIONAL INFORMATION	
Responsible Agency Facility ID (State Facility Identifier)	**Sampling Year * (§63.655(h)(8)(ii))**	**Sampling Quarter * (§63.655(h)(8)(ii))**	**Please enter any additional information.**	**Enter associated file name reference.**
StateFacID	SamplingYear	SamplingQuarter	AddInfo	AddFile
e.g.: AI 725647	e.g.: 2019	e.g.: Quarter 4		e.g.: addlinfo.zip
e.g.: TX12345	e.g.: 2018	e.g.: Quarter 1		
110000336994	2019	Quarter 2	Report generated by Fenceline Pro™, powered by Trihydro	

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Submit the beginning and ending dates for each sampling period, the biweekly concentration difference (Δc) for each sampling period, and the annual average Δc for benzene for each sampling period.

NOTE: See tab labeled "Background" for information on interpretation of the data presented below.

The asterisk (*) next to each field indicates that the corresponding field is required.

Facility Record No. * **(Select from dropdown list)**
XML Tag:
e.g.: 1
e.g.: ER01
e.g.: ER01
e.g.: ER01
e.g.: ER01
1
1
1
1
1
1

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Sampling Period ID *	Sampling Period Start Date * (§63.655(h)(8)(iv))	Sampling Period End Date * (§63.655(h)(8)(iv))	Sampling Period Δc * (µg/m^3) (§63.655(h)(8)(iv))	Annual Average Δc * (µg/m^3) (§63.655(h)(8)(iv))	Comments
PeriodId	PeriodStartDate	PeriodEndDate	PeriodAvg	AnnualAvg	PeriodComments
e.g.: 010219	e.g.: 12/31/18	e.g.: 1/14/19	e.g.: 2	e.g.: 5	
e.g.: 2018-1	e.g.: 1/1/18	e.g.: 1/14/18	e.g.: 7.5	e.g.: 4.3	
e.g.: 2018-2	e.g.: 1/14/18	e.g.: 1/27/18	e.g.: 4.9	e.g.: 4.2	
e.g.: 2018-3	e.g.: 1/27/18	e.g.: 2/9/18	e.g.: 4.5	e.g.: 4.3	
2019-0327	3/27/2019	4/10/2019	30	29	
2019-0410	4/10/2019	4/24/2019	48	30	
2019-0424	4/24/2019	5/8/2019	16	30	
2019-0508	5/8/2019	5/22/2019	189	37	
2019-0522	5/22/2019	6/5/2019	13	37	
2019-0605	6/5/2019	6/19/2019	41	38	

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For the first reporting period and for any reporting period in which a passive monitor is added or moved, for each passive monitor: the latitude and longitude location coordinates; the sampler name; and identification of the type of sampler (i.e., regular monitor, extra monitor, duplicate, field blank, inactive). The owner or operator shall determine the coordinates using an instrument with an accuracy of at least 3 meters. Coordinates shall be in decimal degrees with at least five decimal places.

The asterisk (*) next to each field indicates that the corresponding field is required.

