2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

EPA CCR RULE COMPLIANCE

DOMINION ENERGY SOUTH CAROLINA:
Williams Station: Class Three Landfill

January 2021

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EXECUTIVE SUMMARY

This document presents the *2020 Annual Groundwater Monitoring and Corrective Action* report for the Class 3 landfill at Dominion Energy South Carolina (DESC) Williams Station Highway 52 Class 3 Landfill in Goose Creek, Berkeley County, South Carolina in accordance with 40 CFR Part 257.90 (e). The Class 3 landfill is a coal combustion residuals (CCR) existing landfill as defined by the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Part 257.53). Pursuant to the CCR Rule (40 CFR Part 257.50 *et. seq.*), DESC is required to complete an *Annual Groundwater Monitoring and Corrective Action Report* by January 31st annually.

This report documents the status of the groundwater monitoring program for the Class 3 landfill, summarizes key activities completed during 2020 and any issues encountered, actions taken to resolve any identified issues, and lists key activities to be completed in 2021. The following is a summary of the current status of groundwater monitoring and corrective action for the Class 3 landfill.

1. At the start and end of the current annual reporting period (2020), the Class 3 landfill was operating under the Detection Monitoring program under 40 CFR Part 257.94.
2. Detection monitoring was conducted at the site in March and September 2020 pursuant to 40 CFR Part 257.94.
3. Confirmation monitoring was conducted in May and October 2020 to confirm the March and September 2020 Detection Monitoring results, respectively, and to supplement the site water quality database for statistical analysis.
4. Based on the 2020 Detection Monitoring and supplemental monitoring results, statistically significant increases (SSIs) over background concentrations were indicated in groundwater at the following wells for the listed Appendix III constituents:

Sample Location	Parameters Presenting SSIs
MW-LF-20	Boron, Calcium, Total Dissolved Solids
MW-LF-21	Boron, Calcium, Total Dissolved Solids
MW-LF-22D	Boron, Sulfate, Total Dissolved Solids
MW-LF-23D	Boron, Sulfate, Total Dissolved Solids
MW-LF-24	Calcium, Total Dissolved Solids
MW-LF-25	Calcium, Fluoride, Sulfate, Total Dissolved Solids
MW-LF-26	Calcium, Chloride, Sulfate, Total Dissolved Solids

5. Pursuant to 40 CFR Part 257.94 (e)(2), DESC conducted an Alternate Source Demonstration (ASD) for the SSIs identified for the Appendix III constituents in groundwater relative to background concentrations based on the March 2020 Detection Monitoring and May 2020 supplemental monitoring events. The results of the ASD are presented in the September 2020 *Alternate Source Demonstration Report, Williams Station Class 3 Landfill*.
6. The results of the ASD support the position that the SSIs for boron, calcium, chloride, fluoride, sulfate and TDS in groundwater evident from statistical analysis of groundwater quality data collected during the March 2020 Detection Monitoring and May 2020 supplemental monitoring events are not due to a release from the Class 3 landfill at the site.
7. In 2021, an ASD and report of results will be conducted based on the results of the September 2020 Detection Monitoring event and supplemental monitoring conducted in October 2020. The ASD report will be completed and the report of results included in the plant operating record by April 17, 2021. It is anticipated that the results of the ASD based on the September 2020 Detection Monitoring data will be similar to those based on the previous ASDs. Consequently, it is anticipated that Detection Monitoring will continue in 2021. Two rounds of detection monitoring are anticipated to be completed during March and September 2021.

1.0 INTRODUCTION

This document presents the *2020 Annual Groundwater Monitoring and Corrective Action* report for the Class 3 landfill at Dominion Energy South Carolina (DESC) Williams Station Highway 52 Class 3 Landfill in Goose Creek, Berkeley County, South Carolina in accordance with 40 CFR Part 257.90 (e). The Class 3 landfill is a coal combustion residuals (CCR) existing landfill as defined by the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Part 257.53).

This report presents the following information as required under 40 CFR Part 257.90 (e):

1. A facility map (aerial image) showing the Class 3 landfill and all background (or upgradient) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring program for the landfill;
2. In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;
3. A narrative discussion of transitions between monitoring programs (*e.g.,* the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and
4. Other information required to be included in the annual report as specified in Parts 257.90 through 257.98 of the CCR Rule.

The following sections present the components of the annual report.

2.0 GROUNDWATER MONITORING WELL SYSTEM

Eleven Type II groundwater monitoring wells (designated MW-LF-20 through MW-LF-28, MW-LF-22D and MW-LF-23D) were installed at Williams Station Highway 52 Class Three Landfill in March, April and November 2016 to serve as EPA CCR Rule Compliance monitoring wells. Seven of the Type II groundwater monitoring wells (MW-LF-20 through MW-LF-26) were initially installed at the site in March 2016. Subsequent groundwater gauging indicated that the volume of groundwater in wells MW-LF-22 and MW-LF-23 was insufficient to allow for collection of representative groundwater samples from the wells. Consequently, replacement wells were installed to greater depths immediately adjacent to MW-LF-22 and MW-LF-23 in April 2016 to penetrate deeper into the surficial aquifer and allow for collection of representative groundwater samples at those locations. The replacement wells are designated MW-LF-22D and MW-LF-23D, respectively. Monitoring wells MW-LF-22 and MW-LF-23 are only used for groundwater elevation measurements. Two additional background monitoring wells, designated MW-LF-27 and MW-LF-28, were installed at the site in November 2016 at locations hydraulically up gradient of the landfill. A site location map is presented as **Figure 1** and a site map showing the locations and designations of the monitoring wells at Williams Station Highway 52 Landfill is presented as **Figure 2**.

The Type II groundwater monitoring wells were installed to monitor groundwater quality in the vicinity of the Class Three Landfill in compliance with the groundwater monitoring requirements of the US EPA CCR Rule (40 CFR Part 257.93). In addition, existing monitoring wells MW-LF-10 and MW-LF-11 are included as part of the monitoring well network for US EPA CCR Rule groundwater monitoring. The locations and designations of the monitoring wells are shown in **Figure 2**. Existing monitoring wells MW-LF-10 and MW-LF-11, as well as new monitoring wells MW-LF-27 and MW-LF-28, serve as up-gradient wells to monitor the quality of background groundwater in the surficial aquifer entering the area of the Class Three Landfill. The remaining monitoring wells (MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25 and MW-LF-26) serve as down gradient wells to monitor the quality of groundwater down gradient of the Class Three Landfill.

3.0 GROUNDWATER MONITORING

3.1 Groundwater Sampling

In accordance with 40 CFR Part 257.94, the sixth round of Detection Monitoring was conducted in March 2020 and included groundwater sampling from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D. MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28. One groundwater sample was collected from each of the monitoring wells during the Detection Monitoring event. All groundwater samples collected from the monitoring wells for Detection Monitoring during the March 2020 Detection Monitoring event were analyzed by a South Carolina Certified laboratory (DESC Central Laboratory (Certification Number 32006)) for the constituents listed in Appendix III of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107). In addition, a sample of landfill leachate was collected for laboratory analysis in March 2020 and analyzed by a South Carolina Certified laboratory (DESC Central Laboratory for all the constituents listed in Appendix III and Appendix IV of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107), except Radium 226/228, as well as for total alkalinity, iron, magnesium, potassium and sodium.

Based on the results of the March 2020 Detection Monitoring results, groundwater was resampled for field and laboratory analysis from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D. MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28 in May 2020 to confirm the March 2020 laboratory analytical results and supplement the site water quality database for statistical analysis. All groundwater samples collected during the May 2020 resampling event were analyzed by a South Carolina Certified laboratory (DESC Central Laboratory) for boron, calcium, chloride, fluoride, sulfate, TDS, total alkalinity, magnesium, potassium and sodium.

In accordance with 40 CFR Part 257.94, the seventh round of Detection Monitoring was conducted in September 2020 and included groundwater sampling from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D. MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28. One groundwater sample was collected from each of the monitoring wells during the Detection Monitoring event. All groundwater samples collected from the monitoring wells for Detection Monitoring during the September 2020 Detection Monitoring event were analyzed by a South Carolina Certified laboratory (DESC Central Laboratory (Certification Number 32006)) for the constituents listed in Appendix III of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107). In addition, a sample of landfill leachate was collected for laboratory analysis in September 2020 and analyzed by a South Carolina Certified laboratory

(DESC Central Laboratory for all the constituents listed in Appendix III and Appendix IV of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107), except Radium 226/228, as well as for total alkalinity, iron, magnesium, potassium and sodium.

Based on the results of the September 2020 Detection Monitoring results, groundwater was resampled for field and laboratory analysis from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D. MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28 in October 2020 to confirm the September 2020 laboratory analytical results and supplement the site water quality database for statistical analysis. All groundwater samples collected during the October 2020 resampling event were analyzed by a South Carolina Certified laboratory (DESC Central Laboratory). The groundwater samples collected from the monitoring wells were analyzed for various combinations of boron, calcium, chloride, fluoride, sulfate and TDS, as well as iron, magnesium, pH, potassium sodium and total alkalinity, with the samples from background monitoring wells MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28 being analyzed for all of these constituents.

3.2 Results of Field and Laboratory Analyses of Groundwater Samples

The results of the field and laboratory analyses of the groundwater samples collected from the monitoring wells since May 2016 are presented in **Table** 1, and copies of laboratory data sheets for the groundwater samples collected during the Detection Monitoring event conducted in September 2020, as well as the supplemental monitoring conducted in October 2020, are presented in **Appendix A**. The results of the field and laboratory analyses of the groundwater samples collected from the monitoring wells and leachate collected from the landfill during the Detection Monitoring event conducted in March 2020, as well as the supplemental monitoring conducted in May 2020, are presented in the Alternate Source Demonstration Report included in **Appendix C** (see Section **3.3**).

Statistical analysis to compare the groundwater quality in the downgradient monitoring wells to that of background water quality for the March 2020 Detection Monitoring event was completed by DESC on August 13, 2020. The results of the statistical analysis are presented in **Appendix B**. The results of the statistical analysis indicate that the concentrations of the constituents listed in the following table show statistically significant increases (SSIs) over background concentrations in the groundwater samples indicated.

Sample Location	Parameters Presenting SSIs
MW-LF-20	Boron, Calcium, Total Dissolved Solids
MW-LF-21	Boron, Calcium, Total Dissolved Solids
MW-LF-22D	Boron, Sulfate, Total Dissolved Solids
MW-LF-23D	Boron, Sulfate, Total Dissolved Solids
MW-LF-24	Calcium, Total Dissolved Solids
MW-LF-25	Calcium, Fluoride, Sulfate, Total Dissolved Solids
MW-LF-26	Calcium, Chloride, Sulfate, Total Dissolved Solids

No other statistically significant increases over background concentrations were observed for the CCR Rule Appendix III constituents in the groundwater samples collected from the monitoring wells during the March 2020 Detection Monitoring event.

Statistical analysis to compare the groundwater quality in the downgradient monitoring wells to that of background water quality for the September 2020 Detection Monitoring event was completed by DESC on November 25, 2020. The results of the statistical analysis are presented in **Appendix B**. The results of the statistical analysis indicate that the concentrations of the constituents listed in the following table show statistically significant increases (SSIs) over background concentrations in the groundwater samples indicated.

Sample Location	Parameters Presenting SSIs
MW-LF-20	Total Dissolved Solids
MW-LF-21	Total Dissolved Solids
MW-LF-22D	Sulfate, Total Dissolved Solids
MW-LF-23D	Sulfate, Total Dissolved Solids
MW-LF-24	Total Dissolved Solids
MW-LF-25	Fluoride, Sulfate, Total Dissolved Solids
MW-LF-26	Sulfate, Total Dissolved Solids

No other statistically significant increases over background concentrations were observed for the CCR Rule Appendix III constituents in the groundwater samples collected from the monitoring wells during the September 2020 Detection Monitoring event.

3.3 Alternate Source Demonstration

The results of the statistical analysis of data from the Detection Monitoring event conducted in March 2020 indicated that the concentrations of boron, calcium, chloride, fluoride, sulfate and TDS in groundwater at various compliance monitoring wells showed statistically significant increases over background concentrations. Consequently, pursuant to 40 CFR Part 257.94 (e)(2), DESC conducted an Alternate Source Demonstration (ASD) for the statistically significant increases in those constituents relative to background concentrations. The results of the ASD are presented in the September 2020 *Alternate Source Demonstration Report, Williams Station Class 3 Landfill*, a copy of which is provided in **Appendix C**. The results of the ASD support the position that the SSIs for boron, calcium, chloride, fluoride, sulfate and TDS in groundwater evident from statistical analysis of groundwater quality data collected during the March 2020 Detection Monitoring event are not due to a release from the Class 3 landfill at the site. Therefore, no further action was warranted and the Class 3 landfill remains in detection monitoring.

4.0 KEY PROJECT ACTIVITIES FOR 2021

In 2021, an ASD and report of results will be conducted based on the results of the September 2020 Detection Monitoring event and supplemental monitoring conducted in October 2020. The ASD report will be completed and the report of results included in the plant operating record by April 17, 2021. It is anticipated that the results of the ASD based on the September 2020 Detection Monitoring data will be similar to those based on the previous ASDs. Consequently, it is anticipated that Detection Monitoring will continue in 2021. Two rounds of detection monitoring are anticipated to be completed during March and September 2021 with groundwater samples being collected from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28.

N

Source: USGS 7.5' Topographic Quadrangle Series
Moncks Corner, SC 2014 and Mount Holly, SC 2014

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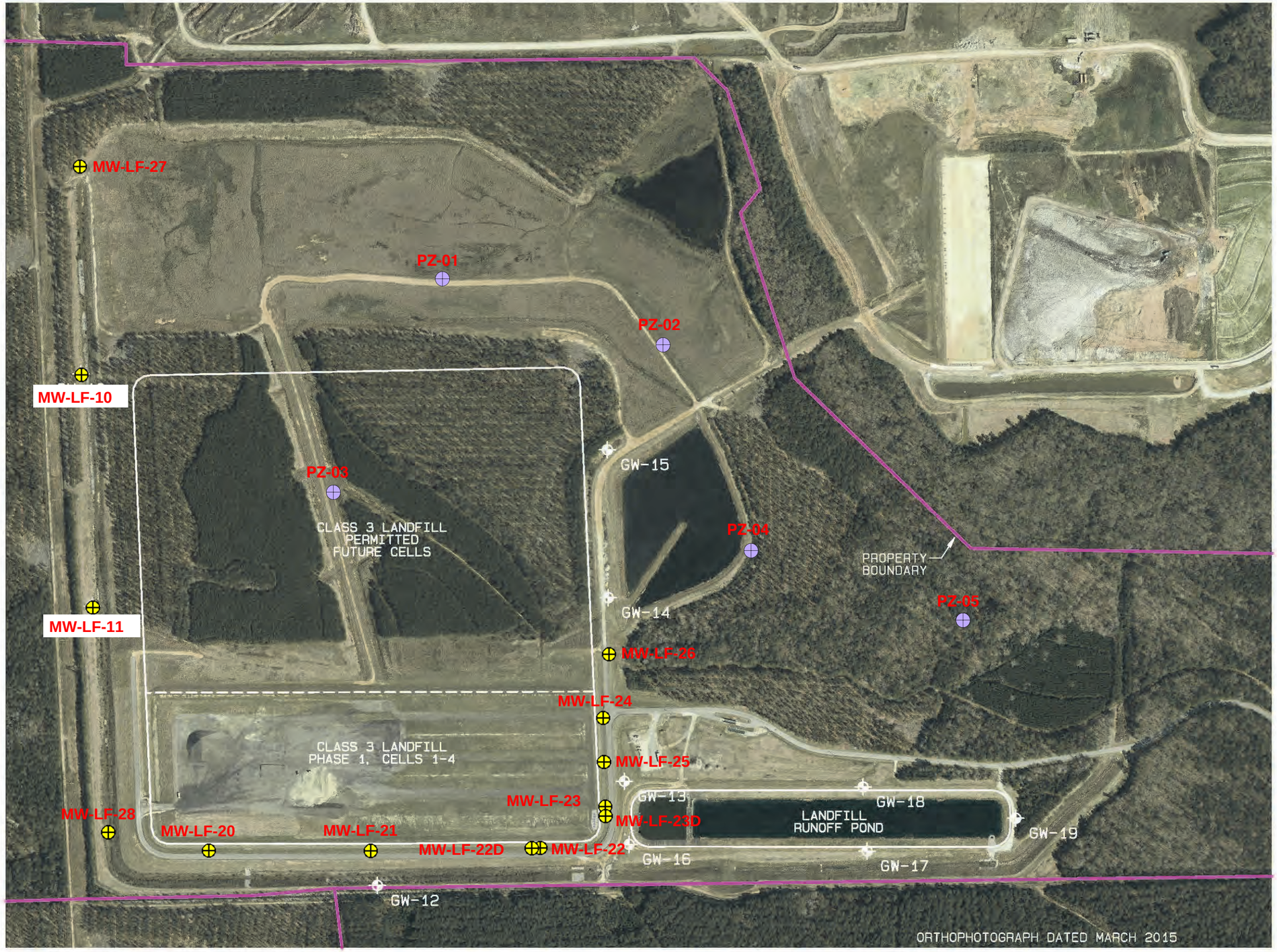
SITE LOCATION MAP

DESC Williams Station Highway 52 Class 3 ISW Landfill
Goose Creek, Berkeley County, South Carolina

Drawn by:	Reviewed by:	Project #:	Drawing #:	Figure No.
USGS		Scale: 1:24,000	Drawing Date: 8/01/2016	1



GW-10 GROUNDWATER MONITORING WELL

GW-20 **CCR Rule Compliance Groundwater Monitoring Well**

PZ-01 **Piezometer**

-N-

GRAPHIC SCALE 1"=500'

0 500 1000

C:\Users\bpray\Desktop\Hwy 52\HWY 52 LF - WELLS.pro Wed Oct 28, 2015 3:17:28PM

REVISION	DATE
1)	
2)	
3)	
4)	

Nautilus Geologic Consulting, PLLC

WILLIAMS STATION HIGHWAY 52 CLASS THREE LANDFILL

CCR Rule Compliance Groundwater Monitoring Wells

JOB NUMBER

SHEET **2**

TABLE 1
RESULTS OF FIELD AND LABORATORY ANALYSES OF GROUNDWATER, SURFACE WATER AND LEACHATE SAMPLES
EPA CCR RULE BACKGROUND AND COMPLIANCE GROUNDWATER MONITORING WELLS
Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

	Groundwater Monitoring Indicator Parameters						40 CFR Part 257 Appendix III Detection Monitoring Parameters								40 CFR Part 257 Appendix IV Assessment Monitoring Constituents															
	Groundwater Elevation ft	ORP mV	DO mg/L	Specific conductance u mhos/cm	Temperature degrees C	Turbidity NTU 10	pH (lab) S.U.	pH (field) S.U.	Boron ug/L BG	Calcium ug/L BG	Chloride mg/L BG	Fluoride mg/L 4 mg/L	Sulfate mg/L BG	TDS mg/L BG	Antimony ug/L 6 ug/L	Arsenic ug/L 10 ug/L	Barium ug/L 2000 ug/L	Beryllium ug/L 4 ug/L	Cadmium ug/L 5 ug/L	Chromium ug/L 100 ug/L	Cobalt ug/L BG	Lead ug/L 15 ug/L	Lithium ug/L BG	Mercury ug/L 2 ug/L	Molybdenum ug/L BG	Radium 226 pCi/L 5 pCi/L	Radium 228 pCi/L 5 pCi/L	Radium 226 + 228 pCi/L 5 pCi/L	Selenium ug/L 50 ug/L	Thallium ug/L 2 ug/L
Williams 52 Landfill																													
MW-LF-10																													
5/11/16	43.58	-2	1.8	537	19.5	0.69	7.17	7.1	<1,000	58,600	15.8	0.541	3.31	270	<1.00	<1.00	15.7	<1.00	<1.00	<1.00	<1.00	<1.00	12.2	<1.00	2.2	1.37	0.666	2.036	<5.00	<1.00
7/13/16	43.56	-56.7	1.21	435	23.9	9.66	6.9	7	<1,000	48,800	15.6	0.634	3.4	234	<1.00	1.2	18	<1.00	<1.00	<1.00	<1.00	<1.00	8.4	<0.2	1.7	2.78	0.811	3.591	<5.00	<1.00
9/13/16	43.14	55	3.16	147	24	4.61		6.8	<1,000	21,600	6.37	0.119	7.57	149	<1.00	1.5	26.4	<2.00	<1.00	2	<1.00	1.1	5.04	<0.2	1	<0.193	<1.72	<1.913	<5.00	<1.00
11/17/16	43.32	134.2	2.41	281	22.8	5.04	6.84	6.9	<1,000	30,480	10.7	0.33	4.12	174	<1.00	2.9	23.3	<2.00	<1.00	1	<1.00	1	4.16	<0.2	1.1	<0.53	<2.15	<2.68	<5.00	<1.00
1/19/17	44.85	41.7	0.98	361	18.2	6.43	10.36	10.5	<1,000	14,830	17.1	0.534	9.54	204	<1.00	2.5	54.3	<2.00	<1.00	<1.00	<1.00	<1.00	21.3	<0.2	4.7	<0.237	<1.94	<2.177	<5.00	<1.00
3/27/17	44.04	130.1	0.8	367	19.1	7.27	7.14	7.4	<1,000	38,600	17.15	0.442	5.4	27	<1.00	1.3	39.7	<2.00	<1.00	<1.00	<1.00	<1.00	11.8	<0.2	1.9	0.944	<0.487	0.944	<5.00	<1.00
5/25/17	44.33	-85	1.01	506	20	7.36	7.07	7.4	<1,000	32,340	16.42	0.368	4.95	241	<1.00	1.2	128	<2.00	<1.00	3.9	1.2	<1.00	39.8	<0.2	2.7	0.63	<1.29	0.63	<5.00	<1.00
7/25/17	45.00	-18	0.4	493	22.2	5.66	11.31	7.7	<1,000	41,510	19.45	0.515	5.51	196	<1.00	1	190	<2.00	<1.00	1.8	<1.00	<1.00	34.5	<0.2	3.7	<0.424	<1.46	<1.884	<5.00	<1.00
9/20/17	45.34	-69.7	0.48	379	23.9	6.03	10.8	8.4	<1,000	29,490	19.7	0.545	6	167																
3/13/18	44.17	4	0.82	459	17.6	6.17	7.99	8	86.3 J	56,920	19	0.42	5.92	263																
9/19/18	44.03	-52.2	1.43	703	24.2	7.13	8.46	7.4	38.1	54,300	27.9	0.46	8.23	187																
11/28/18	44.14	27.9	1.47	554	20.5	6.41		7.3	52.5	53,900	25	0.422	8.64	297																
3/18/19	44.25	101	1.12	576	17.7	7.23	7.38	7.1	67.6	63,400	26.7	0.46	7.19	334									9.8							
5/20/19	43.49	94.5	0.57	675	20.1	6.23	7.12	7	65.9		27.5		6.92	343																
9/17/19	44.35	29.1	0.29	681	24	6.86	7.31	6.7	56.80 J	81,200	28.6	0.43	9.64	373									9.7							
3/12/20	45.18	67.4	1.75	571	17.9	6.13	7.32	7	122 J	78,600	27.5	0.43	7.13	382									12.9							
5/12/20	44.40	46	1.06	649	17.9	7.53	7.34	7	<38.458	90,700	27.5	0.42	7.14	368																
9/15/20	44.60	22.8	0.82	645	23.1	5.76	7.24	6.8	<500	71,200	25.6	0.46	7.27	389									12.1							
10/28/20	45.11	8.7	0.55	637	22.3	6.62	7.51	6.8	<500	69,900	25	0.46	7.28	377																
MW-LF-11																														
11/17/16	40.23	199.3	0.67	167	23.3	3.2	6.62	6.3	<1,000	18,340	5.68	0.407	1.73	94	<1.00	1.2	<10	<2.00	<1.00	<1.00	<1.00	<1.00	4.33	<0.2	<1.00	1.69	<1.13	1.69	<5.00	<1.00
1/19/17	41.04	85.7	3.24	137	19.2	9.15	6.58	6.4	<1,000	15,600	3.04	0.337	5.13	89	<1.00	1.4	<10	<2.00	<1.00	4.5	<1.00	<1.00	3.85	<0.2	<1.00	1.16	<1.72	1.16	<5.00	<1.00
3/27/17	40.47	188	1.57	136	20.2	9.26	6.46	6.4	<1,000	16,600	5.04	0.31	1.45	101	<1.00	<1.00	<10	<2.00	<1.00	1.4	<1.00	<1.00	3.48	<0.2	<1.00	5.5	<0.528	5.5	<5.00	<1.00
5/25/17	40.62	-7.5	1.28	250	20.6	7.28	7	7	<1,000	19,320	5.16	0.336	1.34	98	<1.00	<1.00	<10	<2.00	<1.00	1	<1.00	<1.00	4	<0.2	<1.00	0.435	<1.01	0.435	<5.00	<1.00
7/25/17	41.05	-1.9	0.45	317	22.8	5.16	6.6	7.1	<1,000	20,050	5.99	0.324	1.47	105	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	4.51	<0.2	<1.00	4.55	<0.86	4.55	<5.00	<1.00
9/20/17	41.38	78.2	0.6	291	24.7	6.58	6.79	6.7	<1,000	20,180	6.1	0.368	1.8	110																
3/13/18	40.59	59.2	1.17	150	17.5	5.76	6.53	6.3	<1,000	16,260	5.84	0.25	1.77	98																
9/19/18	40.83	55.6	0.34	365	24.7	7.57	6.6	6.4	<21.9	19,500	6.59	0.35	1.44	108																
11/28/18	40.99	90.9	1.21	164	21.4	5.82		6.2	25.3	14,600	5.13	0.284	2.2	70																
3/18/19	40.65	194	1.07	153	17.7	7.69	6.52	6.2	<38.458	14,700	5.58	0.28	1.85	71									3.2							
5/20/19	39.94	151	0.65	188	19.2	5.56	6.51	6.4	<38.458		5.95		1.41	89																
9/17/19	40.68	146	0.55	294	23.8	6.2	6.81	6.6	54.20 J	23,000	5.96	0.36	2.06	108									4							
3/12/20	41.04	168	3.08	132	17.9	6.92	6.38	6	43.70 J	13,300	4.3	0.2	3.54	93									2.76							
5/12/20	40.15	93	1.13	234	18.4	7.59	6.72	6.5	<38.458	25,300	6.54	0.34	1.47	97																
9/15/20	40.62	75.2	0.72	211	23.6	5.79	6.59	6.2	<500	18,800	7.23	0.34	1.24	126									4.16							
10/28/20	41.08	98.5	0.49	185	23.1	5.86	6.81	6	<500	16,800	15	0.67	3.08	109																
MW-LF-20																														
5/11/16	38.90	14.8	3.91	909	23.3	1.2	6.87	6.7	<1,000	122,000	7.81	0.127	35.67	510	<1.00	1.7	52.8	<1.00	<1.00	<1.00	1.5	<1.00	3.47	<1.00	2.9	0.383	0.781	1.164	<5.00	<1.00
7/13/16	39.29	-1.8	0.25	889	23.4	20.7	6.84	6.1	<1,000	169,000	9	0.137	22.8	648	<1.00	4.5	53.7	<1.00	<1.00	<1.00	3.2	<1.00	3.75	<0.2	1.8	7.08	0.638	7.718	<5.00	<1.00
9/13/16	39.94	-10	1.99	1100	23.8	9.67		6.5	<1,000	173,000	8.92	0.193	15.8	668	<1.00	6.8	55.7	<2.00	<1.00	<1.00	2.6	<1.00	4.08	<0.2	1.8	<0.366	<1.77	<2.136	<5.00	<1.00
11/16/16	40.21	-3.1	1.36	1100	23	4.64	6.83	6.6	<1,000	149,400	9.44	0.231	16.7	646	<1.00	3.8	52.1	<2.00	<1.00	<1.00	1.8	<1.00	5.51	<0.2	1.5	<0.28	<1.67	<1.95	<5.00	<1.00
1/19/17	39.47	-26.3	0.89	1090	21.5	4.95	6.75	6.6	<1,000	154,000	10.2	0.285	12.1	624	<1.00	5.2	47.6	<2.00	<1.00	<1.00	1.9	<1.00	5.19	<0.2	1.4	<5.9	<2.13	<8.03	<5.00	<1.00
3/27/17	39.09	103.3	0.54	912	22.8	5.47	6.73	6.5	<1,000	157,000	10.05	0.239	10.3	644	<1.00	4	54.1	<2.00	<1.00	<1.00	1.3	<1.00	5.04	<0.2	1.1	0.566	<0.551	0.566	<5.00	<1.00
5/23/17	39.25	5.6	0.73	1065	22.1	9.56	6.82	6.3	<1,000	158,900	9.06	0.182	9.91	619	<1.00	4.2	54	<2.00	<1.00	<1.00	1.4	<1.00	5.86	<0.2	1.1	<0.387	<1.38	<1.767	<5.00	<1.00
7/25/17	39.91	-6.1	0.45	1077	22.1	5.79	6.78	6.5	<1,000	155,700	9.7	0.175	9.24	663	<1.00	4.6	54.6	<2.00	<1.00	<1.00	1.4	<1.00	6.99	<0.2	<1.00	<0.581	<1.01	<1.591	<5.00	<1.00
9/20/17	40.60	-6.2	0.56	1100	23.4	5.4	6.86	6.5	<1,000	148,900	9.8	0.264	9.1	631																
3/13/18	39.52	49.5	0.28	958	19.9	9.14	7.05	6.6	212 J	142,900	8.32	0.21	10.8	609																
9/19/18	40.55	-10.9	0.31	1331	23.9	9.47	6.86	6.6	204	142,000	10	0.21	7.41	634																
11/28/18	40.60	32.3	0.47	1066	21	6.8		6.5	199	123,000	10.3	0.185	6.81	591																
3/18/19	39.43	57.7	0.42	1014	21	9.95	7.07	6.6	188	134,000	11	0.25	8.67	603									6.1							
5/21/19	39.50	46.9	0.39	1064	21.8	13.7		6.7						712																
9/17/19	40.59	-24.7	0.28	1032	23.8	6.42	6.99	6.4	216	135,000	10.7	0.22	7.05	604									8.1							
3/11/20	39.63	8.7	0.52	1057	22.2	9.82	6.91	6.6	242	157,000	11.6	0.24	7.66	671									8.4							
5/12/20	39.40	48.4	1.84	1036	20.6	9.87	7.01	6.6	228	165,000	11.34	0.22	7.43	626																
9/15/20	40.46	-21.4	1.15	1044	23.7	6.53	6.83	6.3	181	158,000	11.3	0.23	6.44	635									8.88							
10/28/20	40.63	-22.4	0.71	1042	23.4	6.35		6.3		136,000				678																
MW-LF-21																														
5/11/16	37.17	19.7	3.28	804	22.3	2.04	7.115	7	<1,000	89,100	7.86	0.1555	30.35	478.5	<1.00	<1.00	32.45	<1.00	<1.00	<1.00	<1.00	<1.00	2.465	<0.6	3.25	0.437	0.944	1.381	<5.00	<1.00
7/13/16	38.86	18	0.18	793	24.1	15.6	6.74	6.4	<1,000	111,000	9.2	0.136	17.9	545	<1.00	2.1	27.2	<1.00	<1.00	<1.00	2	<1.00	4.69	<0.2	1.8	1.24	0.422	1.662	<5.00	<1.00
9/13/16	40.48	-7	1.01	1030	26.7	5.64		6.7	<1,000	139,000	10	0.176	12.7	646	<1.00	4	36.6	<2.00	<1.00	<1.00	2.4	<1.00	5.85	<0.2	1.6	0.679	<2.72	0.679	<5.00	<1.00
11/16/16	40.83	-3.1	0.57	1081	23.3	4.1	6.78	6.6	<1,000	129,000	10.1	0.233	10.4	710	<1.00	2.1	34.7	<2.00	<1.00	<1.00	1.2	<1.00	6.04	<0.2	<1.00	<0.778	<1.98	<2.758	<5.00	<1.00
1/19/17	39.33	36.1	0.63	1050	21.8	9.39	6.82	6.7	<1,000	128,600	11	0.288	9.78	590	<1.00	3	33.5	<2.00	<1.00	<1.00	2.1	<1.00	6.05	<0.2	1.3	<0.261	<1.99	<2.251	<5.00	<1.00
3/28/17	38.19	73.7	0.44	835	20.1	9.18	6.94	6.7	<1,000	130,000	10.76	0.243	8.42	613	<1.00	2.3	33.2	<2.00	<1.00	<1.00	2.1	<1.00	5.26	<0.2	1.1	0.47	<1.12	0.47	<5.00	<1.00
5/23/17	38.44	0.9	0.77	1026	21.5	6.47	6.86	6.5	<1,000	130,800	9.91	0.172	9.35	575	<1.00	2.8	34.5	<2.00	<1.00	<1.00	1.2	<1.00	6.06	<0.2	1.1	0.326	<1.45	0.326	<5.00	<1.00
7/25/17	39.81	10.9	0.47	1035	22.4	6.31	6.6	6.86	<1,000	127,300	10.1	0.161	8.37	621	<1.00	2.5	31.9	<2.00	<1.00	<1.00	<1.00	<1.00	7.26	<0.2	<1.00	<0.528	<1.15	1.678	<5.00	<1.00
9/20/17	40.94	17.3	0.38	1065	24.4	5.22	6.95	6.5	<1,000	125,800	10.36	0.258	8.7	594																
3/13/18	38.22	133	0.46	1016	18.2	7.28	7	6.6	195 J	122,400	11.3	0.21	8.27	575																
9/19/18	41.72	-0.5	0.87	1312	23.8	8.59	6.97	6.6	192	120,000	10.4	0.22	7.32	911																
11/29/18	42.02	72.1	0.41	1057	20	7.03		6.6	238	127,000	10.9	0.385	8.38	611																
3/18/19	39.82	109	0.26	994	20.6	9.21	7.1	6.7	182	116,000	11.3	0.26	9.68	638									5.6							
5/21/19	40.31	-25	0.34	1047	22.1	9.63		6.7						584																
9/18/19	43.23	-23.4	0.33	1001	23.4	5.93	7.04	6.5	221	121,000	10.3	0.23	7.42	628									7.9							
3/11/20	40.37	33	0.6	1013	21.6	7.83	7	6.6	233	132,000	11	0.24	8.13	643									7.79							
5/13/20	40.13	-7.8	1.58	1011	20.1	9.32	7.06	6.6	212	140,000	11	0.23	7.88	615																
9/15/20	42.52	-31.4	1.65	1014	24.1	6.25	6.94	6.5	160	123,000	10.7	0.24	6.44	654									8.16							
10/28/20	42.77	-30.9	0.55	1027	24	6.46		6.4		122,000				646																

TABLE 1
RESULTS OF FIELD AND LABORATORY ANALYSES OF GROUNDWATER, SURFACE WATER AND LEACHATE SAMPLES
EPA CCR RULE BACKGROUND AND COMPLIANCE GROUNDWATER MONITORING WELLS
Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

	Groundwater Monitoring Indicator Parameters						40 CFR Part 257 Appendix III Detection Monitoring Parameters								40 CFR Part 257 Appendix IV Assessment Monitoring Constituents															
	Groundwater Elevation ft	ORP mV	DO mg/L	Specific conductance u mhos/cm	Temperature degrees C	Turbidity NTU 10	pH (lab) S.U.	pH (field) S.U.	Boron ug/L BG	Calcium ug/L BG	Chloride mg/L BG	Fluoride mg/L 4 mg/L	Sulfate mg/L BG	TDS mg/L BG	Antimony ug/L 6 ug/L	Arsenic ug/L 10 ug/L	Barium ug/L 2000 ug/L	Beryllium ug/L 4 ug/L	Cadmium ug/L 5 ug/L	Chromium ug/L 100 ug/L	Cobalt ug/L BG	Lead ug/L 15 ug/L	Lithium ug/L BG	Mercury ug/L 2 ug/L	Molybdenum ug/L BG	Radium 226 pCi/L 5 pCi/L	Radium 228 pCi/L 5 pCi/L	Radium 226 + 228 pCi/L 5 pCi/L	Selenium ug/L 50 ug/L	Thallium ug/L 2 ug/L
MW-LF-22																														
5/11/16	28.75																													
7/13/16	34.00																													
9/13/16	36.55																													
11/16/16	36.13																													
1/19/17	34.28																													
3/28/17	32.90																													
5/24/17	33.04																													
7/25/17	34.79																													
9/21/17	36.74																													
3/13/18	33.00																													
9/20/18	37.00																													
3/18/19	33.55																													
5/21/19	33.72																													
9/18/19	37.36																													
3/11/20	33.96																													
9/15/20	37.47																													
MW-LF-22D																														
5/11/16	24.32	-10.2	9.87	74.2	24.7	1.1	7.36	7.3	<1,000	85,200	11.2	0.304	135	476	<1.00	2.3	15.8	<1.00	<1.00	5.9	<1.00	<1.00	5.78	<0.2	37	1.49	0.544	2.034	<5.00	<1.00
7/13/16	34.77	-34.5	0.3	918	29.6	13	7.2	6.9	<1,000	97,800	10.1	0.219	119	622	<1.00	3.1	10.6	<1.00	<1.00	<1.00	<1.00	<1.00	6.23	<0.2	15.7	1.07	1.81	2.88	<5.00	<1.00
9/13/16	36.53	-21	0.98	917	27.2	9.73		7	<1,000	96,800	9.96	0.274	79.4	602	<1.00	4.7	<10	<2.00	<1.00	<1.00	<1.00	<1.00	8.78	<0.2	12.2	0.826	<2.98	0.826	<5.00	<1.00
11/16/16	36.25	23.6	0.5	954	23.1	4.09	7.13	7	<1,000	85,320	9.75	0.311	65.7	529	<1.00	4.6	<10	<2.00	<1.00	<1.00	<1.00	<1.00	10.2	<0.2	9.1	0.324	2.3	2.624	<5.00	<1.00
1/19/17	34.09	54.5	0.57	936	21.6	9.25	7.26	7.1	<1,000	89,200	10.2	0.366	63	544	<1.00	1.9	10.9	<2.00	<1.00	2.4	<1.00	<1.00	16.1	<0.2	8.8	<0.426	<2.08	<2.506	<5.00	<1.00
3/28/17	32.78	143.7	0.98	774	22.6	8.93	7.22	7.1	<1,000	79,800	10.18	0.305	60.9	533	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	10.5	<0.2	8.6	<0.195	<1.46	<1.655	<5.00	<1.00
5/24/17	33.39	151	1.07	885	22.2	6.36	7.18	6.9	<1,000	86,000	9.35	0.252	77	550	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	12.4	<0.2	9.2	0.273	<1.16	0.273	<5.00	<1.00
7/25/17	35.28	-87.9	0.48	947	24	9.22	7.17	6.9	<1,000	89,040	9.97	0.25	72.67	592	<1.00	1.4	<10	<2.00	<1.00	<1.00	<1.00	<1.00	12.9	<0.2	8.1	<0.641	<1.6	<2.241	<5.00	<1.00
9/21/17	36.60	200	0.34	963	22.9	6.38	7.25	6.7	<1,000	86,790	10	0.251	65.3	581																
3/13/18	32.88	123	0.98	892	17.1	6.84	7.36	7	314 J	78,000	10.6	0.29	51.5	533																
9/20/18	36.89	-3.1	0.19	1250	23.7	7.45	7.15	6.8	337	82,600	10	0.3	50.3	567																
11/29/18	36.41	109	0.41	932	19.2	6.85		6.9	363	83,300	9.94	0.293	45.7	546																
3/18/19	33.38	176	0.85	875	21.4	6.87	7.41	7	307	73,400	10.4	0.31	48.9	543									15.7							
5/21/19	33.94	98.5	0.93	930	22.4	6.12		7.1	339				49	547																
9/18/19	37.25	9	0.29	912	22.7	6.17	7.32	6.8	357	84,000	10.2	0.28	48.1	594									15.3							
3/11/20	33.87	76.9	1.11	923	22.2	6.58	7.31	7	384	86,100	10.5	0.3	44.4	585									19.8							
5/13/20	34.21	74.1	1.66	909	20.9	7.85	7.34	7	348	86,500	10.5	0.31	45.2	587																
9/15/20	37.45	4.6	1.2	932	24.3	6.13	7.2	6.8	281	86,000	10.5	0.3	42.5	615									16							
10/28/20	37.42	0.4	0.38	946	23.9	6.14		6.6					40.9	611																
MW-LF-23																														
5/11/16	30.33																													
7/13/16	33.73																													
9/13/16	34.38																													
11/16/17	34.55																													
1/19/17	34.65																													
3/1/17	34.03																													
5/24/17	34.04																													
7/25/17	34.69																													
9/21/17	34.84																													
3/13/18	33.27																													
9/20/18	35.00																													
3/18/19	34.38																													
5/21/19	35.09																													
9/18/19	36.67																													
3/11/20	34.88																													
9/15/20	37.46																													
MW-LF-23D																														
5/11/16	34.01	4.8	3.79	515	25.9	2.4	7.62	7.2	<1,000	29,300	12.6	0.366	29.6	196	<1.00	<1.00	13.2	<1.00	<1.00	<1.00	<1.00	<1.00	2.52	<0.2	16.3	0.694	1.5	2.194	<5.00	<1.00
7/13/16	35.27	8.6	0.23	632	25.3	11.2	7.41	7.1	<1,000	65,400	14	0.313	44.4	456	<1.00	1.8	10.8	<1.00	<1.00	<1.00	<1.00	<1.00	4.8	<0.2	17.5	0.662	0.313	0.975	<5.00	<1.00
9/13/16	35.52	31	0.95	765	25.6	5.53		7.2	<1,000	70,300	14.3	0.331	35.5	474	<1.00	1.7	12.8	<2.00	<1.00	<1.00	<1.00	<1.00	4.71	<0.2	14.3	0.648	<1.29	0.648	<5.00	<1.00
11/16/16	36.14	76.4	0.47	826	24	3.24	7.27	7.1	<1,000	69,180	14.8	0.381	31.3	463	<1.00	2.8	<10	<2.00	<1.00	<1.00	<1.00	<1.00	5.69	<0.2	9.7	0.518	<1.97	0.518	<5.00	<1.00
1/19/17	36.72	57.6	2.23	807	21.8	7.22	7.35	7.2	<1,000	68,500	14.8	0.434	32.6	421	<1.00	1	10.7	<2.00	<1.00	<1.00	<1.00	<1.00	6.66	<0.2	9.5	0.617	<1.72	0.617	<5.00	<1.00
3/28/17	34.51	139.2	1.77	710	23.2	7.92	7.18	7.2	<1,000	71,700	14.8	0.361	29.89	483	<1.00	<1.00	10.5	<2.00	<1.00	<1.00	<1.00	<1.00	6.95	<0.2	9.9	<0.157	1.8	1.8	<5.00	<1.00
5/24/17	34.97	3.8	0.87	794	21.7	5.69	7.28	7	<1,000	71,880	13.9	0.317	31.39	492	<1.00	1.1	<10	<2.00	<1.00	<1.00	<1.00	<1.00	8.9	<0.2	12.8	0.471	<1.8	0.471	<5.00	<1.00
7/25/17	35.77	22.6	1.13	850	22.7	7.85	7.4	6.9	<1,000	75,000	15.6	0.318	30.75	512	<1.00	1.9	<10	<2.00	<1.00	<1.00	<1.00	<1.00	9.21	<0.2	10.8	0.745	<1.23	0.745	<5.00	<1.00
9/21/17	35.60	174	0.49	861	22.8	6.83	7.33	6.9	<1,000	74,060	14.5	0.309	28.6	495																
3/13/18	33.97	115	1.29	818	17.1	6.12	7.26	7.1	265 J	66,290	16.1	0.38	29	471																
9/20/18	35.97	-22.5	0.43	1132	29.3	7.07	7.44	7	281	70,200	14.8	0.39	28.2	498																
11/29/18	35.31	68.8	0.53	839	19.9	6.17		7	285	70,700	15.2	0.386	26.7	514																
3/19/19	35.61	163	1.05	795	19.1	7.11	7.49	7.2	303	62,400	15.2	0.4	27	500									15.2							
5/21/19	36.36	73.9	0.37	843	21.9	5.69		7.1	288					480																
9/18/19	36.67	7.8	0.4	820	23.6	6.27	7.38	6.9	298	65,600	15	0.37	25.4	530									12.9							
3/11/20	35.47	12.2	1.29	832	21.5	5.97	7.41	7.1	333	73,000	15.5	0.41	25.2	528									24.4							
5/13/20	35.69	77.2	1.21	823	20.6	6.83	7.39	7.1	314	73,700	15.3	0.39	25.3	499																
9/16/20	37.19	-38.3	0.8	835	22.7	5.92	7.2	6.8	246	70,400	15.4	0.37	24.6	533																
10/29/20	36.63	-51.8	0.8	840	22.8	6.47		6.8					23.5	539																