Facility Record No. * (Select from dropdown list)	**Sampler Name * (§63.655(h)(8)(iiii))**	**Latitude of Passive Sampler in Decimal Degree (at least five decimal places) * (§63.655(h)(8)(iiii))**	**Longitude of Passive Sampler in Decimal Degree (at least five decimal places) * (§63.655(h)(8)(iiii))**	**Passive Sampler Type * (§63.655(h)(8)(iiii))**	**Comments**
XML Tag:	SamplerName	SamplerLatitude	SamplerLongitude	SamplerType	SamplerComments
e.g.: 1	e.g.: PS1	e.g.: 34.12345	e.g.: -101.12345	e.g.: Regular Monitor	
e.g.: ER01	e.g.: ER-01	e.g.: 29.74615242	e.g.: -95.36109815	e.g.: Regular Monitor	
e.g.: ER01	e.g.: ER-03	e.g.: 29.7469659	e.g.: -95.36492524	e.g.: Duplicate	
e.g.: ER01	e.g.: ER-04	e.g.: 29.7469659	e.g.: -95.36492524	e.g.: Field Blank	
e.g.: ER01	e.g.: ER-11	e.g.: 29.75407539	e.g.: -95.35852382	e.g.: Extra Monitor	
1	ST1	39.91593	-75.19201	Regular Monitor	
1	ST1	39.91593	-75.19201	Duplicate	
1	ST10	39.92919	-75.19901	Regular Monitor	
1	ST10	39.92919	-75.19901	Duplicate	
1	ST11	39.91993	-75.19242	Regular Monitor	
1	ST11	39.91993	-75.19242	Duplicate	
1	ST12	39.92773	-75.21032	Regular Monitor	
1	ST12	39.92773	-75.21032	Duplicate	
1	ST13	39.90612	-75.21433	Regular Monitor	
1	ST14	39.90117	-75.21300	Regular Monitor	
1	ST14	39.90117	-75.21300	Field Blank	
1	ST16	39.90974	-75.20944	Regular Monitor	
1	ST16	39.90974	-75.20944	Field Blank	
1	ST17	39.90296	-75.20149	Regular Monitor	
1	ST17	39.90296	-75.20149	Field Blank	
1	ST18	39.91681	-75.20185	Regular Monitor	
1	ST18	39.91681	-75.20185	Duplicate	
1	ST2	39.91306	-75.19268	Regular Monitor	
1	ST2	39.91306	-75.19268	Duplicate	
1	ST20	39.90984	-75.21243	Regular Monitor	
1	ST20	39.90984	-75.21243	Field Blank	
1	ST21	39.92298	-75.21074	Regular Monitor	
1	ST21	39.92298	-75.21074	Duplicate	
1	ST22	39.92212	-75.20434	Regular Monitor	
1	ST22	39.92212	-75.20434	Duplicate	
1	ST23	39.92808	-75.20958	Regular Monitor	
1	ST23	39.92808	-75.20958	Duplicate	
1	ST24	39.91010	-75.20585	Regular Monitor	
1	ST24	39.91010	-75.20585	Field Blank	
1	ST25	39.90518	-75.19618	Regular Monitor	
1	ST25	39.90518	-75.19618	Duplicate	
1	ST25	39.90518	-75.19618	Field Blank	
1	ST26	39.93015	-75.20560	Regular Monitor	
1	ST26	39.93015	-75.20560	Duplicate	
1	ST27	39.91000	-75.19346	Regular Monitor	
1	ST27	39.91000	-75.19346	Duplicate	
1	ST27	39.91000	-75.19346	Field Blank	
1	ST28	39.89540	-75.20431	Regular Monitor	
1	ST28	39.89540	-75.20431	Field Blank	
1	ST31	39.91850	-75.19148	Regular Monitor	

1	ST31	39.91850	-75.19148	Duplicate	
1	ST32	39.92195	-75.20801	Regular Monitor	
1	ST32	39.92195	-75.20801	Duplicate	
1	ST33	39.90332	-75.21379	Regular Monitor	
1	ST34	39.92801	-75.19662	Regular Monitor	
1	ST35	39.92631	-75.19486	Regular Monitor	
1	ST36	39.92029	-75.19669	Regular Monitor	
1	ST36	39.92029	-75.19669	Field Blank	
1	ST37	39.92396	-75.19880	Regular Monitor	
1	ST37	39.92396	-75.19880	Field Blank	
1	ST4	39.91503	-75.20256	Regular Monitor	
1	ST4	39.91503	-75.20256	Duplicate	
1	ST5	39.91959	-75.20063	Regular Monitor	
1	ST5	39.91959	-75.20063	Duplicate	
1	ST6	39.89757	-75.20953	Regular Monitor	
1	ST6	39.89757	-75.20953	Field Blank	
1	ST7	39.89626	-75.20060	Regular Monitor	
1	ST8	39.89798	-75.20049	Regular Monitor	

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Report: (v) Individual sample results for benzene reported for each monitor for each sampling period that ends during the reporting period. Results below the method detection limit shall be flagged as below the detection limit and reported at the method detection limit. (vi) Data flags that indicate each monitor that was skipped for the sampling period, if the owner or operator uses an alternative sampling frequency under §63.658(e)(3). (vii) Data flags for each outlier determined in accordance with Section 9.2 of Method 325A of appendix A of this part. For each outlier, the owner or operator must submit the individual sample result of the outlier, as well as the evidence used to conclude that the result is an outlier.

The asterisk (*) next to each field indicates that the corresponding field is required.

Facility Record No. * (Select from dropdown list)	Sampling Period ID * (Select from dropdown list)	Sampler Name *	Passive Sampler Type	Sampling Period Benzene Concentration ($\mu g/m^3$) * (§63.655(h)(8)(v))	Corrected Sampling Period Benzene Concentration (e.g., if required by site-specific monitoring plan) ($\mu g/m^3$)	Below method detection limit (BDL)? * (§63.655(h)(8)(v))	Lab Reported Benzene Concentration for BDL Sample ($\mu g/m^3$)	Outlier? * (If yes, attach evidence in Additional Information on Facility Information tab.) (§63.655(h)(8)(vii))	Skipped due to §63.658(e)(3)? * (§63.655(h)(8)(vi))	Other Data Flag(s)	Explanation
XML Tag:	PeriodId	SamplerName	SamplerType	BenzeneAmt	CorrectedBenzeneAmt	BdlFlag	BdlAmt	OutlierFlag	SkippedFlag	OtherData	ResultsComments
e.g.: 1	e.g.: 010219	e.g.: PS1	e.g.: Regular Monitor	e.g.: 0.52		e.g.: no		e.g.: no	e.g.: no	e.g.: E	e.g.: Exceeded calibration range
e.g.: ER01	e.g.: 2018-1	e.g.: ER-01	e.g.: Regular Monitor	e.g.: 0.140		e.g.: yes	e.g.: 0.112	e.g.: no	e.g.: no		e.g.: Method detection limit is 0.140, but lab reported sample concentration is 0.112.
e.g.: ER01	e.g.: 2018-1	e.g.: ER-03	e.g.: Duplicate	e.g.: 12.0	e.g.: 4.00	e.g.: no		e.g.: no	e.g.: no	e.g.: X	e.g.: Adjusted for Offsite Contributor per Site Specific Monitoring Plan
e.g.: ER01	e.g.: 2018-2	e.g.: ER-01	e.g.: Regular Monitor	e.g.: 0.258		e.g.: no		e.g.: no	e.g.: no	e.g.: J	e.g.: Estimated value between MDL and RL
e.g.: ER01	e.g.: 2018-2	e.g.: ER-03	e.g.: Duplicate	e.g.: 22.0	e.g.: 0.00	e.g.: no		e.g.: no	e.g.: no	e.g.: Fe	e.g.: Discarded due to tube found missing diffusion cap during sample retrieval
e.g.: ER01	e.g.: 2018-3	e.g.: ER-01	e.g.: Regular Monitor	e.g.: 2.00		e.g.: no		e.g.: no	e.g.: no		
1	2019-0327	ST1	Regular Monitor	2.7		no		no	no		
1	2019-0327	ST10	Regular Monitor	1.2		no		no	no		
1	2019-0327	ST10	Duplicate	1.2		no		no	no		
1	2019-0327	ST11	Regular Monitor	2		no		no	no		
1	2019-0327	ST12	Regular Monitor	1.1		no		no	no		
1	2019-0327	ST13	Regular Monitor	21		no		no	no		
1	2019-0327	ST14	Regular Monitor	21		no		no	no		
1	2019-0327	ST16	Regular Monitor	31		no		no	no		
1	2019-0327	ST17	Regular Monitor	4.2		no		no	no		
1	2019-0327	ST18	Regular Monitor	12		no		no	no		
1	2019-0327	ST2	Regular Monitor	2.1		no		no	no		
1	2019-0327	ST20	Regular Monitor	5.3		no		no	no		
1	2019-0327	ST20	Field Blank	0.19		no		no	no		
1	2019-0327	ST21	Regular Monitor	1.6		no		no	no		
1	2019-0327	ST22	Regular Monitor	1.3		no		no	no		
1	2019-0327	ST22	Duplicate	1.3		no		no	no		
1	2019-0327	ST23	Regular Monitor	1.2		no		no	no		
1	2019-0327	ST24	Regular Monitor	3.3		no		no	no		
1	2019-0327	ST25	Regular Monitor	2.1		no		no	no		
1	2019-0327	ST26	Regular Monitor	1.6		no		no	no		
1	2019-0327	ST27	Regular Monitor	2		no		no	no		
1	2019-0327	ST27	Field Blank	0.19		no		no	no		
1	2019-0327	ST28	Regular Monitor	4.7		no		no	no		
1	2019-0327	ST31	Regular Monitor	2.1		no		no	no		
1	2019-0327	ST32	Regular Monitor	2		no		no	no		
1	2019-0327	ST33	Regular Monitor	14		no		no	no		
1	2019-0327	ST34	Regular Monitor	1		no		no	no		
1	2019-0327	ST35	Regular Monitor	1		no		no	no		
1	2019-0327	ST36	Regular Monitor	1.6		no		no	no		
1	2019-0327	ST37	Regular Monitor	1.2		no		no	no		
1	2019-0327	ST4	Regular Monitor	4		no		no	no		
1	2019-0327	ST4	Duplicate	4		no		no	no		
1	2019-0327	ST5	Regular Monitor	2.6		no		no	no		
1	2019-0327	ST6	Regular Monitor	3.5		no		no	no		
1	2019-0327	ST7	Regular Monitor	13		no		no	no		
1	2019-0327	ST8	Regular Monitor	9.5		no		no	no		
1	2019-0410	ST1	Regular Monitor	2.2		no		no	no		
1	2019-0410	ST10	Regular Monitor	1.2		no		no	no		
1	2019-0410	ST11	Regular Monitor	1.7		no		no	no		
1	2019-0410	ST12	Regular Monitor	1.3		no		no	no		
1	2019-0410	ST13	Regular Monitor	20		no		no	no		
1	2019-0410	ST14	Regular Monitor	17		no		no	no		
1	2019-0410	ST16	Regular Monitor	16		no		no	no		
1	2019-0410	ST16	Field Blank	0.19		no		no	no		
1	2019-0410	ST17	Regular Monitor	3.2		no		no	no		
1	2019-0410	ST18	Regular Monitor	3.2		no		no	no		
1	2019-0410	ST2	Regular Monitor	1.7		no		no	no		
1	2019-0410	ST20	Regular Monitor	9.7		no		no	no		
1	2019-0410	ST21	Regular Monitor	1.9		no		no	no		
1	2019-0410	ST22	Regular Monitor	1.2		no		no	no		
1	2019-0410	ST23	Regular Monitor	1.6		no		no	no		
1	2019-0410	ST24	Regular Monitor	3		no		no	no		
1	2019-0410	ST25	Regular Monitor	1.7		no		no	no		
1	2019-0410	ST25	Field Blank	0.36		no		no	no	J	
1	2019-0410	ST26	Regular Monitor	1.7		no		no	no		
1	2019-0410	ST26	Duplicate	1.8		no		no	no		
1	2019-0410	ST27	Regular Monitor	1.4		no		no	no		
1	2019-0410	ST28	Regular Monitor	3.3		no		no	no		
1	2019-0410	ST31	Regular Monitor	1.8		no		no	no		
1	2019-0410	ST31	Duplicate	1.8		no		no	no		
1	2019-0410	ST32	Regular Monitor	1.9		no		no	no		
1	2019-0410	ST33	Regular Monitor	49		no		no	no		
1	2019-0410	ST34	Regular Monitor	1.1		no		no	no		
1	2019-0410	ST35	Regular Monitor	1.2		no		no	no		
1	2019-0410	ST36	Regular Monitor	1.5		no		no	no		
1	2019-0410	ST37	Regular Monitor	1.5		no		no	no		
1	2019-0410	ST4	Regular Monitor	3.6		no		no	no		
1	2019-0410	ST5	Regular Monitor	2.4		no		no	no		
1	2019-0410	ST5	Duplicate	2.3		no		no	no		
1	2019-0410	ST6	Regular Monitor	2.7		no		no	no		
1	2019-0410	ST7	Regular Monitor	8.2		no		no	no		
1	2019-0410	ST8	Regular Monitor	9.7		no		no	no		
1	2019-0424	ST1	Regular Monitor	1.9		no		no	no		
1	2019-0424	ST1	Duplicate	1.9		no		no	no		
1	2019-0424	ST10	Regular Monitor	0.69		no		no	no		
1	2019-0424	ST11	Regular Monitor	1.4		no		no	no		
1	2019-0424	ST12	Regular Monitor	0.57		no		no	no		