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Goose Creek, Berkeley County, South Carolina

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	Groundwater Elevation ft	ORP mV	DO mg/L	Specific conductance u mhos/cm	Temperature degrees C	Turbidity NTU 10	pH (lab) S.U.	pH (field) S.U.	Boron ug/L BG	Calcium ug/L BG	Chloride mg/L BG	Fluoride mg/L 4 mg/L	Sulfate mg/L BG	TDS mg/L BG	Antimony ug/L 6 ug/L	Arsenic ug/L 10 ug/L	Barium ug/L 2000 ug/L	Beryllium ug/L 4 ug/L	Cadmium ug/L 5 ug/L	Chromium ug/L 100 ug/L	Cobalt ug/L BG	Lead ug/L 15 ug/L	Lithium ug/L BG	Mercury ug/L 2 ug/L	Molybdenum ug/L BG	Radium 226 pCi/L 5 pCi/L	Radium 228 pCi/L 5 pCi/L	Radium 226 + 228 pCi/L 5 pCi/L	Selenium ug/L 50 ug/L	Thallium ug/L 2 ug/L
MW-LF-24																														
5/11/16	36.34	36.9	3.91	877	22.4	3.01	6.84	6.6	<1,000	126,000	17.9	0.338	20.6	509	<1.00	<1.00	58	<1.00	<1.00	<1.00	<1.00	<1.00	3.93	<0.2	2.2	0.956	1.54	2.496	<5.00	<1.00
7/13/16	37.35	30.3	0.27	648	24.4	12.5	6.69	5.8	<1,000	118,000	20.8	0.399	42	495	<1.00	<1.00	46	<1.00	<1.00	<1.00	2.2	<1.00	5.07	<0.2	<1.00	0.638	-0.0616	0.5764	<5.00	<1.00
9/13/16	37.40	-13	0.88	938	27.8	5.74		6.6	<1,000	145,000	19	0.371	24.6	539	<1.00	3.2	50.8	<2.00	<1.00	<1.00	2.2	<1.00	3.81	<0.2	1.5	<0.359	2.03	2.03	<5.00	<1.00
11/17/16	36.39	-11.4	0.79	900	24.3	4.95	6.42	6.2	<1,000	128,200	18.2	0.343	22	520	<1.00	3.4	43.2	<2.00	<1.00	<1.00	2.6	<1.00	<2.00	<0.2	<1.00	0.533	1.55	2.083	<5.00	<1.00
1/20/17	35.47	50.5	0.73	974	21.6	9.85	6.69	6.5	<1,000	147,000	17.8	0.46	12	543	<1.00	1.6	46.4	<2.00	<1.00	<1.00	2.6	<1.00	2.92	<0.2	1.2	2.36	<1.26	2.36	<5.00	<1.00
3/28/17	35.34	85.2	0.32	840	22.8	9.28	6.66	6.5	<1,000	146,000	17.41	0.46	9.28	561	<1.00	1.5	51.1	<2.00	<1.00	<1.00	1.6	<1.00	4.26	<0.2	1.1	<0.253	2.12	2.12	<5.00	<1.00
5/24/17	36.05	-13.4	0.64	917	21.7	6.12	6.78	6.4	<1,000	138,700	16.37	0.39	9.06	510	<1.00	<1.00	46.1	<2.00	<1.00	<1.00	1.4	<1.00	3.84	<0.2	1	0.266	<1.63	0.266	<5.00	<1.00
7/26/17	37.05	-19.2	1.44	935	21.8	6.15	6.43	6.4	<1,000	136,100	21.58	0.362	31.99	450	<1.00	2.4	42.1	<2.00	<1.00	<1.00	1.6	<1.00	5	<0.2	<1.00	0.485	1.08	1.565	<5.00	<1.00
9/21/17	37.59	-5.1	0.5	902	24.3	5.36	6.54	6.3	<1,000	123,000	22.4	0.305	34.8	493																
3/13/18	36.45	49.7	0.25	887	18.8	6.39	6.76	6.5	80 J	133,300	18.7	0.47	11	484																
9/20/18	38.30	-1.6	0.47	1208	23.7	6.89	6.52	6.4	51.1	130,000	20.3	0.4	20.7	505																
11/29/18	37.45	43.1	0.41	878	23.6	7.48		6.3	68.7	128,000	21.9	0.326	22.6	507																
3/19/19	36.14	91.7	0.48	861	19.9	9.98	6.77	6.5	62.6	119,000	19.4	0.45	14.9	509									5.4							
5/21/19	36.85	-35.9	0.25	888	21.8	5.61		6.5						485																
9/18/19	37.88	-32.4	0.52	845	24.1	6.54	6.88	6.4	80.30 J	114,000	18.2	0.46	11.2	549									7.3							
3/11/20	36.85	28.5	0.52	820	21.1	9.57	6.71	6.3	114 J	124,000	19.5	0.47	14.7	497									11							
5/13/20	37.00	-28.6	1.86	818	21.5	7.58	6.8	6.4	73.60 J	131,000	19.2	0.49	13.7	482																
9/16/20	38.71	-63.7	0.57	847	23.1	6.28	6.89	6.4	<500	120,000	17.7	0.55	8.67	538																
10/29/20	38.28	-49.2	0.75	837	23.7	5.88		6.4		111,000				503																
MW-LF-25	37.19																													
5/11/16	35.53	25.4	4.83	727	22.7	5.76	7.22	6.9	<1,000	81,500	21.9	0.424	16.9	423	<1.00	<1.00	29.9	<1.00	<1.00	<1.00	<1.00	<1.00	2.36	<0.2	4.8	0.894	1.18	2.074	<5.00	<1.00
7/13/16	36.49	29.1	0.7	709	23.1	15.2	6.99	6.5	<1,000	110,000	21.6	0.538	20.1	523	<1.00	<1.00	20.8	<1.00	<1.00	<1.00	<1.00	<1.00	5.78	<0.2	3.8	0.309	1.27	1.579	<5.00	<1.00
9/13/16	36.78	81	1.07	886	25.7	6.17		6.9	<1,000	119,000	20.5	0.733	23.1	545	<1.00	<1.00	20.2	<2.00	<1.00	<1.00	<1.00	<1.00	7.42	<0.2	4.6	0.415	<1.42	0.415	<5.00	<1.00
11/17/16	35.93	98.7	1.11	929	24.3	4.04	6.94	6.8	<1,000	110,600	19.9	0.839	29.6	537	<1.00	<1.00	18.4	<2.00	<1.00	<1.00	<1.00	<1.00	6.8	<0.2	4	0.694	1.3	1.994	<5.00	<1.00
1/19/17	34.63	57.5	0.94	898	22.5	6.93	7.11	6.9	<1,000	107,700	22.3	0.723	40.3	519	<1.00	<1.00	16	<2.00	<1.00	<1.00	<1.00	<1.00	8.16	<0.2	4.1	0.306	<1.14	0.306	<5.00	<1.00
3/28/17	34.59	110.9	0.48	768	22.5	6.97	7.05	6.8	<1,000	110,000	22.7	0.63	41.24	534	<1.00	<1.00	17.4	<2.00	<1.00	<1.00	<1.00	<1.00	9.06	<0.2	3.7	<0.255	<1.62	<1.875	<5.00	<1.00
5/24/17	35.24	-2.4	1.14	889	21.7	5.63	7.02	6.8	<1,000	110,100	21.7	0.546	51.3	536	<1.00	<1.00	14.6	<2.00	<1.00	<1.00	<1.00	<1.00	10.5	<0.2	3.7	0.202	<1.10	0.202	<5.00	<1.00
7/26/17	36.18	1.3	1.87	972	21.6	6.54	7.11	6.7	<1,000	112,700	23.41	0.53	49.187	566	<1.00	1.2	15.6	<2.00	<1.00	<1.00	<1.00	<1.00	10.8	<0.2	3.5	<0.523	1.03	1.03	<5.00	<1.00
9/21/17	36.69	29.4	0.64	1035	23.2	6.52	7.13	6.7	<1,000	117,200	21.8	0.601	51.8	572																
3/13/18	35.33	68.1	0.95	957	19.2	6.66	7.08	6.8	143 J	123,100	23.2	0.66	73.2	564																
9/20/18	37.24	-21.2	0.21	1425	23.7	6.36	6.98	6.7	82.6	128,000	19.4	0.93	135	688																
11/29/18	36.67	360	0.35	1154	21.7	6.78		6.9	113	136,000	19.6	0.978	156	686																
3/19/19	34.76	159	0.32	1075	20.4	6.74	7.19	6.8	103	133,000	19.7	0.76	188	728									11							
5/21/19	35.54	118	0.97	1145	21.6	5.85		6.9				0.75		715																
9/18/19	37.20	-41.8	0.26	1136	23.5	6.86	9.2	6.7	105 J	136,000	18.9	0.65	171	743									12.4							
3/11/20	35.54	84.1	1.3	1169	21.4	6.32	7.11	6.7	135 J	157,000	21.2	0.84	215	792									14.4							
5/13/20	36.27	116	2.8	1163	21.1	7.17	7.12	6.7	101 J	165,000	20.3	0.75	216	770																
9/16/20	37.97	46.9	0.62	1238	22.7	6.47	7.02	6.6	<500	152,000	20.8	0.74	223	856																
10/29/20	37.53	-15.8	0.56	1226	23.3	6.31		6.5		144,000		0.79	212	830																
MW-LF-26																														
5/11/16	30.15	-27.9	3.23	1559	25.4	1.01	6.56	6.4	<1,000	160,000	154	0.118	73.9	876	<1.00	1.1	81.8	<1.00	<1.00	<1.00	6.1	<1.00	4.41	<0.2	<1.00	1.18	1.49	2.67	<5.00	<1.00
7/13/16	30.70	-51.3	0.35	1219	24.7	15	6.43	6.2	<1,000	144,500	162	0.1085	88.45	865	<1.00	2.8	74.5	<1.00	<1.00	<1.00	12.35	<1.00	2.505	<0.2	<1.00	1.203	1.81	3.013	<5.00	<1.00
9/13/16	31.21	-3	0.98	1370	28.5	5.38		6.2	<1,000	168,000	163	0.161	82.4	865	<1.00	4	80.6	<2.00	<1.00	<1.00	10.5	<1.00	<2.00	<0.2	<1.00	1.1	1.99	3.09	<5.00	<1.00
11/17/16	31.16	-15.6	1.01	1517	22.1	4.52	6.29	6	<1,000	165,000	147	0.196	76.3	860	<1.00	5	76.8	<2.00	<1.00	<1.00	8	<1.00	<2.00	<0.2	<1.00	1.49	2.25	3.74	<5.00	<1.00
1/20/17	30.45	-6	1.18	1542	21.2	6.43	6.28	6.1	<1,000	164,200	155	0.215	75.6	884	<1.00	5	74.7	<2.00	<1.00	<1.00	7.4	<1.00	2.29	<0.2	<1.00	0.604	<2.03	0.604	<5.00	<1.00
3/28/17	29.81	22.2	0.44	1340	24	6.28	6.25	6	<1,000	165,000	151.5	0.232	71.5	910	<1.00	4.4	78.9	<2.00	<1.00	<1.00	7.1	<1.00	2.75	<0.2	<1.00	0.795	<1.76	0.795	<5.00	<1.00
5/24/17	29.96	-14.8	0.79	1452	22.4	5.74	6.29	5.9	<1,000	157,800	68	0.165	35.33	878	<1.00	4.5	72.9	<2.00	<1.00	<1.00	7.2	<1.00	2.86	<0.2	<1.00	<0.372	<1.36	<1.732	<5.00	<1.00
7/26/17	30.89	-19.1	0.83	1540	19.9	7.23	6.41	6	<1,000	167,900	155.1	0.193	76.86	875	<1.00	4.5	72.6	<2.00	<1.00	<1.00	6.8	<1.00	2.49	<0.2	<1.00	8.26	<1.16	8.26	<5.00	<1.00
9/21/17	31.76	-19.4	1.22	1639	26.3	5.27	6.46	6	<1,000	174,800	161	0.185	73.3	2802																
3/13/18	30.12	-6.5	0.3	1529	19.5	7.31	6.42	6.1	134 J	167,900	154	<0.2	71.6	878																
9/20/18	31.58	-24.1	0.23	1868	23.2	7.03	6.38	6.1	142	166,000	147	0.21	74.8	512																
11/29/18	31.67	0.1	0.72	1601	21.6	6.7		6	152	177,000	150	0.334	72.6	924																
3/19/19	30.31	-11	0.61	1506	20	6.95	6.6	6.2	158	155,000	152	0.24	76.7	918									3.2							
5/21/19	30.13	-36.4	0.79	1602	23.6	6.15		6.2			147		74.3	929																
9/18/19	31.51	-24.1	0.32	1536	24.6	5.87	6.57	6	169 J	163,000	145	0.21	71.6	957									3.9							
3/11/20	30.96	-27.2	0.63	1527	22	7.51	6.59	6.1	193 J	179,000	146	0.25	75	937									4.17							
5/13/20	30.60	-28.3	3.01	1546	22.8	6.11	6.51	6.1	169 J	183,000	149	0.22	73.8	924																
9/16/20	31.64	-32.5	0.58	1523	22.6	6.31	6.55	6	<500	168,000	146	<0.2	71.3	954																
10/29/20	32.37	-38.5	0.54	1540	23.9	5.75		6		171,000		0.24	69.2	1002																
MW-LF-27																														
11/17/16	44.24	99.1	3.88	355	22	5.4	7.28	7.2	<1,000	53,020	4.85	0.318	5.69	189	<1.00	1.2	26.5	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	1.5	0.943	<1.75	0.943	<5.00	<1.00
1/20/17	46.76	6	1.17	519	20.4	8.37	7.07	6.9	<1,000	81,640	10.1	0.288	12	294	<1.00	<1.00	24.6	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	1.6	1.06	1.46	2.52	<5.00	<1.00
3/27/17	45.54	121.7	0.34	467	20.9	8.03	6.98	6.8	<1,000	87,100	12.78	0.273	12.78	314	<1.00	<1.00	22.4	<2.00	<1.00	1.7	<1.00	<1.00	<2.00	<0.2	1.6	3.45	<0.558	3.45	<5.00	<1.00
5/23/17	45.10	-24.5	1.05	599	20.1	6.54	7.18	6.6	<1,000	94,600	12.94	0.244	13.97	330	<1.00	1.2	23.4	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	1.4	0.537	<1.51	0.537	<5.00	<1.00
7/25/17	46.01	-37.2	0.7	661	20.9	5.13	7.15	6.9	<1,000	94,600	16.51	0.265	35.14	332	<1.00	1.1	22.2	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	1.63	<1.31	1.63	<5.00	<1.00
9/20/17	47.11	-2.4	0.8	609	22.2	7.44	7.18	6.7	<1,000	86,730	14.2	0.267	32	318																
3/13/18	44.77	4.6	0.27	448	17.6	5.37	7.02	6.8	<1,000	69,670	13.3	0.21	15.5	265																
9/19/18	44.79	-93.3	0.39	757	22.3	6.14	7.14	7.2	22.7	79,700	13.3	0.27	16.8	315																
11/28/18	45.60	-60.4	0.3	582	19.6	6.03		7	45.7	62,100	15.4	0.215	13.2	169																
3/18/19	45.89	-1.5	0.27	435	18	5.84	7.14	6.7	98.2	55,900	14.6	0.23	14.1	274									2.2							
5/20/19	43.81	-73.1	0.31	531	19.9	6.29	7.08	7	<38.458		15.2		7.96	254																
9/17/19	45.01	-101	0.28	555	23.1	7.24	7.22	6.8	42.60 J	62,500	15.2	0.23	10.4	239									1.60 J							
3/12/20	48.09	2.3	0.87	401	18	6.69	7.1	6.5	58.40 J	51,300	14.5	0.16	20.9	235									2.77							
5/12/20	45.44	-90.3	1	502	18.4	7.69	7.27	6.9	<38.458	75,700	13.9	0.21	14.8	292																
9/15/20	45.07	-113	0.65	555	22.5	5.89	7.23	6.8	<500	82,300	10.1	0.26	8.5	306									3.93							
10/28/20	46.40	-107	0.5	561	21.8	6.45	7.45	6.8	<500	52,500	10.3	0.28	5.41	240																

TABLE 1
RESULTS OF FIELD AND LABORATORY ANALYSES OF GROUNDWATER, SURFACE WATER AND LEACHATE SAMPLES
EPA CCR RULE BACKGROUND AND COMPLIANCE GROUNDWATER MONITORING WELLS
Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

	Groundwater Monitoring Indicator Parameters						40 CFR Part 257 Appendix III Detection Monitoring Parameters								40 CFR Part 257 Appendix IV Assessment Monitoring Constituents														
	Groundwater Elevation ft	ORP mV	DO mg/L	Specific conductance u mhos/cm	Temperature degrees C	Turbidity NTU 10	pH (lab) S.U.	pH (field) S.U.	Boron ug/L BG	Calcium ug/L BG	Chloride mg/L BG	Fluoride mg/L 4 mg/L	Sulfate mg/L BG	TDS mg/L BG	Antimony ug/L 6 ug/L	Arsenic ug/L 10 ug/L	Barium ug/L 2000 ug/L	Beryllium ug/L 4 ug/L	Cadmium ug/L 5 ug/L	Chromium ug/L 100 ug/L	Cobalt ug/L BG	Lead ug/L 15 ug/L	Lithium ug/L BG	Mercury ug/L 2 ug/L	Molybdenum ug/L BG	Radium 226 pCi/L 5 pCi/L	Radium 228 pCi/L 5 pCi/L	Radium 226 + 228 pCi/L 5 pCi/L	Selenium ug/L 50 ug/L	Thallium ug/L 2 ug/L
MW-LF-28																													
11/17/16	40.68	131.1	5.49	226	23.1	3.96	6.86	6.6	<1,000	34,490	4.05	0.12	4.85	120	<1.00	<1.00	22	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	0.897	<1.32	0.897	<5.00	<1.00
1/19/17	41.81	79	3.28	200	19.1	7.93	6.68	6.6	<1,000	29,900	3.98	0.146	0.827	96	<1.00	<1.00	10.1	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	0.792	<1.37	0.792	<5.00	<1.00
3/27/17	40.96	200.7	2.59	130	19	8.12	6.6	6.4	<1,000	23,800	3.68	0.145	0.92	95	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	2.51	<0.51	2.51	<5.00	<1.00
5/23/17	40.85	31.7	3.61	165	20.8	5.69	6.58	6.4	<1,000	17,300	3.98	0.0851	1.36	68	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	<0.337	<1.52	<1.857	<5.00	<1.00
7/25/17	41.66	-18.4	0.47	270	22.9	5.35	6.58	7	<1,000	18,440	3.86	0.0938	1.72	95	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	1.39	<1.79	<1.39	<5.00	<1.00
9/20/17	41.88	90.9	0.65	230	24.3	5.95	6.64	6.7	<1,000	17,460	3.6	0.118	3.1	73																
3/13/18	40.86	65.1	2.35	146	17.5	5.6	6.67	6.4	<1,000	19,930	3.99	<0.2	3.12	76																
9/19/18	41.57	81.3	2.03	261	24.4	6.66	6.55	6	<21.9	12,000	3.65	<0.025	1.29	64																
11/28/18	41.62	57.4	2.82	139	21.3	5.62		6	14.3 J	10,600	3.92	0.0798 J	4.83	41.4																
3/18/19	41.25	208	2.3	110	17.2	6.64	6.5	6.1	<38.458	10,600	4.05	<0.008	2.96	67									1.6							
5/20/19	40.14	161	3.12	136	19.4	5.93	6.23	6.1	<38.458		4.01		1.63	45																
9/17/18	41.15	94	2.06	123	24.2	6.2	6.45	5.9	<38.458	12,000	4.45	<0.008	2.48	57									2.3							
3/12/20	42.04	171	3.17	128	17.9	6.74	6.19	6	<38.458	13,500	5.21	<0.008	5.11	68									2.04							
5/12/20	41.17	165	3.75	170	18.5	7.11	6.31	5.9	46.50 J	11,800	5.18	<0.008	2.11	59																
9/15/20	41.52	101	3.17	121	24.3	6.28	6.39	5.9	<500	12,300	5.24	<0.10	1.74	76									2.14							
10/28/20	41.90	118	2.48	119	23.7	6.45	6.54	5.6	<500	9,690	5.37	<0.10	2.89	77																
Landfill Leachate																														
10/18/17									14,000	699,000	529		1634	3257	18	15.4	43	<4.00	4.5	501	7.7	<4.00	2730	<0.2	5240				519	4.2
11/8/17									16,548	758,800					23.2	18.6	44.4	<4.00	4.1	681	9	<2.00	4396	<0.2	6520				476	5
9/19/18							6.84		14,000	736,000	423	<0.625	1728	3700	15.5	16.9	70.5	<0.57	3.6	283	5.2	0.23	1710	<0.071	2830				513	4.2
11/28/18									12,900	630,000	367	2.52	1610	3760	15.4	12.1	56.3	<2.00	3.03	157	4.26	<2.00	2580	<0.2	4110	0.573	<3.00	0.573	551	3.86
3/19/19							6.74		14,500	692,000	490	3.18	1819	3932	10.7	7.1	50.4	<0.598	2.9	186	3.4	<0.102	3380	<0.071	6040				500	3.4
3/11/20		71.3	7.31	4120	20.8	5.78	7.07	6.9	16,400	834,000	408	3.21	1807	3923									3350							
5/12/20		135	5.43	4638	20.2	8.41	7.12	6.7	21,400	893,000	561	3.33	1804	4326																
9/15/20		96	5.13	4531	23.2	5.81	6.93	6.8	18,000	761,000	532	3.71	1910	4294	23.7	20.4	44.4	<1.0	8.75	95.1	6.81	<1.0	3800	<0.2	8390				552	9.27
Leachate Pond Forebay																														
5/31/17										272,000													408		558					
6/12/17										445,500											<5.00		1406		2177					
Leachate Pond																														
5/31/17										281,000													515		984					
6/12/17										252,400											<5.00		367		898					
Surface Water Pond																														
5/31/17										12,600													<2.00		11.1					
6/12/17										15,240											<5.00		<2.00		<10					

Notes: Monitoring well locations highlighted in green are background monitoring locations.
Monitoring well locations highlighted in orange are down gradient compliance monitoring locations.
BG = Background; For those constituents for which a Maximum Contaminant Level (MCL) has not been established by the US EPA, detected concentrations in groundwater at compliance monitoring well locations are compared to concentrations detected in groundwater at background locations to determine if a statisticaly significant increase in concentrations above background levels is evident from the data.
Results shown in blue indicate the analyte was not detected above the indicated laboratory reporting limit (i.e., the value listed).

Nautilus Geologic Consulting, PLLC

APPENDIX A

Results of Laboratory Analyses of Groundwater Samples

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11173**

Williams Hwy 52 MW-LF-27 CCR TDS

Date & Time Sampled: September 15, 2020 09:44
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG27TDS

GW 27 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.1	0.50	mg/L	9/19/20 21:59	BB
Fluoride by IC EPA 300.0	0.26	0.10	mg/L	9/19/20 21:59	BB
pH by SM4500HB(2011)	7.23		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	8.50	0.50	mg/L	9/19/20 21:59	BB
Total Alkalinity by SM2320B	234	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	306	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11174**

Williams Hwy 52 FIELD BLANK CCR TDS

Date & Time Sampled: September 15, 2020 10:15
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLGFBTDS

GW 10 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than	0.50	mg/L	9/19/20 21:59	BB
Fluoride by IC EPA 300.0	Less than	0.10	mg/L	9/19/20 21:59	BB
pH by SM4500HB(2011)	7.22		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	Less than	0.50	mg/L	9/19/20 21:59	BB
Total Alkalinity by SM2320B	Less than	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	11	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11175**

Williams Hwy 52 MW-10-LF Well CCR TDS

Date & Time Sampled: September 15, 2020 10:25
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG10-LFPH

GW 10 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	25.6	0.50	mg/L	9/19/20 19:44	BB
Fluoride by IC EPA 300.0	0.46	0.10	mg/L	9/19/20 19:44	BB
pH by SM4500HB(2011)	7.24		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	7.27	0.50	mg/L	9/19/20 19:44	BB
Total Alkalinity by SM2320B	157	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	389	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11176**

Williams Hwy 52 MW-11-LF Well CCR TDS

Date & Time Sampled: September 15, 2020 11:14
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG11-LFPH

GW 11 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	7.23	0.50	mg/L	9/19/20 19:44	BB
Fluoride by IC EPA 300.0	0.34	0.10	mg/L	9/19/20 19:44	BB
pH by SM4500HB(2011)	6.59		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	1.24	0.50	mg/L	9/19/20 19:44	BB
Total Alkalinity by SM2320B	80	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	126	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11177**

Williams Hwy 52 MW-LF-28 CCR TDS

Date & Time Sampled: September 15, 2020 12:04
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG28TDS

GW 28 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	5.24	0.50	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	Less than	0.10	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	6.39		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	1.74	0.50	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	40	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	76	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11178**

Williams Hwy 52 DUP CCR TDS

Date & Time Sampled: September 15, 2020 12:10
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLGDUPTDS

GW 10 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	5.34	0.50	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	Less than	0.10	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	6.39		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	1.74	0.50	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	45	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	68	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11179**

Williams Hwy 52 MW-LF-20 CCR TDS

Date & Time Sampled: September 15, 2020 12:57
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG20TDS

GW 20 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	11.3	0.50	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	0.23	0.10	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	6.83		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	6.44	0.50	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	604	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	635	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11180**

Williams Hwy 52 MW-LF-21 CCR TDS

Date & Time Sampled: September 15, 2020 13:39
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG21TDS

GW 21 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.7	0.50	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	0.24	0.10	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	6.94		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	6.44	0.50	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	576	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	654	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11181**

Williams Hwy 52 MW-LF-22D CCR TDS

Date & Time Sampled: September 15, 2020 14:20
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG22DTDS

GW 22D Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.5	0.50	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	0.30	0.10	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	7.20		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	42.5	0.50	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	499	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	615	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11182**

Williams 52 Landfill Leachate CCR TDS

Date & Time Sampled: September 15, 2020 15:25
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLLF52LETS

WLLF52LE Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	532	10.00	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	3.71	2.00	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	6.93		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	1910	10.00	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	267	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	4294	2.0	mg/L	9/23/20 09:37	MS
Holding Time of 7.00 days has been exceeded.					

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11183**

Williams Hwy 52 MW-LF-23D CCR TDS

Date & Time Sampled: September 16, 2020 09:30
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG23DTDS

GW 23D Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	15.4	0.50	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	0.37	0.10	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	7.2		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	24.6	0.50	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	422	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	533	2.0	mg/L	9/23/20 09:37	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11184**

Williams Hwy 52 MW-LF-25 CCR TDS

Date & Time Sampled: September 16, 2020 08:12
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG25TDS

GW 25 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	20.8	1.00	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	0.74	0.20	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	7.02		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	223	1.50	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	449	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	856	2.0	mg/L	9/23/20 09:37	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11185**

Williams Hwy 52 MW-LF-24 CCR TDS

Date & Time Sampled: September 16, 2020 09:15
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG24TDS

GW 24 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	17.7	0.50	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	0.55	0.10	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	6.89		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	8.67	0.50	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	444	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	538	2.0	mg/L	9/23/20 09:37	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11186**

Williams Hwy 52 MW-LF-26 CCR TDS

Date & Time Sampled: September 16, 2020 10:07
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG26TDS

GW 26 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	146	1.00	mg/L	9/20/20 14:54	BB
Fluoride by IC EPA 300.0	Less than	0.20	mg/L	9/20/20 14:54	BB
pH by SM4500HB(2011)	6.55		S.U.	9/18/20 14:22	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	71.3	1.00	mg/L	9/20/20 14:54	BB
Total Alkalinity by SM2320B	589	0.50	mg/L	9/18/20 14:22	PRC
Total Dissolved Solid-SM2540C	954	2.0	mg/L	9/23/20 09:37	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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Fax: (803) 217-9911

January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11187**

Williams Hwy 52 MW-LF-27 CCR Metals

Date & Time Sampled: September 15, 2020 09:44
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG27TM

GW 27 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	500	ppb	9/18/20 14:19	CG4691
Calcium EPA 200.7	82300	500	ppb	9/18/20 15:57	CHG
Lithium (CWA) 200.7	3.93	2.0	ppb	9/18/20 14:19	CG4691
Magnesium EPA 200.7	7810	50	ppb	9/18/20 15:57	CHG
Potassium EPA 200.7	7300	1000	ppb	9/18/20 14:19	CG4691
Sodium EPA 200.7	32000	1000	ppb	9/18/20 15:57	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Central Laboratory (P-08)
2102 North Lake Drive
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Tel: (803)217-9384
Fax: (803) 217-9911

January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11188**

Williams Hwy 52 FIELD BLANK CCR Metals

Date & Time Sampled: September 15, 2020 10:15
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLGFBTM

GW 10 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	500	ppb	9/18/20 14:19	CG4691
Calcium EPA 200.7	Less than	500	ppb	9/18/20 15:57	CHG
Lithium (CWA) 200.7	Less than	2.0	ppb	9/18/20 14:19	CG4691
Magnesium EPA 200.7	Less than	50	ppb	9/18/20 15:57	CHG
Potassium EPA 200.7	Less than	1000	ppb	9/18/20 14:19	CG4691
Sodium EPA 200.7	Less than	1000	ppb	9/18/20 15:57	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11189**

Williams Hwy 52 MW-LF-10 CCR Metals

Date & Time Sampled: September 15, 2020 10:25
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLGMW10LFTM

GW 10 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	500	ppb	9/18/20 14:19	CG4691
Calcium EPA 200.7	71200	500	ppb	9/18/20 15:57	CHG
Lithium (CWA) 200.7	12.1	2.0	ppb	9/18/20 14:19	CG4691
Magnesium EPA 200.7	6540	50	ppb	9/18/20 15:57	CHG
Potassium EPA 200.7	5820	1000	ppb	9/18/20 14:19	CG4691
Sodium EPA 200.7	46000	1000	ppb	9/18/20 15:57	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11190**

Williams Hwy 52 MW-LF-11 CCR Metals

Date & Time Sampled: September 15, 2020 11:14
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLGMW11LFTM

GW 11 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	500	ppb	9/18/20 14:19	CG4691
Calcium EPA 200.7	18800	500	ppb	9/18/20 15:57	CHG
Lithium (CWA) 200.7	4.16	2.0	ppb	9/18/20 14:19	CG4691
Magnesium EPA 200.7	4160	50	ppb	9/18/20 15:57	CHG
Potassium EPA 200.7	2540	1000	ppb	9/18/20 14:19	CG4691
Sodium EPA 200.7	10400	1000	ppb	9/18/20 15:57	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11191**

Williams Hwy 52 MW-LF-28 CCR Metals

Date & Time Sampled: September 15, 2020 12:04
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG28TM

GW 28 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	500	ppb	9/18/20 14:19	CG4691
Calcium EPA 200.7	12300	500	ppb	9/18/20 15:57	CHG
Lithium (CWA) 200.7	2.14	2.0	ppb	9/18/20 14:19	CG4691
Magnesium EPA 200.7	1650	50	ppb	9/18/20 15:57	CHG
Potassium EPA 200.7	1660	1000	ppb	9/18/20 14:19	CG4691
Sodium EPA 200.7	5730	1000	ppb	9/18/20 15:57	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11192**

Williams Hwy 52 DUP CCR Metals

Date & Time Sampled: September 15, 2020 12:10
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	500	ppb	9/18/20 14:23	CHG
Calcium EPA 200.7	12200	500	ppb	9/18/20 14:23	CHG
Lithium (CWA) 200.7	2.01	2.0	ppb	9/18/20 14:23	CHG
Magnesium EPA 200.7	1780	50	ppb	9/18/20 14:23	CHG
Potassium EPA 200.7	1650	1000	ppb	9/18/20 14:23	CHG
Sodium EPA 200.7	5600	1000	ppb	9/18/20 14:23	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11193**

Williams Hwy 52 MW-LF-20 CCR Metals

Date & Time Sampled: September 15, 2020 12:57
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG20TM

GW 20 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	181	500	ppb	9/18/20 14:23	CHG
Calcium EPA 200.7	158000	500	ppb	9/18/20 14:23	CHG
Lithium (CWA) 200.7	8.88	2.0	ppb	9/18/20 14:23	CHG
Magnesium EPA 200.7	24800	50	ppb	9/18/20 14:23	CHG
Potassium EPA 200.7	8680	1000	ppb	9/18/20 14:23	CHG
Sodium EPA 200.7	66800	1000	ppb	9/18/20 14:23	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11194**

Williams Hwy 52 MW-LF-21 CCR Metals

Date & Time Sampled: September 15, 2020 13:39
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG21TM

GW 21 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	160	500	ppb	9/18/20 14:23	CHG
Calcium EPA 200.7	123000	500	ppb	9/18/20 14:23	CHG
Lithium (CWA) 200.7	8.16	2.0	ppb	9/18/20 14:23	CHG
Magnesium EPA 200.7	32400	50	ppb	9/18/20 14:23	CHG
Potassium EPA 200.7	9800	1000	ppb	9/18/20 14:23	CHG
Sodium EPA 200.7	65800	1000	ppb	9/18/20 14:23	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11195**

Williams Hwy 52 MW-LF-22D CCR Metals

Date & Time Sampled: September 15, 2020 14:20
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG22DTM

GW 22D Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	281	500	ppb	9/18/20 14:23	CHG
Calcium EPA 200.7	86000	500	ppb	9/18/20 14:23	CHG
Lithium (CWA) 200.7	16.0	2.0	ppb	9/18/20 14:23	CHG
Magnesium EPA 200.7	32200	50	ppb	9/18/20 14:23	CHG
Potassium EPA 200.7	11100	1000	ppb	9/18/20 14:23	CHG
Sodium EPA 200.7	86500	1000	ppb	9/18/20 14:23	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11196**

Williams Hwy 52 LF Leachate CCR Metals

Date & Time Sampled: September 15, 2020 15:25
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLLF52LETM1

WLLF52LE Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	23.7	1.0	ppb	10/1/20 12:35	CHG
Arsenic by ICP_MS 200.8	20.4	1.0	ppb	10/1/20 17:24	CHG
Barium by ICP-OES 200.7	44.4	10.0	ppb	9/21/20 12:40	CHG
Beryllium EPA 200.8	Less than	1.0	ppb	10/1/20 17:24	CHG
Boron - EPA 200.7	18000	500	ppb	9/21/20 12:40	CHG
Cadmium by ICP_MS EPA 200.8	8.75	1.0	ppb	10/1/20 12:35	CHG
Calcium EPA 200.7	761000	5000	ppb	9/21/20 12:40	CHG
Chromium by ICP_MS 200.8	95.1	1.0	ppb	10/1/20 12:35	CHG
Cobalt by ICP_MS 200.8	6.81	1.0	ppb	10/1/20 12:35	CHG
Lead by ICP-MS 200.8	Less than	1.0	ppb	10/1/20 12:35	CHG
Lithium (CWA) 200.7	3800	20.0	ppb	9/21/20 12:40	CHG
Magnesium EPA 200.7	77000	50	ppb	9/21/20 12:40	CHG
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/23/20 15:29	PRC
Molybdenum - EPA 200.8	8390	1.0	ppb	10/1/20 12:35	CHG
Potassium EPA 200.7	163000	1000	ppb	9/21/20 12:40	CHG
Selenium by ICP-MS 200.8	552	5.0	ppb	10/1/20 12:35	CHG
Sodium EPA 200.7	194000	1000	ppb	9/21/20 12:40	CHG
Thallium by ICP-MS 200.8	9.27	1.0	ppb	10/1/20 12:35	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11197**

Williams Hwy 52 MW-LF-23D CCR Metals

Date & Time Sampled: September 16, 2020 09:30
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG23DTM

GW 23D Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	246	500	ppb	9/18/20 14:23	CHG
Calcium EPA 200.7	70400	500	ppb	9/18/20 14:23	CHG
Lithium (CWA) 200.7	14.5	2.0	ppb	9/18/20 14:23	CHG
Magnesium EPA 200.7	25600	50	ppb	9/18/20 14:23	CHG
Potassium EPA 200.7	10200	1000	ppb	9/18/20 14:23	CHG
Sodium EPA 200.7	84400	1000	ppb	9/18/20 14:23	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11198**

Williams Hwy 52 MW-LF-25 CCR Metals

Date & Time Sampled: September 16, 2020 08:12
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG25TM

GW 25 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	500	ppb	9/18/20 14:23	CHG
Calcium EPA 200.7	152000	500	ppb	9/18/20 14:23	CHG
Lithium (CWA) 200.7	13.4	2.0	ppb	9/18/20 14:23	CHG
Magnesium EPA 200.7	38300	50	ppb	9/18/20 14:23	CHG
Potassium EPA 200.7	8080	1000	ppb	9/18/20 14:23	CHG
Sodium EPA 200.7	80600	1000	ppb	9/18/20 14:23	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11199**

Williams Hwy 52 MW-LF-24 CCR Metals

Date & Time Sampled: September 16, 2020 09:15
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG24TM

GW 24 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	500	ppb	9/18/20 14:23	CHG
Calcium EPA 200.7	120000	500	ppb	9/18/20 14:23	CHG
Lithium (CWA) 200.7	9.59	2.0	ppb	9/18/20 14:23	CHG
Magnesium EPA 200.7	19900	50	ppb	9/18/20 14:23	CHG
Potassium EPA 200.7	4880	1000	ppb	9/18/20 14:23	CHG
Sodium EPA 200.7	44500	1000	ppb	9/18/20 14:23	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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January 07, 2021

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11200**

Williams Hwy 52 MW-LF-26 CC Metals

Date & Time Sampled: September 16, 2020 10:07
Date & Time Submitted: September 16, 2020 13:27
Collected by: C.SANDEL Location Code: WLG26TM

GW 26 Login Record File: 200916006

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	500	ppb	9/18/20 14:23	CHG
Calcium EPA 200.7	168000	500	ppb	9/18/20 14:23	CHG
Lithium (CWA) 200.7	4.20	2.0	ppb	9/18/20 14:23	CHG
Magnesium EPA 200.7	31400	50	ppb	9/18/20 14:23	CHG
Potassium EPA 200.7	3490	1000	ppb	9/18/20 14:23	CHG
Sodium EPA 200.7	120000	1000	ppb	9/18/20 14:23	CHG

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

Central Laboratory (P-08)
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November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11788**

Williams Hwy 52 MW-LF-27 TM

Date & Time Sampled: October 28, 2020 07:58
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG27TM

GW 27 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	500	165	ppb	10/30/20 15:34	CHG
Calcium EPA 200.7	52500	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	4340	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	4610	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	19900	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

Central Laboratory (P-08)
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Fax: (803) 217-9911

November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11789**

Williams Hwy 52 FIELD BLANK TM

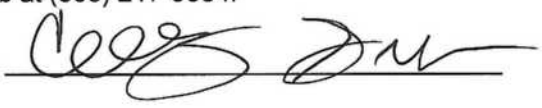
Date & Time Sampled: October 28, 2020 08:30
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGFBTM

GW 10 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	500	165	ppb	10/30/20 15:34	CHG
Calcium EPA 200.7	Less than MDL	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	Less than MDL	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	Less than MDL	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	Less than MDL	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: 

Dominion Energy

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November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11790**

Williams Hwy 52 MW-LF-10 TM

Date & Time Sampled: October 28, 2020 08:39
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG10TM

GW 10

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	500	165	ppb	10/30/20 15:34	CHG
Calcium EPA 200.7	69900	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	6220	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	5470	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	44600	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11791**

Williams Hwy 52 MW-LF-11 TM

Date & Time Sampled: October 28, 2020 09:30
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG11TM

GW 11

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	500	165	ppb	10/30/20 15:34	CHG
Calcium EPA 200.7	16800	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	3870	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	2400	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	9840	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

Central Laboratory (P-08)
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November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11792**

Williams Hwy 52 MW-LF-28 TM

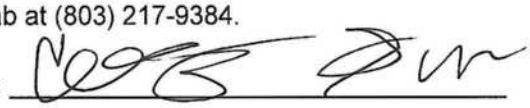
Date & Time Sampled: October 28, 2020 10:29
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG28TM

GW 28 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	500	165	ppb	10/30/20 15:34	CHG
Calcium EPA 200.7	9690	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	1360	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	1490	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	5110	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: 

Dominion Energy

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Fax: (803) 217-9911

November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11793**

Williams Hwy 52 DUP TM

Date & Time Sampled: October 28, 2020 10:34
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	500	165	ppb	10/30/20 15:34	CHG
Calcium EPA 200.7	9480	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	1320	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	1380	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	4960	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11794**

Williams Hwy 52 MW-AS-12 TM CCR

Date & Time Sampled: October 28, 2020 11:26
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGAS12TM

GW 11 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	500	165	ppb	10/30/20 15:34	CHG
Calcium EPA 200.7	30500	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	4450	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	2610	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	11700	1000	254	ppb	11/5/20 16:08	CHG

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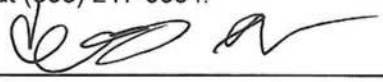
Approved By: 

Dominion Energy

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Fax: (803) 217-9911

November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11795**

Williams Hwy 52 MW-LF-20 TM CCR

Date & Time Sampled: October 28, 2020 12:23
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG20TM

GW 20 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Calcium EPA 200.7	136000	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	21800	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	7940	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	60500	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Dominion Energy

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Columbia, SC 29212
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Fax: (803) 217-9911

November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11796**

Williams Hwy 52 MW-LF-21 TM CCR

Date & Time Sampled: October 28, 2020 13:14
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG21TM

GW 21 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Calcium EPA 200.7	122000	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	31400	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	9760	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	65800	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Dominion Energy