1	2019-0424	ST13	Regular Monitor	3.2		no		no	no		
1	2019-0424	ST14	Regular Monitor	14		no		no	no		
1	2019-0424	ST16	Regular Monitor	16		no		no	no		
1	2019-0424	ST17	Field Blank	0.19		yes		no	no	ND	
1	2019-0424	ST17	Regular Monitor	1.7		no		no	no		
1	2019-0424	ST18	Duplicate	9.5		no		no	no		
1	2019-0424	ST18	Regular Monitor	9		no		no	no		
1	2019-0424	ST2	Regular Monitor	1.6		no		no	no		
1	2019-0424	ST20	Regular Monitor	2.3		no		no	no		
1	2019-0424	ST21	Regular Monitor	0.72		no		no	no		
1	2019-0424	ST22	Regular Monitor	0.7		no		no	no		
1	2019-0424	ST23	Duplicate	0.63		no		no	no		
1	2019-0424	ST23	Regular Monitor	0.63		no		no	no		
1	2019-0424	ST24	Field Blank	0.19		yes		no	no	ND	
1	2019-0424	ST24	Regular Monitor	1.6		no		no	no		
1	2019-0424	ST25	Regular Monitor	1.2		no		no	no		
1	2019-0424	ST26	Regular Monitor	0.96		no		no	no		
1	2019-0424	ST27	Regular Monitor	1.1		no		no	no		
1	2019-0424	ST28	Regular Monitor	4.9		no		no	no		
1	2019-0424	ST31	Regular Monitor	1.6		no		no	no		
1	2019-0424	ST32	Regular Monitor	0.71		no		no	no		
1	2019-0424	ST33	Regular Monitor	13		no		no	no		
1	2019-0424	ST34	Regular Monitor	0.69		no		no	no	FE	Sample was cancelled. Lab indicated that sample was not
1	2019-0424	ST35	Regular Monitor			yes		no	no		
1	2019-0424	ST36	Regular Monitor	1		no		no	no		
1	2019-0424	ST37	Regular Monitor	0.62		no		no	no		
1	2019-0424	ST4	Regular Monitor	3.1		no		no	no		
1	2019-0424	ST5	Regular Monitor	3		no		no	no		
1	2019-0424	ST6	Regular Monitor	2.4		no		no	no		
1	2019-0424	ST7	Regular Monitor	7.8		no		no	no		
1	2019-0424	ST8	Regular Monitor	3.7		no		no	no		
1	2019-0508	ST1	Regular Monitor	2.8		no		no	no		
1	2019-0508	ST10	Regular Monitor	0.81		no		no	no		
1	2019-0508	ST11	Duplicate	1.8		no		no	no		
1	2019-0508	ST11	Regular Monitor	1.8		no		no	no		
1	2019-0508	ST12	Duplicate	0.76		no		no	no		
1	2019-0508	ST12	Regular Monitor	0.71		no		no	no		
1	2019-0508	ST13	Regular Monitor	2.9		no		no	no		
1	2019-0508	ST14	Regular Monitor	19		no		no	no		
1	2019-0508	ST16	Regular Monitor	8		no		no	no		
1	2019-0508	ST17	Field Blank	0.19		yes		no	no	ND	
1	2019-0508	ST17	Regular Monitor	2.1		no		no	no		
1	2019-0508	ST18	Regular Monitor	190		no		no	no	J	
1	2019-0508	ST2	Duplicate	2.6		no		no	no		
1	2019-0508	ST2	Regular Monitor	2.5		no		no	no		
1	2019-0508	ST20	Regular Monitor	2.2		no		no	no		
1	2019-0508	ST21	Regular Monitor	0.88		no		no	no		
1	2019-0508	ST22	Regular Monitor	0.74		no		no	no		
1	2019-0508	ST23	Regular Monitor	0.74		no		no	no		
1	2019-0508	ST24	Regular Monitor	3		no		no	no		
1	2019-0508	ST25	Regular Monitor	1.6		no		no	no		
1	2019-0508	ST26	Regular Monitor	1.3		no		no	no		
1	2019-0508	ST27	Regular Monitor	1.8		no		no	no		
1	2019-0508	ST28	Field Blank	0.19		yes		no	no	ND	