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November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11797**

Williams Hwy 52 FIELD BLANK TM CCR

Date & Time Sampled: October 29, 2020 08:45
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGFBTM

GW 10 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	500	165	ppb	10/30/20 15:34	CHG
Calcium EPA 200.7	Less than MDL	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	Less than MDL	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	Less than MDL	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	Less than MDL	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Dominion Energy

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November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11798**

Williams Hwy 52 MW-LF-25 TM CCR

Date & Time Sampled: October 29, 2020 08:59
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG25TM

GW 25 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Calcium EPA 200.7	144000	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	35600	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	7330	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	74600	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Dominion Energy

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Fax: (803) 217-9911

November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11799**

Williams Hwy 52 MW-LF-24 TM CCR

Date & Time Sampled: October 29, 2020 09:48
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG24TM

GW 24 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Calcium EPA 200.7	111000	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	17500	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	4710	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	42200	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Dominion Energy

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November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11800**

Williams Hwy 52 MW-LF-26 TM CCR

Date & Time Sampled: October 29, 2020 10:47
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG26TM

GW 26

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Calcium EPA 200.7	171000	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	31100	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	3500	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	118000	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

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November 05, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11801**

Williams Hwy 52 DUP TM CCR

Date & Time Sampled: October 29, 2020 10:52
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	500	165	ppb	10/30/20 15:34	CHG
Calcium EPA 200.7	162000	500	83.8	ppb	10/30/20 15:34	CHG
Magnesium EPA 200.7	29500	50	18.7	ppb	11/5/20 16:08	CHG
Potassium EPA 200.7	3400	1000	310	ppb	11/5/20 16:08	CHG
Sodium EPA 200.7	112000	1000	254	ppb	11/5/20 16:08	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Dominion Energy

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Fax: (803) 217-9911

November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11772**

Williams Hwy 52 MW-LF-27 TDS

Date & Time Sampled: October 28, 2020 07:58
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG27TDS

GW 27

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.3	0.50	0.038	mg/L	10/29/20 20:29	BB
Fluoride by IC EPA 300.0	0.28	0.10	0.008	mg/L	10/29/20 20:29	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.45			S.U.	11/2/20 19:00	MS
Sulfates by IC EPA 300.0	5.41	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	173	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	240	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

Dominion Energy

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11773**

Williams Hwy 52 FIELD BLANK TDS

Date & Time Sampled: October 28, 2020 08:30
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGFBTDS

GW 10 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than PQL	0.50	0.038	mg/L	10/29/20 20:29	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	10/29/20 20:29	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.96			S.U.	11/2/20 19:00	MS
Sulfates by IC EPA 300.0	Less than PQL	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	1.02	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	13	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

Dominion Energy

Central Laboratory (P-08)
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Fax: (803) 217-9911

November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11774**

Williams Hwy 52 MW-LF-10 TDS

Date & Time Sampled: October 28, 2020 08:39
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG10TDS

GW 10 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	25.0	0.50	0.038	mg/L	10/29/20 20:29	BB
Fluoride by IC EPA 300.0	0.46	0.10	0.008	mg/L	10/29/20 20:29	BB
pH by SM4500HB(2011)	7.51			S.U.	11/2/20 19:00	MS
Holding Time of 15 minutes has been exceeded.						
Sulfates by IC EPA 300.0	7.28	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	277	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	377	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

Dominion Energy

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November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11775**

Williams Hwy 52 MW-LF-11 TDS

Date & Time Sampled: October 28, 2020 09:30
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG11TDS

GW 11 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	15.0	0.50	0.038	mg/L	10/29/20 20:29	BB
Fluoride by IC EPA 300.0	0.67	0.10	0.008	mg/L	10/29/20 20:29	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	6.81			S.U.	11/2/20 19:00	MS
Sulfates by IC EPA 300.0	3.08	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	73.7	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	109	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

Dominion Energy

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November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11776**

Williams Hwy 52 MW-LF-28 TDS

Date & Time Sampled: October 28, 2020 10:29
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG28TDS

GW 28 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	5.37	0.50	0.038	mg/L	10/29/20 20:29	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	10/29/20 20:29	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	6.54			S.U.	11/2/20 19:00	MS
Sulfates by IC EPA 300.0	2.89	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	30.5	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	77	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Santos

Dominion Energy

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
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Fax: (803) 217-9911

November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11777**

Williams Hwy 52 DUP TDS

Date & Time Sampled: October 28, 2020 10:34
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGDUPTDS

GW 10 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	5.34	0.50	0.038	mg/L	10/29/20 20:29	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	10/29/20 20:29	BB
pH by SM4500HB(2011)	6.33			S.U.	11/2/20 19:00	MS
Holding Time of 15 minutes has been exceeded.						
Sulfates by IC EPA 300.0	1.79	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	33	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	88	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Santos

Dominion Energy

Central Laboratory (P-08)
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November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11778**

Williams Hwy 52 MW-AS-12 TDS CCR

Date & Time Sampled: October 28, 2020 11:26
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGAS12TDS

GW 11 Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	4.82	0.50	0.038	mg/L	10/29/20 20:29	BB
Fluoride by IC EPA 300.0	0.13	0.10	0.008	mg/L	10/29/20 20:29	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.21			S.U.	11/2/20 19:00	MS
Sulfates by IC EPA 300.0	3.62	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	112	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	131	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

Dominion Energy

Central Laboratory (P-08)
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Fax: (803) 217-9911

November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11779**

Williams Hwy 52 MW-LF-20 TDS CCR

Date & Time Sampled: October 28, 2020 12:23
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG20TDS

GW 20

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Total Alkalinity by SM2320B	589	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	678	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Santos

Dominion Energy

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11780**

Williams Hwy 52 MW-LF-21 TDS CCR

Date & Time Sampled: October 28, 2020 13:14
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG21TDS

GW 21

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Total Alkalinity by SM2320B	582	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	646	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

Dominion Energy

Central Laboratory (P-08)
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November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11781**

Williams Hwy 52 MW-LF-22D TDS CCR

Date & Time Sampled: October 28, 2020 14:02
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG22DTDS

GW 22D Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Sulfates by IC EPA 300.0	40.9	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	498	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	611	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

Dominion Energy

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11782**

Williams Hwy 52 MW-LF-23D TDS CCR

Date & Time Sampled: October 29, 2020 08:22
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG23DTDS

GW 23D

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Sulfates by IC EPA 300.0	23.5	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	437	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	539	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Santos

Dominion Energy

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November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11783**

Williams Hwy 52 FIELD BLANK TDS CCR

Date & Time Sampled: October 29, 2020 08:45
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGFBTDS

GW 10

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than PQL	0.50	0.038	mg/L	10/29/20 20:29	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	10/29/20 20:29	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	6.00			S.U.	11/2/20 19:00	MS
Sulfates by IC EPA 300.0	Less than PQL	0.50	0.063	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	Less than PQL	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	30	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

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November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11784**

Williams Hwy 52 MW-LF-25 TDS CCR

Date & Time Sampled: October 29, 2020 08:59
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG25TDS

GW 25

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Fluoride by IC EPA 300.0	0.79	0.30	0.024	mg/L	10/29/20 20:29	BB
Sulfates by IC EPA 300.0	212	1.50	0.189	mg/L	10/29/20 20:29	BB
Total Alkalinity by SM2320B	457	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	830	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

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November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11785**

Williams Hwy 52 MW-LF-24 TDS CCR

Date & Time Sampled: October 29, 2020 09:48
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLG24TDS

GW 24

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Total Alkalinity by SM2320B	406	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	503	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Manuel Serratos

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November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11786**

Williams Hwy 52 MW-LF-26 TDS CCR

Date & Time Sampled: October 29, 2020 10:47
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL
Location Code: WLG26TDS

GW 26

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAI ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Fluoride by IC EPA 300.0	0.24	0.10	0.008	mg/L	10/29/20 16:00	BB
Sulfates by IC EPA 300.0	69.2	0.50	0.063	mg/L	10/29/20 16:00	BB
Total Alkalinity by SM2320B	599	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	1002	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

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November 04, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA11787**

Williams Hwy 52 DUP TDS CCR

Date & Time Sampled: October 29, 2020 10:52
Date & Time Submitted: October 29, 2020 12:56
Collected by: C.SANDEL Location Code: WLGDUPTDS

GW 10

Login Record File: 201029002

CERTIFIED BY SCDHEC (LAI ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	143	1.00	0.076	mg/L	10/29/20 16:00	BB
Fluoride by IC EPA 300.0	0.24	0.10	0.008	mg/L	10/29/20 16:00	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	6.72			S.U.	11/2/20 19:00	MS
Sulfates by IC EPA 300.0	68.8	0.50	0.063	mg/L	10/29/20 16:00	BB
Total Alkalinity by SM2320B	594	0.50	0.50	mg/L	11/3/20 18:00	MS
Total Dissolved Solid-SM2540C	1008	2.0	2.0	mg/L	11/1/20 18:16	MS

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Nautilus Geologic Consulting, PLLC

APPENDIX B

Statistical Analysis of Detection Monitoring Groundwater Quality Results

DOMINION ENERGY
SOUTH CAROLINA

WILLIAMS STATION
HIGHWAY 52 CLASS III LANDFILL

BERKELEY COUNTY, SOUTH CAROLINA

CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS REPORT

for the

March 2020 Sampling Event

Prepared on
August 13, 2020

Dominion Energy®

STATISTICAL ANALYSIS REPORT

Groundwater Sampling

In accordance with 40 CFR Part 257.94, the 2020 first semi-annual groundwater sampling event for Detection Monitoring at the Williams Highway 52 Class III Landfill began on March 12, 2020. This event included groundwater sampling and resampling from background monitoring wells MW-LF-10, MW-LF-11, MW-LF-27, and MW-LF-28; and the downgradient compliance monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25, and MW-LF-26. The groundwater samples were analyzed for the constituents listed in Appendix III of the EPA CCR Rule which include Boron, Calcium, Chloride, Fluoride, pH, Sulfate, and Total Dissolved Solids.

Statistical Analysis

The statistical analysis indicates that the concentrations of boron in the groundwater samples collected from monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D and MW-LF-23D; the concentrations of calcium in the groundwater samples collected from monitoring wells MW-LF-20, MW-LF-21, MW-LF-24, MW-LF-25 and MW-LF-26; concentration of chloride in the groundwater sample collected from monitoring well MW-LF-26; the concentration of fluoride in the groundwater sample collected from monitoring well MW-LF-25; the concentrations of sulfate in the groundwater samples collected from monitoring wells MW-LF-22D, MW-LF-23D, MW-LF-25 and MW-LF-26; and concentrations of Total Dissolved Solids in the groundwater samples collected from monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25, and MW-LF-26 show statistically significant increases (SSI) above background concentrations. No other statistically significant increases above/below background concentrations were observed for the CCR Rule Appendix III constituents in the groundwater samples collected from the Class III Landfill monitoring wells during the March 2020 Detection Monitoring event.

Monitoring Well	Parameters Presenting SSIs
MW-LF-20	Boron, Calcium, Total Dissolved Solids.
MW-LF-21	Boron, Calcium, Total Dissolved Solids.
MW-LF-22D	Boron, Sulfate, Total Dissolved Solids.
MW-LF-23D	Boron, Sulfate, Total Dissolved Solids.
MW-LF-24	Calcium, Total Dissolved Solids.
MW-LF-25	Calcium, Fluoride, Sulfate, Total Dissolved Solids.
MW-LF-26	Calcium, Chloride, Sulfate, Total Dissolved Solids.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 1

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09422	1 of 2	0.053	0.242	y	n	Downward
Boron, total mg/L	05/12/2020	BA09858	1 of 2	0.053	0.228	y	y	Downward

Run Id: 2

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09422	1 of 2	94.600	157.000	y	n	None
Ca mg/L	05/12/2020	BA09858	1 of 2	94.600	165.000	y	y	None

Run Id: 3

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09393	1 of 2	28.60	11.60	n	n	--
Chlorides mg/L	05/12/2020	BA09838	1 of 2	28.60	11.34	n	n	--

Run Id: 4

Location Id: **MW-LF-20**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 4

Location Id: **MW-LF-20**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.600	n/n	n	--
Field pH S.U.	05/12/2020	FLD20200512	1 of 2	7.785	5.665	6.600	n/n	n	--

Run Id: 5

Location Id: **MW-LF-20**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09393	1 of 2	0.572	0.240	n	n	--
Fluoride, total mg/L	05/12/2020	BA09838	1 of 2	0.572	0.220	n	n	--

Run Id: 6

Location Id: **MW-LF-20**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09393	1 of 2	24.956	7.660	n	n	--
SO4 mg/L	05/12/2020	BA09838	1 of 2	24.956	7.430	n	n	--

Run Id: 7

Location Id: **MW-LF-20**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 7

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09393	1 of 2	382.000	671.000	y	n	None
Total Dissolved Solids mg/L	05/12/2020	BA09838	1 of 2	382.000	626.000	y	y	None

Run Id: 8

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09421	1 of 2	0.053	0.233	y	n	Downward
Boron, total mg/L	05/13/2020	BA09860	1 of 2	0.053	0.212	y	y	Downward

Run Id: 9

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09421	1 of 2	94.600	132.000	y	n	None
Ca mg/L	05/13/2020	BA09860	1 of 2	94.600	140.000	y	y	None

Run Id: 10

Location Id: **MW-LF-21**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 10

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09392	1 of 2	28.60	11.00	n	n	--
Chlorides mg/L	05/13/2020	BA09840	1 of 2	28.60	11.00	n	n	--

Run Id: 11

Location Id: **MW-LF-21**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.600	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	6.600	n/n	n	--

Run Id: 12

Location Id: **MW-LF-21**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09392	1 of 2	0.572	0.240	n	n	--
Fluoride, total mg/L	05/13/2020	BA09840	1 of 2	0.572	0.230	n	n	--

Run Id: 13

Location Id: **MW-LF-21**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 13

Location Id: **MW-LF-21**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09392	1 of 2	24.956	8.130	n	n	--
SO4 mg/L	05/13/2020	BA09840	1 of 2	24.956	7.880	n	n	--

Run Id: 14

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09392	1 of 2	382.000	643.000	y	n	None
Total Dissolved Solids mg/L	05/13/2020	BA09840	1 of 2	382.000	615.000	y	y	None

Run Id: 15

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09420	1 of 2	0.053	0.384	y	n	Downward
Boron, total mg/L	05/13/2020	BA09861	1 of 2	0.053	0.348	y	y	Downward

Run Id: 16

Location Id: **MW-LF-22D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 16

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09420	1 of 2	94.600	86.100	n	n	--
Ca mg/L	05/13/2020	BA09861	1 of 2	94.600	86.500	n	n	--

Run Id: 17

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09391	1 of 2	28.60	10.50	n	n	--
Chlorides mg/L	05/13/2020	BA09841	1 of 2	28.60	10.50	n	n	--

Run Id: 18

Location Id: **MW-LF-22D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	7.000	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	7.000	n/n	n	--

Run Id: 19

Location Id: **MW-LF-22D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 19

Location Id: **MW-LF-22D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09391	1 of 2	0.572	0.300	n	n	--
Fluoride, total mg/L	05/13/2020	BA09841	1 of 2	0.572	0.310	n	n	--

Run Id: 20

Location Id: **MW-LF-22D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09391	1 of 2	24.956	44.400	y	n	Downward
SO4 mg/L	05/13/2020	BA09841	1 of 2	24.956	45.200	y	y	Downward

Run Id: 21

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09391	1 of 2	382.000	585.000	y	n	None
Total Dissolved Solids mg/L	05/13/2020	BA09841	1 of 2	382.000	587.000	y	y	None

Run Id: 22

Location Id: **MW-LF-23D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 22

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09418	1 of 2	0.053	0.333	y	n	Downward
Boron, total mg/L	05/13/2020	BA09862	1 of 2	0.053	0.314	y	y	Downward

Run Id: 23

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09418	1 of 2	94.600	73.000	n	n	--
Ca mg/L	05/13/2020	BA09862	1 of 2	94.600	73.700	n	n	--

Run Id: 24

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09389	1 of 2	28.60	15.50	n	n	--
Chlorides mg/L	05/13/2020	BA09842	1 of 2	28.60	15.30	n	n	--

Run Id: 25

Location Id: **MW-LF-23D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 25

Location Id: **MW-LF-23D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	7.100	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	7.100	n/n	n	--

Run Id: 26

Location Id: **MW-LF-23D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09389	1 of 2	0.572	0.410	n	n	--
Fluoride, total mg/L	05/13/2020	BA09842	1 of 2	0.572	0.390	n	n	--

Run Id: 27

Location Id: **MW-LF-23D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09389	1 of 2	24.956	25.200	y	n	Downward
SO4 mg/L	05/13/2020	BA09842	1 of 2	24.956	25.300	y	y	Downward

Run Id: 28

Location Id: **MW-LF-23D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 28

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09389	1 of 2	382.000	528.000	y	n	Upward
Total Dissolved Solids mg/L	05/13/2020	BA09842	1 of 2	382.000	499.000	y	y	Upward

Run Id: 29

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09416	1 of 2	0.053	< 0.200	n	n	--
Boron, total mg/L	05/13/2020	BA09864	1 of 2	0.053	< 0.200	n	n	--

Run Id: 30

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09416	1 of 2	94.600	124.000	y	n	Downward
Ca mg/L	05/13/2020	BA09864	1 of 2	94.600	131.000	y	y	Downward

Run Id: 31

Location Id: **MW-LF-24**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 31

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09387	1 of 2	28.60	19.50	n	n	--
Chlorides mg/L	05/13/2020	BA09844	1 of 2	28.60	19.20	n	n	--

Run Id: 32

Location Id: **MW-LF-24**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.300	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	6.400	n/n	n	--

Run Id: 33

Location Id: **MW-LF-24**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09387	1 of 2	0.572	0.470	n	n	--
Fluoride, total mg/L	05/13/2020	BA09844	1 of 2	0.572	0.490	n	n	--

Run Id: 34

Location Id: **MW-LF-24**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 34

Location Id: **MW-LF-24**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09387	1 of 2	24.956	14.700	n	n	--
SO4 mg/L	05/13/2020	BA09844	1 of 2	24.956	13.700	n	n	--

Run Id: 35

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09387	1 of 2	382.000	497.000	y	n	None
Total Dissolved Solids mg/L	05/13/2020	BA09844	1 of 2	382.000	482.000	y	y	None

Run Id: 36

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09417	1 of 2	0.053	< 0.200	n	n	--
Boron, total mg/L	05/13/2020	BA09863	1 of 2	0.053	< 0.200	n	n	--

Run Id: 37

Location Id: **MW-LF-25**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 37

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09417	1 of 2	94.600	157.000	y	n	Upward
Ca mg/L	05/13/2020	BA09863	1 of 2	94.600	165.000	y	y	Upward

Run Id: 38

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09388	1 of 2	28.60	21.20	n	n	--
Chlorides mg/L	05/13/2020	BA09843	1 of 2	28.60	20.30	n	n	--

Run Id: 39

Location Id: **MW-LF-25**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.700	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	6.700	n/n	n	--

Run Id: 40

Location Id: **MW-LF-25**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 40

Location Id: **MW-LF-25**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09388	1 of 2	0.572	0.840	y	n	Upward
Fluoride, total mg/L	05/13/2020	BA09843	1 of 2	0.572	0.750	y	y	Upward

Run Id: 41

Location Id: **MW-LF-25**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09388	1 of 2	24.956	215.000	y	n	Upward
SO4 mg/L	05/13/2020	BA09843	1 of 2	24.956	216.000	y	y	Upward

Run Id: 42

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09388	1 of 2	382.000	792.000	y	n	Upward
Total Dissolved Solids mg/L	05/13/2020	BA09843	1 of 2	382.000	770.000	y	y	Upward

Run Id: 43

Location Id: **MW-LF-26**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 43

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09414	1 of 2	0.053	< 0.200	n	n	--
Boron, total mg/L	05/13/2020	BA09865	1 of 2	0.053	< 0.200	n	n	--

Run Id: 44

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09414	1 of 2	94.600	179.000	y	n	Upward
Ca mg/L	05/13/2020	BA09865	1 of 2	94.600	183.000	y	y	Upward

Run Id: 45

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09385	1 of 2	28.60	146.00	y	n	Downward
Chlorides mg/L	05/13/2020	BA09845	1 of 2	28.60	149.00	y	y	Downward

Run Id: 46

Location Id: **MW-LF-26**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 46

Location Id: **MW-LF-26**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.100	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	6.100	n/n	n	--

Run Id: 47

Location Id: **MW-LF-26**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09385	1 of 2	0.572	0.250	n	n	--
Fluoride, total mg/L	05/13/2020	BA09845	1 of 2	0.572	0.220	n	n	--

Run Id: 48

Location Id: **MW-LF-26**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09385	1 of 2	24.956	75.000	y	n	None
SO4 mg/L	05/13/2020	BA09845	1 of 2	24.956	73.800	y	y	None

Run Id: 49

Location Id: **MW-LF-26**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 49

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09385	1 of 2	382.000	937.000	y	n	Upward
Total Dissolved Solids mg/L	05/13/2020	BA09845	1 of 2	382.000	924.000	y	y	Upward

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

Background Locations: **MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28**

Insufficient Background: 0
DQR Tests: 0

Parameter Name:	**Field pH, S.U.**	Background Date Range:	05/10/2016 to 05/13/2020
Alpha Per Test FPR:	0.00107	Option for LT Pts:	0% to <= 15% Substitute ½ PQL
Total Pts	59	Kappa for Selected Verification Plan:	2.070
LT Pts	0	Mean	6.725
%LT Pts	0.00	StdDev	0.512
Normal/Log Normal	y/y	ln Mean	1.903
Log Transformed:	n	ln StdDev	0.075
Upper Limit:	7.785		
Lower Limit:	5.665		

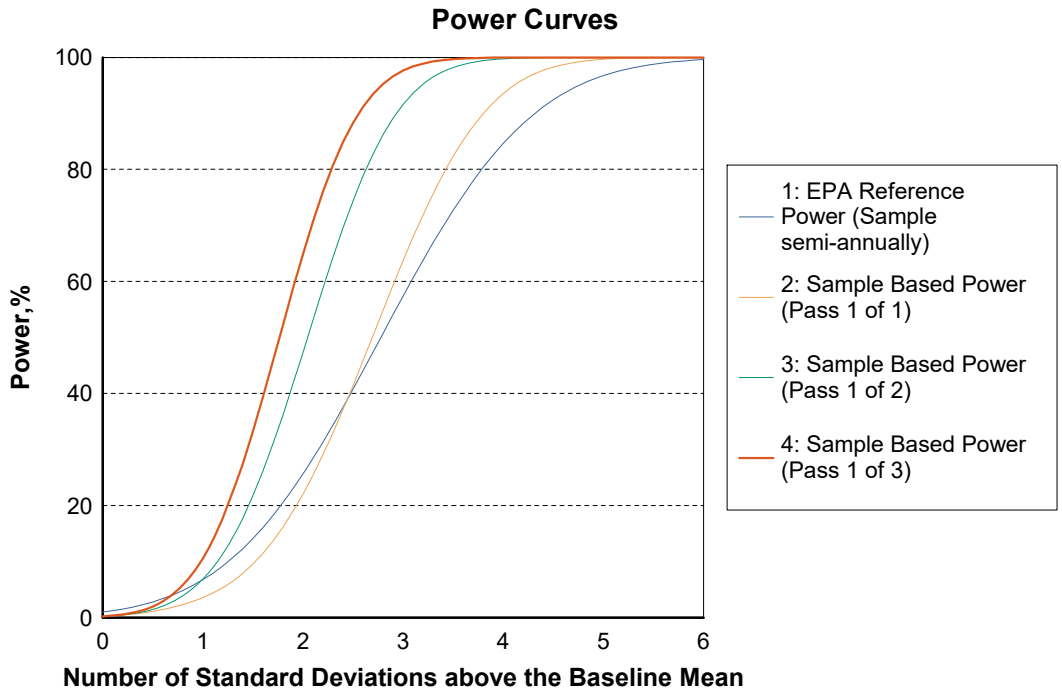
Parameter Name:	**Fluoride, total, mg/L**	Background Date Range:	05/10/2016 to 05/13/2020
Alpha Per Test FPR:	0.00107	Option for LT Pts:	> 15% to <= 50% Substitute Kaplan-Meier
Total Pts	59	Kappa for Selected Verification Plan:	1.896
LT Pts	9	Mean	0.273
%LT Pts	15.25	StdDev	0.158
Normal/Log Normal	y/y	ln Mean	-1.724
Log Transformed:	n	ln StdDev	1.271
Upper Limit:	0.572		
Lower Limit:	-0.027		

Parameter Name:	**SO4, mg/L**	Background Date Range:	05/10/2016 to 05/13/2020
Alpha Per Test FPR:	0.00107	Option for LT Pts:	0% to <= 15% Substitute ½ PQL
Total Pts	63	Kappa for Selected Verification Plan:	1.892
LT Pts	0	Mean	6.730
%LT Pts	0.00	StdDev	6.695
Normal/Log Normal	n/y	ln Mean	1.511
Log Transformed:	y	ln StdDev	0.902
Upper Limit:	24.956		
Lower Limit:	0.823		

Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

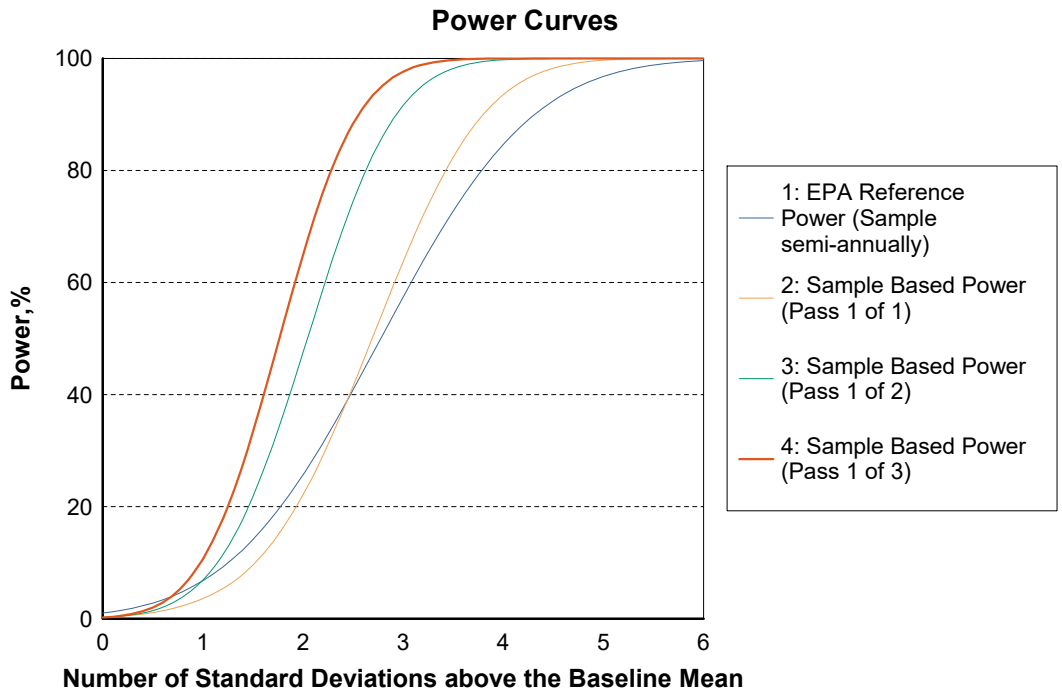
Power Curves (MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28 - Field pH, S.U.)



Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

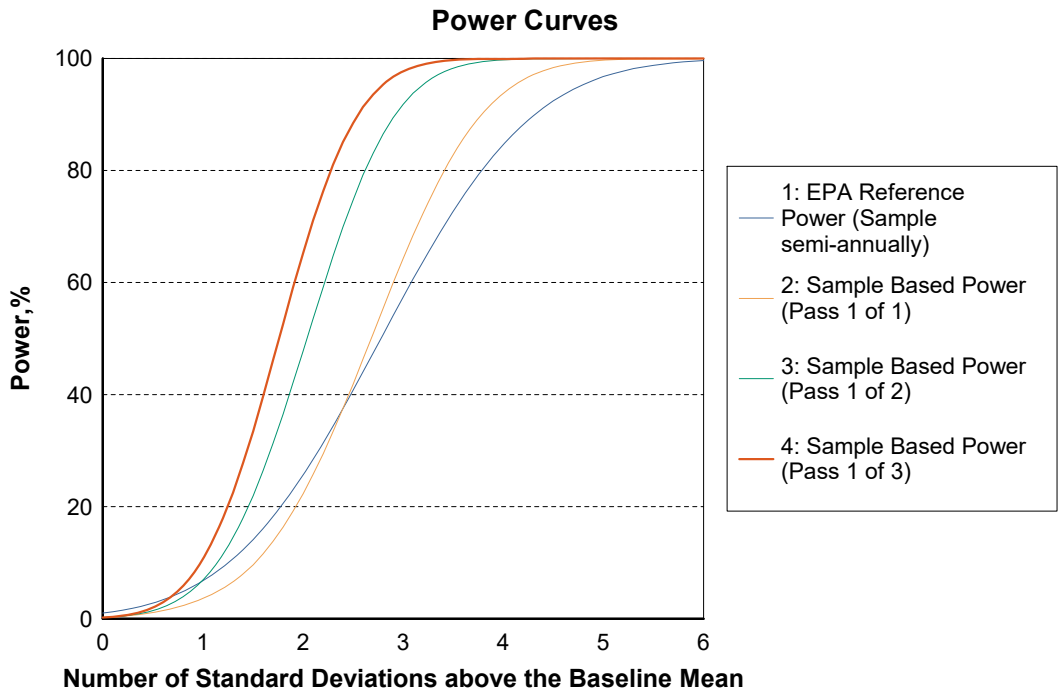
Power Curves (MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28 - Fluoride, total,



Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

Power Curves (MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28 - SO4, mg/L)



Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 1

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.62	0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	03/11/2020	0.242	y
MW-LF-20	05/12/2020	0.228	y

Run Id: 2

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.62	94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	03/11/2020	157	y
MW-LF-20	05/12/2020	165	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 3

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	03/11/2020	11.6	n
MW-LF-20	05/12/2020	11.34	n

Run Id: 7

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	03/11/2020	671	y
MW-LF-20	05/12/2020	626	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 8

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	03/11/2020	0.233	y
MW-LF-21	05/13/2020	0.212	y

Run Id: 9

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	03/11/2020	132	y
MW-LF-21	05/13/2020	140	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 10

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	03/11/2020	11	n
MW-LF-21	05/13/2020	11	n

Run Id: 14

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	03/11/2020	643	y
MW-LF-21	05/13/2020	615	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 15

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	03/11/2020	0.384	y
MW-LF-22D	05/13/2020	0.348	y

Run Id: 16

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	03/11/2020	86.1	n
MW-LF-22D	05/13/2020	86.5	n

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 17

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	03/11/2020	10.5	n
MW-LF-22D	05/13/2020	10.5	n

Run Id: 21

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	03/11/2020	585	y
MW-LF-22D	05/13/2020	587	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 22

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	03/11/2020	0.333	y
MW-LF-23D	05/13/2020	0.314	y

Run Id: 23

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	03/11/2020	73	n
MW-LF-23D	05/13/2020	73.7	n

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 24

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	03/11/2020	15.5	n
MW-LF-23D	05/13/2020	15.3	n

Run Id: 28

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	03/11/2020	528	y
MW-LF-23D	05/13/2020	499	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 29

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	03/11/2020	<0.2	n
MW-LF-24	05/13/2020	<0.2	n

Run Id: 30

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	03/11/2020	124	y
MW-LF-24	05/13/2020	131	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 31

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	03/11/2020	19.5	n
MW-LF-24	05/13/2020	19.2	n

Run Id: 35

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	03/11/2020	497	y
MW-LF-24	05/13/2020	482	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 36

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	03/11/2020	<0.2	n
MW-LF-25	05/13/2020	<0.2	n

Run Id: 37

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	03/11/2020	157	y
MW-LF-25	05/13/2020	165	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 38

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	03/11/2020	21.2	n
MW-LF-25	05/13/2020	20.3	n

Run Id: 42

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	03/11/2020	792	y
MW-LF-25	05/13/2020	770	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 43

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	03/11/2020	<0.2	n
MW-LF-26	05/13/2020	<0.2	n

Run Id: 44

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	03/11/2020	179	y
MW-LF-26	05/13/2020	183	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 45

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	03/11/2020	146	y
MW-LF-26	05/13/2020	149	y

Run Id: 49

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	03/11/2020	937	y
MW-LF-26	05/13/2020	924	y

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 1

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 69

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.138	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.268	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.605
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 2

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-4.303	mg/L per year
Lower Confidence Limit of Slope, M1:	-9.791	mg/L per year
Upper Confidence Limit of Slope, M2+1:	2.547	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.907
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 3

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.61	mg/L per year
Lower Confidence Limit of Slope, M1:	0.44	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.81	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.75
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 4

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	0.000	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.043	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.519
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 5

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.014	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.028	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.527
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 6

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-2.471	mg/L per year
Lower Confidence Limit of Slope, M1:	-4.134	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-1.590	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.325
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 7

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-5.120	mg/L per year
Lower Confidence Limit of Slope, M1:	-13.135	mg/L per year
Upper Confidence Limit of Slope, M2+1:	14.595	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.379
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 8

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 75

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.162	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.272	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.974
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 9

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.136	mg/L per year
Lower Confidence Limit of Slope, M1:	-3.784	mg/L per year
Upper Confidence Limit of Slope, M2+1:	4.398	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.041
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 10

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.34	mg/L per year
Lower Confidence Limit of Slope, M1:	0.11	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.63	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.69
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 11

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.066	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.864
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 12

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.021	mg/L per year
Lower Confidence Limit of Slope, M1:	0.001	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.031	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.732
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 13

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-1.235	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.039	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-0.495	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.913
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 14

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	14.274	mg/L per year
Lower Confidence Limit of Slope, M1:	-1.383	mg/L per year
Upper Confidence Limit of Slope, M2+1:	27.235	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.478
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 15

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 59

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.173	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.233	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.877
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 16

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-1.828	mg/L per year
Lower Confidence Limit of Slope, M1:	-4.138	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.188	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.442
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 17

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.06	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.05	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.13	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.04
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 18

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.030	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.081	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.066
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 19

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.003	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.003	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.017	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.860
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 20

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-9.858	mg/L per year
Lower Confidence Limit of Slope, M1:	-14.594	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-6.416	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.697
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 21

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	8.380	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.902	mg/L per year
Upper Confidence Limit of Slope, M2+1:	18.830	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.175
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 22

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 59

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.177	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.247	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.506
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 23

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	1.084	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.735	mg/L per year
Upper Confidence Limit of Slope, M2+1:	4.045	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.112
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 24

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.30	mg/L per year
Lower Confidence Limit of Slope, M1:	0.19	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.56	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.99
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 25

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.028	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.085	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.600
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 26

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.012	mg/L per year
Lower Confidence Limit of Slope, M1:	0.003	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.021	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.030
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 27

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-2.395	mg/L per year
Lower Confidence Limit of Slope, M1:	-3.173	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-1.764	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.243
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 28

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	16.416	mg/L per year
Lower Confidence Limit of Slope, M1:	6.818	mg/L per year
Upper Confidence Limit of Slope, M2+1:	25.419	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.727
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 29

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 94

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.204	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.281	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.986
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 30

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-5.075	mg/L per year
Lower Confidence Limit of Slope, M1:	-10.043	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-0.550	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.732
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 31

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.28	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.35	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.94	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.91
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 32

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.057	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.859
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 33

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.020	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.035	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.674
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 34

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-1.966	mg/L per year
Lower Confidence Limit of Slope, M1:	-6.524	mg/L per year
Upper Confidence Limit of Slope, M2+1:	1.245	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.783
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 35

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-6.949	mg/L per year
Lower Confidence Limit of Slope, M1:	-19.424	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.605	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.554
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 36

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 94

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.204	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.281	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.986
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 37

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	12.074	mg/L per year
Lower Confidence Limit of Slope, M1:	9.256	mg/L per year
Upper Confidence Limit of Slope, M2+1:	15.796	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.305
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 38

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.48	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.85	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.17	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.44
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 39

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.035	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.066	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.815
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 40

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.067	mg/L per year
Lower Confidence Limit of Slope, M1:	0.006	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.109	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.896
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 41

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	49.170	mg/L per year
Lower Confidence Limit of Slope, M1:	37.998	mg/L per year
Upper Confidence Limit of Slope, M2+1:	55.885	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.231
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 42

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	75.427	mg/L per year
Lower Confidence Limit of Slope, M1:	60.810	mg/L per year
Upper Confidence Limit of Slope, M2+1:	86.053	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.394
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 43

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 94

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.204	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.275	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.986
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 44

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	4.265	mg/L per year
Lower Confidence Limit of Slope, M1:	1.212	mg/L per year
Upper Confidence Limit of Slope, M2+1:	6.657	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.269
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 45

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-3.12	mg/L per year
Lower Confidence Limit of Slope, M1:	-4.82	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-1.85	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.92
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 46

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.063	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.605
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 47

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 13

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.026	mg/L per year
Lower Confidence Limit of Slope, M1:	0.010	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.046	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.746
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 48

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.854	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.876	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.110	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.478
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 49

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	15.780	mg/L per year
Lower Confidence Limit of Slope, M1:	6.387	mg/L per year
Upper Confidence Limit of Slope, M2+1:	21.937	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.504
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

DOMINION ENERGY
SOUTH CAROLINA

WILLIAMS STATION
HIGHWAY 52 CLASS III LANDFILL

BERKELEY COUNTY, SOUTH CAROLINA

CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS REPORT

for the

September 2020 Sampling Event

Prepared on
November 25, 2020

Dominion Energy®

STATISTICAL ANALYSIS REPORT

Groundwater Sampling

In accordance with 40 CFR Part 257.94, the 2020 second semi-annual groundwater sampling event for Detection Monitoring at the Williams Highway 52 Class III Landfill began on September 14, 2020. This event included groundwater sampling and resampling from background monitoring wells MW-LF-10, MW-LF-11, MW-LF-27, and MW-LF-28; and the downgradient compliance monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25, and MW-LF-26. The groundwater samples were analyzed for the constituents listed in Appendix III of the EPA CCR Rule which include Boron, Calcium, Chloride, Fluoride, pH, Sulfate, and Total Dissolved Solids.

Statistical Analysis

The statistical analysis indicates that the concentration of fluoride in the groundwater sample collected from monitoring well MW-LF-25; the concentrations of sulfate in the groundwater samples collected from monitoring wells MW-LF-22D, MW-LF-23D, MW-LF-25 and MW-LF-26; and concentrations of Total Dissolved Solids in the groundwater samples collected from monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25, and MW-LF-26 show statistically significant increases (SSI) above background concentrations. No other statistically significant increases above/below background concentrations were observed for the CCR Rule Appendix III constituents in the groundwater samples collected from the Class III Landfill monitoring wells during the September 2020 Detection Monitoring event.

Monitoring Well	Parameters Presenting SSIs
MW-LF-20	Total Dissolved Solids
MW-LF-21	Total Dissolved Solids
MW-LF-22D	Sulfate, Total Dissolved Solids
MW-LF-23D	Sulfate, Total Dissolved Solids
MW-LF-24	Total Dissolved Solids
MW-LF-25	Fluoride, Sulfate, Total Dissolved Solids
MW-LF-26	Sulfate, Total Dissolved Solids

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 1

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	09/15/2020	BA11193	1 of 2	0.053	< 0.500	n	n	--

Run Id: 2

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	09/15/2020	BA11193	1 of 2	69900.000	158.000	n	n	--
Ca mg/L	10/28/2020	BA11795	1 of 2	69900.000	136000.000	y	n	None

Run Id: 3

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	09/15/2020	BA11179	1 of 2	28.60	11.30	n	n	--

Run Id: 4

Location Id: **MW-LF-20**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/15/2020	FLD20200915	1 of 2	7.755	5.609	6.300	n/n	n	--

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 4

Location Id: **MW-LF-20**

Field pH S.U.	10/28/2020	FLD20201028	1 of 2	7.755	5.609	6.300	n/n	n	--

Run Id: 5

Location Id: **MW-LF-20**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	09/15/2020	BA11179	1 of 2	0.591	0.230	n	n	--

Run Id: 6

Location Id: **MW-LF-20**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	09/15/2020	BA11179	1 of 2	23.386	6.440	n	n	--

Run Id: 7

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	09/15/2020	BA11179	1 of 2	389.000	635.000	y	n	None
Total Dissolved Solids mg/L	10/28/2020	BA11779	1 of 2	389.000	678.000	y	y	None

Run Id: 8

Location Id: **MW-LF-21**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 8

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	09/15/2020	BA11194	1 of 2	0.053	< 0.500	n	n	--

Run Id: 9

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	09/15/2020	BA11194	1 of 2	69900.000	123.000	n	n	--
Ca mg/L	10/28/2020	BA11796	1 of 2	69900.000	122000.000	y	n	None

Run Id: 10

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	09/15/2020	BA11180	1 of 2	28.60	10.70	n	n	--

Run Id: 11

Location Id: **MW-LF-21**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/15/2020	FLD20200915	1 of 2	7.755	5.609	6.500	n/n	n	--

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 11

Location Id: **MW-LF-21**

Field pH S.U.	10/28/2020	FLD20201028	1 of 2	7.755	5.609	6.400	n/n	n	--

Run Id: 12

Location Id: **MW-LF-21**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	09/15/2020	BA11180	1 of 2	0.591	0.240	n	n	--

Run Id: 13

Location Id: **MW-LF-21**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	09/15/2020	BA11180	1 of 2	23.386	6.440	n	n	--

Run Id: 14

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	09/15/2020	BA11180	1 of 2	389.000	654.000	y	n	Upward
Total Dissolved Solids mg/L	10/28/2020	BA11780	1 of 2	389.000	646.000	y	y	Upward

Run Id: 15

Location Id: **MW-LF-22D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 15

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	09/15/2020	BA11195	1 of 2	0.053	< 0.500	n	n	--

Run Id: 16

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	09/15/2020	BA11195	1 of 2	69900.000	86.000	n	n	--

Run Id: 17

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	09/15/2020	BA11181	1 of 2	28.60	10.50	n	n	--

Run Id: 18

Location Id: **MW-LF-22D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/15/2020	FLD20200915	1 of 2	7.755	5.609	6.800	n/n	n	--
Field pH S.U.	10/28/2020	FLD20201028	1 of 2	7.755	5.609	6.600	n/n	n	--

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 19

Location Id: **MW-LF-22D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	09/15/2020	BA11181	1 of 2	0.591	0.300	n	n	--

Run Id: 20

Location Id: **MW-LF-22D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	09/15/2020	BA11181	1 of 2	23.386	42.500	y	n	Downward
SO4 mg/L	10/28/2020	BA11781	1 of 2	23.386	40.900	y	y	Downward

Run Id: 21

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	09/15/2020	BA11181	1 of 2	389.000	615.000	y	n	Upward
Total Dissolved Solids mg/L	10/28/2020	BA11781	1 of 2	389.000	611.000	y	y	Upward

Run Id: 22

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 22

Location Id: **MW-LF-23D**

Boron, total mg/L	09/16/2020	BA11197	1 of 2	0.053	< 0.500	n	n	--

Run Id: 23

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	09/16/2020	BA11197	1 of 2	69900.000	70.400	n	n	--