1	2019-0508	ST28	Regular Monitor	5.7		no		no	no		
1	2019-0508	ST31	Regular Monitor	2		no		no	no		
1	2019-0508	ST32	Regular Monitor	1.1		no		no	no		
1	2019-0508	ST33	Regular Monitor	12		no		no	no		
1	2019-0508	ST34	Regular Monitor	0.79		no		no	no		
1	2019-0508	ST35	Regular Monitor	0.98		no		no	no		
1	2019-0508	ST36	Regular Monitor	1.4		no		no	no		
1	2019-0508	ST37	Regular Monitor	0.97		no		no	no		
1	2019-0508	ST4	Regular Monitor	3		no		no	no		
1	2019-0508	ST5	Regular Monitor	1.7		no		no	no		
1	2019-0508	ST6	Regular Monitor	2		no		no	no		
1	2019-0508	ST7	Regular Monitor	8.8		no		no	no		
1	2019-0508	ST8	Regular Monitor	7.9		no		no	no		
1	2019-0522	ST1	Regular Monitor	3.6		no		no	no		
1	2019-0522	ST10	Regular Monitor	0.83		no		no	no		
1	2019-0522	ST11	Regular Monitor	2		no		no	no		
1	2019-0522	ST12	Regular Monitor	0.59		no		no	no		
1	2019-0522	ST13	Regular Monitor	3.6		no		no	no		
1	2019-0522	ST14	Regular Monitor	6		no		no	no		
1	2019-0522	ST16	Regular Monitor	3		no		no	no		
1	2019-0522	ST17	Regular Monitor	3.2		no		no	no		
1	2019-0522	ST18	Regular Monitor	4.7		no		no	no		
1	2019-0522	ST2	Regular Monitor	2.3		no		no	no		
1	2019-0522	ST20	Regular Monitor	2		no		no	no		
1	2019-0522	ST21	Duplicate	0.88		no		no	no		
1	2019-0522	ST21	Regular Monitor	0.86		no		no	no		
1	2019-0522	ST22	Regular Monitor	0.84		no		no	no		
1	2019-0522	ST23	Regular Monitor	0.63		no		no	no		
1	2019-0522	ST24	Regular Monitor	2.3		no		no	no		
1	2019-0522	ST25	Regular Monitor	1.9		no		no	no		
1	2019-0522	ST26	Regular Monitor	0.67		no		no	no		
1	2019-0522	ST27	Duplicate	1.6		no		no	no		
1	2019-0522	ST27	Regular Monitor	1.6		no		no	no		
1	2019-0522	ST28	Regular Monitor	2.6		no		no	no		
1	2019-0522	ST31	Duplicate	2.4		no		no	no		
1	2019-0522	ST31	Regular Monitor	2.2		no		no	no		
1	2019-0522	ST32	Regular Monitor	0.95		no		no	no		
1	2019-0522	ST33	Regular Monitor	4.6		no		no	no		
1	2019-0522	ST34	Regular Monitor	0.73		no		no	no		
1	2019-0522	ST35	Regular Monitor	0.88		no		no	no		
1	2019-0522	ST36	Field Blank	0.19		yes		no	no	ND	
1	2019-0522	ST36	Regular Monitor	1.1		no		no	no		
1	2019-0522	ST37	Regular Monitor	0.86		no		no	no		
1	2019-0522	ST4	Regular Monitor	1.4		no		no	no		
1	2019-0522	ST5	Regular Monitor	3		no		no	no		
1	2019-0522	ST6	Field Blank	0.19		yes		no	no	ND	
1	2019-0522	ST6	Regular Monitor	1.1		no		no	no		
1	2019-0522	ST7	Regular Monitor	14		no		no	no		
1	2019-0522	ST8	Regular Monitor	14		no		no	no		
1	2019-0605	ST1	Duplicate	2.8		no		no	no		
1	2019-0605	ST1	Regular Monitor	2.7		no		no	no		
1	2019-0605	ST10	Regular Monitor	0.68		no		no	no		
1	2019-0605	ST11	Regular Monitor	1.7		no		no	no		
1	2019-0605	ST12	Regular Monitor	0.54		no		no	no		
1	2019-0605	ST13	Regular Monitor	6.8		no		no	no		
1	2019-0605	ST14	Regular Monitor	16		no		no	no		