Run Id: 24

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	09/16/2020	BA11183	1 of 2	28.60	15.40	n	n	--

Run Id: 25

Location Id: **MW-LF-23D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/16/2020	FLD20200916	1 of 2	7.755	5.609	6.800	n/n	n	--
Field pH S.U.	10/29/2020	FLD20201029	1 of 2	7.755	5.609	6.800	n/n	n	--

Run Id: 26

Location Id: **MW-LF-23D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 26

Location Id: **MW-LF-23D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	09/16/2020	BA11183	1 of 2	0.591	0.370	n	n	--

Run Id: 27

Location Id: **MW-LF-23D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	09/16/2020	BA11183	1 of 2	23.386	24.600	y	n	Downward
SO4 mg/L	10/29/2020	BA11782	1 of 2	23.386	23.500	y	y	Downward

Run Id: 28

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	09/16/2020	BA11183	1 of 2	389.000	533.000	y	n	Upward
Total Dissolved Solids mg/L	10/29/2020	BA11782	1 of 2	389.000	539.000	y	y	Upward

Run Id: 29

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 29

Location Id: **MW-LF-24**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	09/16/2020	BA11199	1 of 2	0.053	< 0.500	n	n	--

Run Id: 30

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	09/16/2020	BA11199	1 of 2	69900.000	120.000	n	n	--
Ca mg/L	10/29/2020	BA11799	1 of 2	69900.000	111000.000	y	n	None

Run Id: 31

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	09/16/2020	BA11185	1 of 2	28.60	17.70	n	n	--

Run Id: 32

Location Id: **MW-LF-24**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/16/2020	FLD20200916	1 of 2	7.755	5.609	6.400	n/n	n	--
Field pH S.U.	10/29/2020	FLD20201029	1 of 2	7.755	5.609	6.400	n/n	n	--

Run Id: 33

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 33

Location Id: **MW-LF-24**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	09/16/2020	BA11185	1 of 2	0.591	0.550	n	n	--

Run Id: 34

Location Id: **MW-LF-24**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	09/16/2020	BA11185	1 of 2	23.386	8.670	n	n	--

Run Id: 35

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	09/16/2020	BA11185	1 of 2	389.000	538.000	y	n	None
Total Dissolved Solids mg/L	10/29/2020	BA11785	1 of 2	389.000	503.000	y	y	None

Run Id: 36

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	09/16/2020	BA11198	1 of 2	0.053	< 0.500	n	n	--

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 37

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	09/16/2020	BA11198	1 of 2	69900.000	152.000	n	n	--
Ca mg/L	10/29/2020	BA11798	1 of 2	69900.000	144000.000	y	n	Upward

Run Id: 38

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	09/16/2020	BA11184	1 of 2	28.60	20.80	n	n	--

Run Id: 39

Location Id: **MW-LF-25**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/16/2020	FLD20200916	1 of 2	7.755	5.609	6.600	n/n	n	--
Field pH S.U.	10/29/2020	FLD20201029	1 of 2	7.755	5.609	6.500	n/n	n	--

Run Id: 40

Location Id: **MW-LF-25**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 40

Location Id: **MW-LF-25**

Fluoride, total mg/L	09/16/2020	BA11184	1 of 2	0.591	0.740	y	n	Upward
Fluoride, total mg/L	10/29/2020	BA11784	1 of 2	0.591	0.790	y	y	Upward

Run Id: 41

Location Id: **MW-LF-25**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	09/16/2020	BA11184	1 of 2	23.386	223.000	y	n	Upward
SO4 mg/L	10/29/2020	BA11784	1 of 2	23.386	212.000	y	y	Upward

Run Id: 42

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	09/16/2020	BA11184	1 of 2	389.000	856.000	y	n	Upward
Total Dissolved Solids mg/L	10/29/2020	BA11784	1 of 2	389.000	830.000	y	y	Upward

Run Id: 43

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	09/16/2020	BA11200	1 of 2	0.053	< 0.500	n	n	--

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 44

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	09/16/2020	BA11200	1 of 2	69900.000	168.000	n	n	--
Ca mg/L	10/29/2020	BA11800	1 of 2	69900.000	171000.000	y	n	Upward

Run Id: 45

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	09/16/2020	BA11186	1 of 2	28.60	146.00	y	n	Downward

Run Id: 46

Location Id: **MW-LF-26**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/16/2020	FLD20200916	1 of 2	7.755	5.609	6.000	n/n	n	--
Field pH S.U.	10/29/2020	FLD20201029	1 of 2	7.755	5.609	6.000	n/n	n	--

Run Id: 47

Location Id: **MW-LF-26**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 47

Location Id: **MW-LF-26**

Fluoride, total mg/L	09/16/2020	BA11186	1 of 2	0.591	< 0.200	n	n	--
Fluoride, total mg/L	10/29/2020	BA11786	1 of 2	0.591	0.240	n	n	--

Run Id: 48

Location Id: **MW-LF-26**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	09/16/2020	BA11186	1 of 2	23.386	71.300	y	n	Downward
SO4 mg/L	10/29/2020	BA11786	1 of 2	23.386	69.200	y	y	Downward

Run Id: 49

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	09/16/2020	BA11186	1 of 2	389.000	954.000	y	n	Upward
Total Dissolved Solids mg/L	10/29/2020	BA11786	1 of 2	389.000	1002.000	y	y	Upward

SEP 2020

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

Background Locations: **MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28**

Insufficient Background: 0

DQR Tests: 0

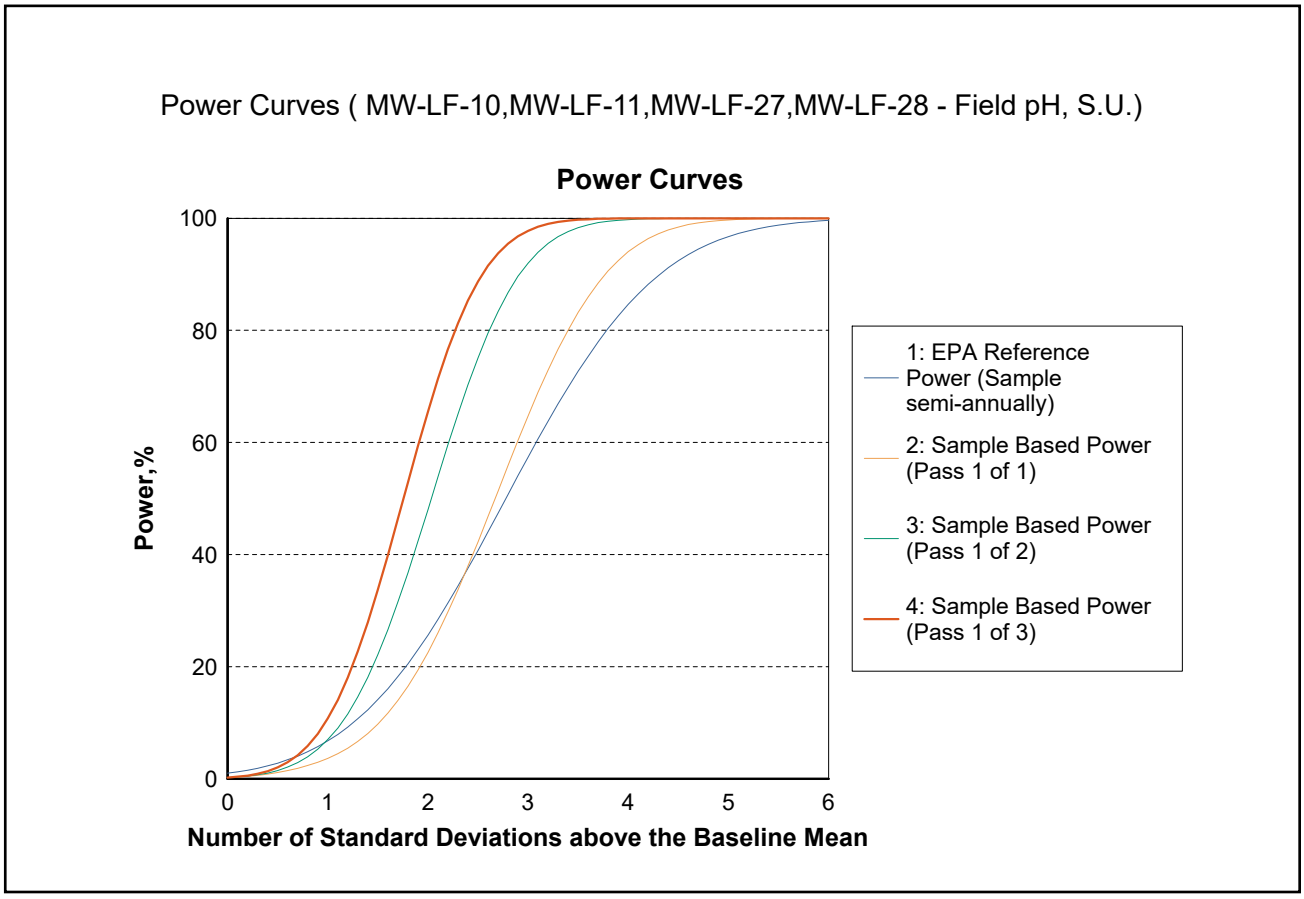
Parameter Name:	**Field pH, S.U.**	Background Date Range:	05/10/2016 to 10/29/2020
Alpha Per Test FPR:	0.00107	Option for LT Pts:	0% to <= 15% Substitute ½ PQL
Total Pts	67	Kappa for Selected Verification Plan:	2.063
LT Pts	0	Mean	6.682
%LT Pts	0.00	StdDev	0.520
Normal/Log Normal	y/y	ln Mean	1.896
Log Transformed:	n	ln StdDev	0.077
Upper Limit:	7.755		
Lower Limit:	5.609		

Parameter Name:	**Fluoride, total, mg/L**	Background Date Range:	05/10/2016 to 10/29/2020
Alpha Per Test FPR:	0.00107	Option for LT Pts:	> 15% to <= 50% Substitute Kaplan-Meier
Total Pts	67	Kappa for Selected Verification Plan:	1.889
LT Pts	11	Mean	0.277
%LT Pts	16.42	StdDev	0.166
Normal/Log Normal	y/n	ln Mean	-1.750
Log Transformed:	n	ln StdDev	1.337
Upper Limit:	0.591		
Lower Limit:	-0.036		

Parameter Name:	**SO4, mg/L**	Background Date Range:	05/10/2016 to 10/29/2020
Alpha Per Test FPR:	0.00107	Option for LT Pts:	0% to <= 15% Substitute ½ PQL
Total Pts	71	Kappa for Selected Verification Plan:	1.886
LT Pts	0	Mean	6.499
%LT Pts	0.00	StdDev	6.396
Normal/Log Normal	n/y	ln Mean	1.492
Log Transformed:	y	ln StdDev	0.880
Upper Limit:	23.386		
Lower Limit:	0.846		

Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

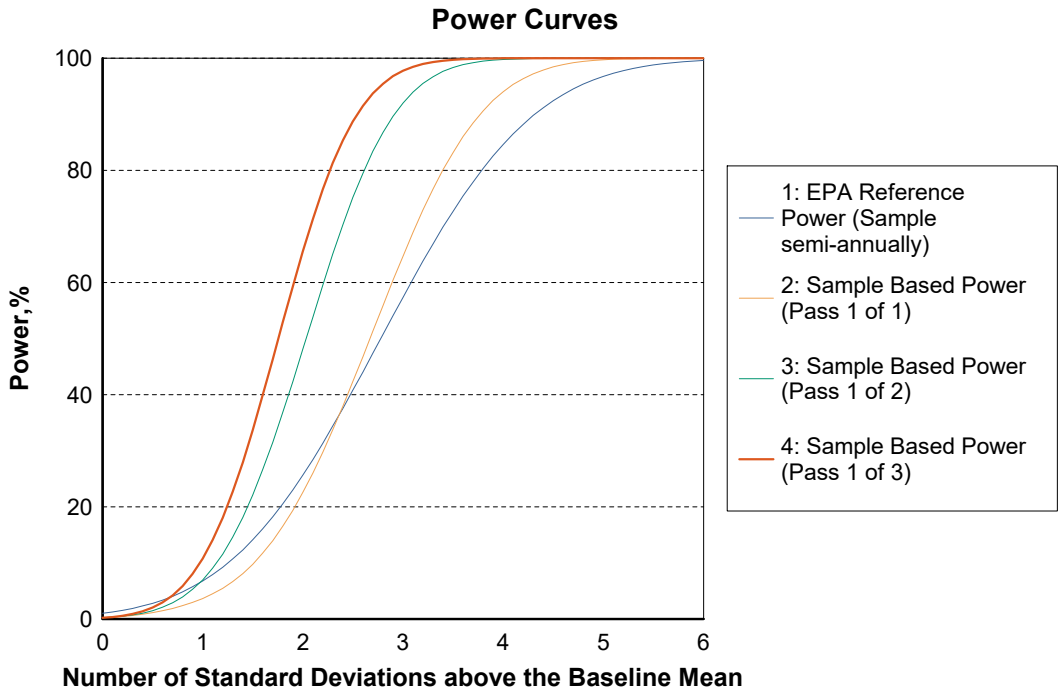
Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)



Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

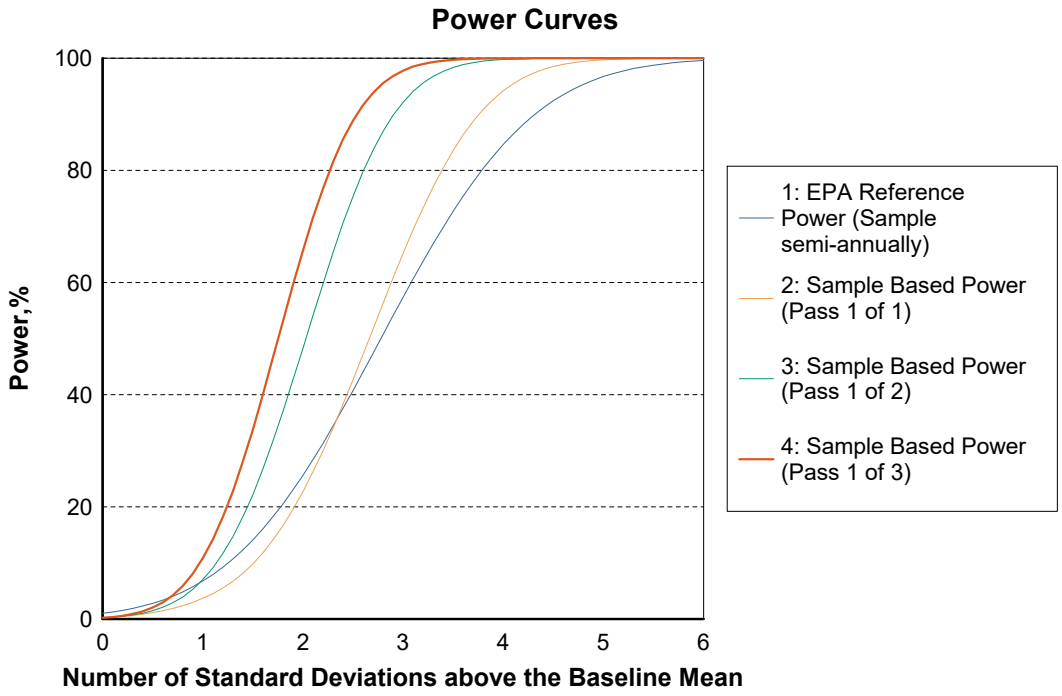
Power Curves (MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28 - Fluoride, total, mg/L)



Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

Power Curves (MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28 - SO4, mg/L)



Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 1

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	67	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.7
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	09/15/2020	<0.5	n

Run Id: 2

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	67	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.7
PU (Upper) Value: 69900.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	09/15/2020	158	n
MW-LF-20	10/28/2020	136000	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 3

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	09/15/2020	11.3	n

Run Id: 7

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 389.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	09/15/2020	635	y
MW-LF-20	10/28/2020	678	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 8

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	67	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.7
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	09/15/2020	<0.5	n

Run Id: 9

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	67	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.7
PU (Upper) Value: 69900.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	09/15/2020	123	n
MW-LF-21	10/28/2020	122000	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 10

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	09/15/2020	10.7	n

Run Id: 14

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 389.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	09/15/2020	654	y
MW-LF-21	10/28/2020	646	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 15

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	67	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.7
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	09/15/2020	<0.5	n

Run Id: 16

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	67	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.7
PU (Upper) Value: 69900.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	09/15/2020	86	n

Run Id: 17

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/10/2016** **to 10/29/2020**
Compliance Date Range: **09/01/2020** **to 11/30/2020**
No. of Verification Resamples: **1**

MW-LF-22D	09/15/2020	10.5	n

Run Id: 21

Background Locations: **MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, % **99.74**

PU (Upper) Value: **389.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	09/15/2020	615	y
MW-LF-22D	10/28/2020	611	y

Run Id: 22

Background Locations: **MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	67	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, % **99.7**

PU (Upper) Value: **0.053**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	09/16/2020	<0.5	n

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 23

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	67	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.7
PU (Upper) Value: 69900.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	09/16/2020	70.4	n

Run Id: 24

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	09/16/2020	15.4	n

Run Id: 28

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 389.000

Location	Sample Date	Sample Result	Greater than PU (Upper)

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/10/2016** **to 10/29/2020**
Compliance Date Range: **09/01/2020** **to 11/30/2020**
No. of Verification Resamples: **1**

MW-LF-23D	09/16/2020	533	y
MW-LF-23D	10/29/2020	539	y

Run Id: 29

Background Locations: **MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	67	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, % **99.7**
PU (Upper) Value: **0.053**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	09/16/2020	<0.5	n

Run Id: 30

Background Locations: **MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	67	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, % **99.7**
PU (Upper) Value: **69900.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	09/16/2020	120	n
MW-LF-24	10/29/2020	111000	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 31

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	09/16/2020	17.7	n

Run Id: 35

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 389.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	09/16/2020	538	y
MW-LF-24	10/29/2020	503	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 36

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	67	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.7
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	09/16/2020	<0.5	n

Run Id: 37

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	67	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.7
PU (Upper) Value: 69900.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	09/16/2020	152	n
MW-LF-25	10/29/2020	144000	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 38

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	09/16/2020	20.8	n

Run Id: 42

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.74
PU (Upper) Value: 389.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	09/16/2020	856	y
MW-LF-25	10/29/2020	830	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 43

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	67	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.7	0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	09/16/2020	<0.5	n

Run Id: 44

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	67	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.7	69900.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	09/16/2020	168	n
MW-LF-26	10/29/2020	171000	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 10/29/2020
Compliance Date Range: 09/01/2020 to 11/30/2020
No. of Verification Resamples: 1

Run Id: 45

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.74	28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	09/16/2020	146	y

Run Id: 49

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	71	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.74	389.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	09/16/2020	954	y
MW-LF-26	10/29/2020	1002	y

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 1

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 71

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.122	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.239	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.506
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 2

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 10/28/2020
Option for LT Points: 0% to <= 15% Substitute PQL
Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.288	mg/L per year
Lower Confidence Limit of Slope, M1:	-6.601	mg/L per year
Upper Confidence Limit of Slope, M2+1:	7.058	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.105
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 3

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.59	mg/L per year
Lower Confidence Limit of Slope, M1:	0.44	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.75	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.94
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 4

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 10/28/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.055	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.004	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.508
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 5

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.012	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.024	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.556
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 6

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-2.332	mg/L per year
Lower Confidence Limit of Slope, M1:	-3.397	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-1.536	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.621
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 7

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 10/28/2020
Option for LT Points: 0% to <= 15% Substitute PQL
Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	1.703	mg/L per year
Lower Confidence Limit of Slope, M1:	-6.429	mg/L per year
Upper Confidence Limit of Slope, M2+1:	15.027	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.292
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 8

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 76

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.126	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.242	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.834
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 9

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 10/28/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	1.008	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.413	mg/L per year
Upper Confidence Limit of Slope, M2+1:	5.729	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.560
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 10

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.29	mg/L per year
Lower Confidence Limit of Slope, M1:	0.09	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.50	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.51
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 11

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 10/28/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.032	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.071	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.748
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 12

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.019	mg/L per year
Lower Confidence Limit of Slope, M1:	0.001	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.028	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.745
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 13

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-1.197	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.021	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-0.606	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.242
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 14

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 10/28/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	16.206	mg/L per year
Lower Confidence Limit of Slope, M1:	4.885	mg/L per year
Upper Confidence Limit of Slope, M2+1:	24.605	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.111
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 15

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 61

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.144	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.210	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.718
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 16

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: 0% to <= 15% Substitute PQL
Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-1.105	mg/L per year
Lower Confidence Limit of Slope, M1:	-3.178	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.189	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.251
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 17

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: 0% to <= 15% Substitute PQL
Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.09	mg/L per year
Lower Confidence Limit of Slope, M1:	0.00	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.14	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.37
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 18

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 10/28/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.046	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.100	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.979
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 19

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 09/15/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.002	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.002	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.014	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.788
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 20

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 10/28/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-9.149	mg/L per year
Lower Confidence Limit of Slope, M1:	-11.751	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-6.001	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-5.224
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 21

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 10/28/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	12.688	mg/L per year
Lower Confidence Limit of Slope, M1:	2.159	mg/L per year
Upper Confidence Limit of Slope, M2+1:	22.600	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.013
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 22

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 61

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.131	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.227	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.383
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 23

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: 0% to <= 15% Substitute PQL
Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.773	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.458	mg/L per year
Upper Confidence Limit of Slope, M2+1:	3.378	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.136
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 24

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.30	mg/L per year
Lower Confidence Limit of Slope, M1:	0.17	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.47	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.17
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 25

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.054	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.095	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.573
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 26