1	2019-0605	ST14	Field Blank	0.19		yes		no	no	ND	
1	2019-0605	ST16	Regular Monitor	5.3		no		no	no		
1	2019-0605	ST17	Regular Monitor	1.6		no		no	no		
1	2019-0605	ST18	Regular Monitor	2.6		no		no	no		
1	2019-0605	ST2	Regular Monitor	1.6		no		no	no		
1	2019-0605	ST20	Regular Monitor	1.6		no		no	no		
1	2019-0605	ST21	Regular Monitor	0.65		no		no	no		
1	2019-0605	ST22	Regular Monitor	0.65		no		no	no		
1	2019-0605	ST23	Regular Monitor	0.55		no		no	no		
1	2019-0605	ST24	Regular Monitor	3.5		no		no	no		
1	2019-0605	ST25	Duplicate	1.5		no		no	no		
1	2019-0605	ST25	Regular Monitor	1.4		no		no	no		
1	2019-0605	ST26	Regular Monitor	0.88		no		no	no		
1	2019-0605	ST27	Regular Monitor	1.4		no		no	no		
1	2019-0605	ST28	Regular Monitor	3.2		no		no	no		
1	2019-0605	ST31	Regular Monitor	2		no		no	no		
1	2019-0605	ST32	Duplicate	0.8		no		no	no		
1	2019-0605	ST32	Regular Monitor	0.86		no		no	no		
1	2019-0605	ST33	Regular Monitor	42		no		no	no		
1	2019-0605	ST34	Regular Monitor	0.73		no		no	no		
1	2019-0605	ST35	Regular Monitor	0.75		no		no	no		
1	2019-0605	ST36	Regular Monitor	1		no		no	no		
1	2019-0605	ST37	Field Blank	0.19		yes		no	no	ND	
1	2019-0605	ST37	Regular Monitor	0.83		no		no	no		
1	2019-0605	ST4	Regular Monitor	2.2		no		no	no		
1	2019-0605	ST5	Regular Monitor	2.6		no		no	no		
1	2019-0605	ST6	Regular Monitor	1.5		no		no	no		
1	2019-0605	ST7	Regular Monitor	5.8		no		no	no		
1	2019-0605	ST8	Regular Monitor	6.7		no		no	no		

Date	Description

Rank	FacilityNum	FacilityNumber	Column1
1	1	1	1

Rank	PeriodID	Period
1	2019-0327	2019-0327
2	2019-0410	2019-0410
3	2019-0424	2019-0424
4	2019-0508	2019-0508
5	2019-0522	2019-0522
6	2019-0605	2019-0605

Column1
2019-0327
2019-0410
2019-0424
2019-0508
2019-0522
2019-0605

SamplerName	Column1	Rank	Sampler
ST1	ST1	1	ST1
ST1			ST10
ST10	ST10	2	ST11
ST10			ST12
ST11	ST11	3	ST13
ST11			ST14
ST12	ST12	4	ST16
ST12			ST17
ST13	ST13	5	ST18
ST14	ST14	6	ST2
ST14			ST20
ST16	ST16	7	ST21
ST16			ST22
ST17	ST17	8	ST23
ST17			ST24
ST18	ST18	9	ST25
ST18			ST26
ST2	ST2	10	ST27
ST2			ST28
ST20	ST20	11	ST31
ST20			ST32
ST21	ST21	12	ST33
ST21			ST34
ST22	ST22	13	ST35
ST22			ST36
ST23	ST23	14	ST37
ST23			ST4
ST24	ST24	15	ST5
ST24			ST6
ST25	ST25	16	ST7
ST25			ST8
ST25			
ST26	ST26	17	
ST26			
ST27	ST27	18	
ST27			

	ST27		
	ST28	ST28	19
	ST28		
	ST31	ST31	20
	ST31		
	ST32	ST32	21
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	ST33	ST33	22
	ST34	ST34	23
	ST35	ST35	24
	ST36	ST36	25
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	ST37	ST37	26
	ST37		
	ST4	ST4	27
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	ST6	ST6	29
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	ST7	ST7	30
	ST8	ST8	31

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States
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KS
KY
LA
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MD
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MI
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NH
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NM

SamplerType
Regular Monitor
Extra Monitor
Duplicate
Field Blank
Inactive

NV
NY
OH
OK
OR
PA
PR
RI
SC
SD
TN
TX
UT
VA
VI
VT
WA
WI
WV
WY