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.009	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.020	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.735
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 27

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-2.204	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.720	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-1.753	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.688
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 28

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	17.584	mg/L per year
Lower Confidence Limit of Slope, M1:	10.491	mg/L per year
Upper Confidence Limit of Slope, M2+1:	24.719	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.536
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 29

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 94

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.128	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.253	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.836
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 30

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-4.073	mg/L per year
Lower Confidence Limit of Slope, M1:	-7.264	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.861	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.155
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 31

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.10	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.46	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.69	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.34
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 32

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.040	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.960
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 33

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.028	mg/L per year
Lower Confidence Limit of Slope, M1:	0.008	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.041	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.192
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 34

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-2.744	mg/L per year
Lower Confidence Limit of Slope, M1:	-6.547	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.356	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.364
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 35

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-3.748	mg/L per year
Lower Confidence Limit of Slope, M1:	-12.923	mg/L per year
Upper Confidence Limit of Slope, M2+1:	3.740	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.104
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 36

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 94

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.128	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.253	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.836
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 37

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	12.671	mg/L per year
Lower Confidence Limit of Slope, M1:	10.506	mg/L per year
Upper Confidence Limit of Slope, M2+1:	16.325	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.740
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 38

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.37	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.79	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.13	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.44
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 39

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.052	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.077	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.646
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 40

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.049	mg/L per year
Lower Confidence Limit of Slope, M1:	0.005	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.082	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.925
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 41

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	48.577	mg/L per year
Lower Confidence Limit of Slope, M1:	40.545	mg/L per year
Upper Confidence Limit of Slope, M2+1:	53.038	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.458
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 42

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	79.358	mg/L per year
Lower Confidence Limit of Slope, M1:	69.125	mg/L per year
Upper Confidence Limit of Slope, M2+1:	86.776	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.899
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 43

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 94

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.128	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.251	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.836
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 44

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	4.477	mg/L per year
Lower Confidence Limit of Slope, M1:	1.512	mg/L per year
Upper Confidence Limit of Slope, M2+1:	7.164	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.737
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 45

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 09/16/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-3.02	mg/L per year
Lower Confidence Limit of Slope, M1:	-4.38	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-1.84	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.09
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis Run Id: 46

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.050	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.187
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 47

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: > 15% to <= 50% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 17

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.019	mg/L per year
Lower Confidence Limit of Slope, M1:	0.007	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.032	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.579
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 48

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-1.249	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.563	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-0.500	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.272
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 49

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 10/29/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	19.078	mg/L per year
Lower Confidence Limit of Slope, M1:	11.235	mg/L per year
Upper Confidence Limit of Slope, M2+1:	25.811	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.150
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Nautilus Geologic Consulting, PLLC

APPENDIX C

Alternate Source Demonstration Report

ALTERNATE SOURCE DEMONSTRATION REPORT

EPA CCR RULE COMPLIANCE
MARCH 2020 MONITORING

DOMINION ENERGY SOUTH CAROLINA:
Williams Station: Class Three Landfill

September 2020

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Nautilus Geologic Consulting, PLLC

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1.0 INTRODUCTION

This document presents an Alternate Source Demonstration (ASD) in compliance with 40 CFR Part 257 Subpart D 257.94(e)(2) of the April 2015 EPA Coal Combustion Residuals (CCR) Rule (Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments; 40 CFR Part 257 Subpart D) with respect to the Dominion Energy South Carolina (DESC) Williams Station Highway 52 Class 3 Landfill in Goose Creek, Berkeley County, South Carolina (**Figures 1 and 2**). The Class 3 landfill is a CCR unit as defined in the EPA CCR Rule that receives both fly ash and FGD waste from DESC Williams Generating Station located in Gosse Creek, South Carolina, and includes a liner system consisting of a minimum 2-foot thick compacted clay with a maximum permeability of 1×10^{-7} cm/sec as well as a leachate collection system. Review of the statistical analysis of data from the Detection Monitoring event conducted in March 2020 indicates that statistically significant increases (SSIs) were observed for concentrations of boron, calcium, chloride, fluoride, sulfate and total dissolved solids (TDS) at various CCR Rule compliance monitoring wells. 40 CFR 257.94(e)(2) allows the owner or operator 90 days from the date of determination to demonstrate that a source other than the CCR unit caused the SSIs or that the apparent SSIs were from a source other than the CCR unit or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Pursuant to 40 CFR 257.94(e)(2), the following sections provide data to support the conclusion that the SSIs observed for the constituents cited above are attributable to a source other than the Class 3 landfill and are likely the result of natural variation in groundwater quality within the area of the landfill.

2.0 GROUNDWATER MONITORING WELL SYSTEM

Eleven Type II groundwater monitoring wells (designated MW-LF-20 through MW-LF-28, MW-LF-22D and MW-LF-23D) were installed at Williams Station Highway 52 Class Three Landfill in March, April and November 2016 to serve as EPA CCR Rule Compliance monitoring wells. Seven of the Type II groundwater monitoring wells (MW-LF-20 through GW-26) were initially installed at the site in March 2016. Subsequent groundwater gauging indicated that the volume of groundwater in wells MW-LF-22 and MW-LF-23 was insufficient to allow for collection of representative groundwater samples from the wells. Consequently, replacement wells were installed to greater depths immediately adjacent to MW-LF-22 and MW-LF-23 in April 2016 to penetrate deeper into the surficial aquifer and allow for collection of representative groundwater samples at those locations. The replacement wells are designated MW-LF-22D and MW-LF-23D, respectively. Two additional background monitoring wells, designated MW-LF-27 and MW-LF-28, were installed at the site in November 2016 at locations hydraulically up gradient of the landfill. Rising head permeability (slug) tests were conducted at monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25 and MW-LF-26, as well as at existing monitoring well MW-LF-10, in May 2016; additional slug tests were conducted at monitoring wells MW-LF-27 and MW-LF-28 in January 2017. A site location map is presented as **Figure 1** and a site map showing the locations and designations of the monitoring wells at Williams Station Highway 52 Landfill is presented as **Figure 2**. A South Carolina licensed well driller with S&ME, Inc. of Wilmington, North Carolina (SC License #1583) performed the drilling and installation of monitoring wells MW-LF-20 through MW-LF-26. A South Carolina licensed well driller with Red Dog Drilling, LLC of Charlotte, North Carolina (SC License #1230) performed the drilling and installation of monitoring wells MW-LF-22D, MW-LF-23D, MW-LF-27 and MW-LF-28. A South Carolina registered surveyor from the GEL Group, Inc. of Charleston, South Carolina (ELS SC license #15513) surveyed the monitoring wells for horizontal position, ground surface elevation and top of PVC pipe elevation.

The Type II groundwater monitoring wells were installed to monitor groundwater quality in the vicinity of the Class Three Landfill in compliance with the groundwater monitoring requirements of the US EPA CCR Rule (40 CFR Part 257.93). In addition, existing monitoring wells MW-LF-10 and MW-LF-11 are included as part of the monitoring well network for US EPA CCR Rule groundwater monitoring. Monitoring well construction data and specifications are presented in **Table 1**. The locations and designations of the

monitoring wells are shown in **Figure 2**. Monitoring wells MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28, serve as up-gradient wells to monitor the quality of background groundwater in the surficial aquifer entering the area of the Class Three Landfill. The remaining monitoring wells (MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25 and MW-LF-26) serve as down gradient wells to monitor the quality of groundwater down gradient of the Class Three Landfill.

3.0 GROUNDWATER MONITORING

3.1 Groundwater Sampling

In accordance with 40 CFR Part 257.94, the sixth round of Detection Monitoring was conducted in March 2020 and included groundwater sampling from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D. MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28. One groundwater sample was collected from each of the monitoring wells during the Detection Monitoring event. All groundwater samples collected from the monitoring wells for the March 2020 Detection Monitoring event were analyzed by a South Carolina Certified laboratory (DESC Central Laboratory (Certification Number 32006)) for the constituents listed in Appendix III of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107), as well as total alkalinity, magnesium, potassium and sodium.

Based on the results of the March 2020 Detection Monitoring results, groundwater was resampled for field and laboratory analysis from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D. MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28 in May 2020 to confirm the September 2020 laboratory analytical results and supplement the site water quality database for statistical analysis. All groundwater samples collected during the May 2020 resampling event were analyzed by a South Carolina Certified laboratory (DESC Central Laboratory) for boron, calcium, chloride, fluoride, sulfate, TDS, total alkalinity, magnesium, potassium and sodium.

3.2 Results of Field and Laboratory Analyses of Groundwater Samples

The results of the field and laboratory analyses of the groundwater samples collected from the monitoring wells during the independent rounds of monitoring conducted during the period of May 2016 through July 2017, the first six rounds of Detection Monitoring conducted in September 2017, March and September 2018, March and September 2019, and March 2020, as well as supplemental groundwater monitoring conducted in November 2018, May and November 2019, and May 2020, and additional monitoring of landfill leachate and surface water from on-site treatment and storm water ponds, are presented in **Table 2**. Copies of the laboratory report forms for the groundwater samples collected during the sixth round of Detection Monitoring conducted in March 2020, as well as the supplemental groundwater and leachate samples collected in May 2020, are included in **Appendix A**.

Statistical analysis to compare the groundwater quality in the downgradient monitoring wells to that of background water quality for the March 2020 Detection Monitoring event was completed on August 13, 2020 by DESC. The results of the statistical analysis are presented in **Appendix B**. The results of the statistical analysis indicate that the concentrations of boron in the groundwater samples collected from compliance monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D and MW-LF-23D, calcium in the groundwater samples collected from MW-LF-20 and MW-LF-21, chloride in the groundwater sample collected from compliance monitoring well MW-LF-26, fluoride in the groundwater sample collected from compliance monitoring well MW-LF-25, sulfate in the groundwater samples collected from compliance monitoring wells MW-LF-22D, MW-LF-23D, MW-LF-25 and MW-LF-26 show statistically significant increases over background concentrations. In addition, the results of the statistical analysis indicate that the concentrations of TDS in the groundwater samples collected from compliance monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25 and MW-LF-26 show statistically significant increases over background concentrations. No other statistically significant increases over background concentrations were observed for the CCR Rule Appendix III constituents in the groundwater samples collected from the monitoring wells during the March 2020 Detection Monitoring event.

Isoconcentration contour maps of boron, calcium, chloride, fluoride, sulfate and TDS in groundwater based on groundwater quality data from March 2020 Detection Monitoring event are presented as **Figures 3** through **8**, respectively. The boron isoconcentration contour map in **Figure 3** shows the highest concentrations of boron at the locations of MW-LF-22D and MW-LF-23D and generally elevated concentrations of boron, relative to background locations, along the southeastern and southern boundaries of the Class 3 landfill. The calcium isoconcentration contour map in **Figure 4** shows the highest concentrations of calcium at the locations of MW-LF-20, MW-LF-21, MW-LF-24, MW-LF-25 and MW-LF-26, and generally elevated concentrations of calcium, relative to background locations, along the eastern and southern boundaries of the Class 3 landfill. The chloride isoconcentration contour map in **Figure 5** shows the highest concentration of chloride at the location of MW-LF-26, with concentrations of chloride at the remaining down gradient compliance monitoring wells that are similar to those at the locations of the background monitoring wells. The fluoride isoconcentration contour map in **Figure 6** shows a fluoride concentration at the location of MW-LF-25 that is slightly elevated relative to background locations, with concentrations of fluoride at the remaining down gradient compliance monitoring wells that are similar to those at the locations of the

background monitoring wells. The sulfate isoconcentration contour map in **Figure 7** shows the highest concentration of sulfate at the location of MW-LF-25, and generally elevated concentrations of sulfate, relative to background locations, near the southeastern corner of the Class 3 landfill and at the location of monitoring well MW-LF-26. The TDS isoconcentration contour map in **Figure 8** shows the highest concentration of TDS at the location of MW-LF-26, and elevated concentrations of TDS, relative to background locations, along the eastern and southern boundaries of the Class 3 landfill.

It is noted that the Class 3 landfill includes a liner system consisting of a minimum 2-foot thick compacted clay with a maximum permeability of 1 x 10^{-7} cm/sec as well as a leachate collection system. Moreover, no physical evidence of leakage (e.g., seeps around the perimeter berm) has been observed at the Class 3 landfill since its construction. These observations, as well as the detection of only low concentrations of boron in groundwater at the down gradient compliance monitoring wells (<385 μg/L), while boron has been shown to be present at significantly elevated concentrations (approximately 13,000 to 21,500 μg/L) in the landfill leachate (see **Section 4.1**), raise significant doubt that the SSIs for boron, calcium, chloride, fluoride, sulfate and TDS based on the March 2020 Detection Monitoring data were caused by a release of leachate from the landfill.

3.3 Groundwater Flow

The direction and rate of groundwater flow have been delineated numerous times in the vicinity of the Williams Station Highway 52 landfill as part of routine groundwater quality monitoring compliance. These delineations indicate that bulk shallow groundwater flow is generally to the east-southeast to east across the landfill. A water-table elevation contour map derived from the groundwater elevation measurements recorded during Detection Monitoring in March 2020 is presented as **Figure 9**. The water-table elevation contours in **Figure 9** indicate that bulk shallow groundwater flow is generally to the east-southeast to east across the landfill, which is consistent with previous delineations of groundwater flow direction at the site.

Determinations of groundwater elevations and flow direction at Williams Station Highway 52 Landfill based on groundwater gauging data collected from CCR Rule monitoring wells has typically shown irregular and complex flow patterns to the east-southeast of the landfill, hydraulically up gradient from the landfill runoff pond. In

particular, groundwater elevations at monitoring wells GW-23D, GW-24 and GW-25 appear to be anomalously high when compared to the overall trend of the potentiometric surface. Relative differences in hydraulic conductivity in the very tight and sparsely conductive soils at the site are largely responsible for the localized anomalies in groundwater elevation and, hence, flow direction.

The hydraulic gradient in the vicinity of each well, based on the September 2019 groundwater gauging data, was derived by dividing the elevation difference between water table elevations measured at the monitoring wells and proximal water-table elevation contour lines by the perpendicular horizontal distance between the wells and contours depicted in **Figure 9**. Results of in-situ slug testing conducted in May 2016 and January 2017 indicate hydraulic conductivity values in the surficial aquifer in the vicinity of the CCR Rule compliance monitoring wells ranging from 1.71×10^{-6} cm/s to 8.97×10^{-4} cm/s (approximately 0.005 ft./day to 2.54 ft./day). Using the horizontal hydraulic gradient measurements, the individual estimates of hydraulic conductivity, and estimated effective porosity values ranging from 0.07 to 0.10, the range of average interstitial groundwater flow velocities for the shallow surficial aquifer was calculated using the following formula:

$$v_x = (K/n_e) \cdot \frac{dh}{dl}$$

Where:

v_x = average interstitial groundwater flow velocity
K = hydraulic conductivity
n_e = effective porosity
dh/dl = horizontal hydraulic gradient

Average groundwater flow velocities calculated for March 2020 are estimated to range between approximately 0.0002 to 0.198 feet/day, with a geometric mean velocity of 0.006 ft./day. These results are consistent with previous delineations of groundwater flow rate at the site.

4.0 EVIDENCE OF AN ALTERNATE SOURCE FOR OBSERVED SSIs

4.1 Key Indicators

The Electric Power Research Institute (EPRI) defines key indicators for the presence of CCR leachate in groundwater at compliance monitoring wells as:

- constituents that typically have high concentrations in leachate, relative to background, such that they are expected to have elevated concentrations in groundwater in the event of a release; and
- are not reactive, and have high mobility in groundwater such that they are expected to be at the leading edge of the plume, meaning that they will have elevated concentrations relative to background across the entire area of the plume.[1]

Both boron and sulfate are key indicators of the presence of coal ash leachate in groundwater, and sulfate is a key indicator of FGD waste leachate in groundwater.[1] Other non-reactive, highly mobile substances can also be primary indicators of coal ash (e.g., molybdenum from fly ash derived from bituminous coal) or FGD waste leachate (e.g., boron and chloride derived from unwashed FGD waste) under certain circumstances.[1]

Collection and laboratory analysis of landfill leachate provides useful data for an ASD evaluation with respect to identifying the leachate chemical fingerprint and whether key indicator constituents are present in the leachate at concentrations that are higher than those in background groundwater and can, therefore, potentially cause SSIs if released to groundwater.[1] Landfill leachate was collected for laboratory analysis in October and November 2017, September 2018 and March 2019, and analyzed for all of the constituents listed in Appendix III and Appendix IV of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107) except Radium 226/228, as well as total alkalinity, iron, magnesium, potassium and sodium. A sample of landfill leachate was also collected in November 2018 and analyzed for all of the constituents listed in Appendix III and Appendix IV of the EPA CCR Rule, as well as total alkalinity, iron, magnesium, potassium and sodium. In addition, samples of landfill leachate were collected in March and May 2020 and analyzed for all of the constituents listed in Appendix III of the EPA CCR Rule, as well as total alkalinity, iron, magnesium, potassium and sodium (the

[1] Electric Power Research Institute, 2017. *Guidelines for Development of Alternate Source Demonstrations at Coal Combustion Residual Sites*; EPRI, Palo Alto, CA: 3002010920; 132 pp.

March 2020 sample was also analyzed for lithium). The samples were collected directly from the landfill leachate outfall into laboratory containers. The results of analysis of the leachate samples are presented in **Table 2**. The laboratory analytical results indicate that the leachate contained concentrations of boron, calcium, chloride, fluoride, sulfate and TDS (constituents triggering SSIs in groundwater at down gradient compliance monitoring wells) that are significantly in excess of the concentrations of these constituents measured in groundwater at the background CCR Rule compliance monitoring wells (MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28) since the inception of monitoring in May 2016 (**Table 2**). Therefore, a release of leachate to groundwater from the landfill could potentially cause SSIs for these constituents.

It is notable that the landfill leachate samples collected to date contained significantly elevated concentrations of boron (12,900 to 21,400 μg/L), whereas boron was only detected at low concentrations in groundwater at the down gradient compliance monitoring wells (<385 μg/L) and background monitoring wells (<38.458 to 46.5 μg/L, estimated) during the March 2020 Detection Monitoring event. In addition, boron was reported in groundwater within a similar range of concentrations at both up gradient and down gradient CCR Rule compliance monitoring wells during the September 2018, and March and September 2019 Detection Monitoring events, as well as the November 2018, May 2019 and May 2020 supplemental monitoring events.

The lithology of the sediments within which the CCR rule compliance monitoring wells are installed is predominantly calcareous marine clay. Clay-rich marine sediments are typically enriched in boron and groundwater within these sediments is likewise typically enriched in boron due to leaching from the sediments.[2] The only significant mechanism typically affecting the fate of boron in groundwater is adsorption-desorption reactions with aquifer sediment.[2] However, in natural waters, boron forms highly soluble and stable species that are not easily removed from solution by natural mechanisms and tend to move with groundwater largely by advection and dispersion. Therefore, low levels of boron in groundwater at the site are not unexpected and are typical for groundwater within calcareous marine clays.

[2] Rai, D., et al. 1986. Chemical attenuation rates, coefficients, and constants in leachate migration. Volume 1: A critical review. Report to Electric Power Research Institute, Palo Alto, CA, by Battelle Pacific Northwest Laboratories, Richland, WA. Research Project 2198-1.

The narrow range of low estimated concentrations of boron reported for groundwater at both up gradient and down gradient CCR Rule compliance monitoring wells during the March and September 2018, March and September 2019, and March 2020 Detection Monitoring events (see **Table 2**) supports the conclusion that boron in groundwater at the site is naturally occurring. Moreover, the low estimated concentrations of boron in groundwater at the down gradient wells are not consistent with a scenario of a release of leachate from the landfill containing boron at significantly elevated concentrations that are two orders of magnitude higher than the concentrations reported for groundwater. Consequently, inasmuch as boron is essentially unreactive and highly mobile in natural groundwater, the lack of boron (a key indicator of coal ash leachate and unwashed FGD waste) at elevated concentrations in groundwater at the down gradient compliance monitoring wells and the presence of boron at low estimated concentrations in up gradient groundwater, even though boron is present in the landfill leachate at significantly elevated concentrations that are two orders of magnitude higher than the low concentrations reported for groundwater, is a key line of evidence that the SSIs for boron, calcium, chloride, fluoride, sulfate and TDS are attributable to a source other than a release of leachate from the Class 3 landfill. It is noted that TDS concentrations reflect the major ion chemistry of groundwater, which includes calcium, chloride and sulfate, such that an alternate source demonstration for these ions also applies to TDS.

4.2 Major Ion Analysis

Major ion chemistry, including both cations (calcium, magnesium, sodium and potassium) and anions (total alkalinity, chloride and sulfate), can be used to fingerprint source waters and to identify mixing of source waters and other sources such as leachate. As such, major ion chemistry can be used to determine if down gradient groundwater geochemistry reflects mixing of background groundwater and leachate from a CCR unit. Piper diagrams are useful graphical representations of major ion chemistry to differentiate the geochemical signatures of leachate from background groundwater and to identify mixing of leachate and background groundwater. Mixing of leachate and background groundwater is evident in a Piper diagram when down gradient groundwater quality plots at a point between leachate and background groundwater quality.[1] Conversely, little or no mixing is evident if down gradient groundwater quality plots with background groundwater quality or at points that are not between background groundwater quality and leachate.[1]

Table 3 presents the results of major ion analyses of groundwater samples collected from the EPA CCR Rule monitoring wells in October 2017, March, September and November 2018, March, September and November 2019, and March 2020, and landfill leachate samples collected directly from the leachate outfall in October 2017, September and November 2018, March 2019 and March 2020. A charge balance analysis of the groundwater and leachate samples is presented in **Table 4**. In general, if the charge balance falls outside a range of ±10%, it may indicate that significant constituents are missing from the analytical results or that there may be errors in the reported analytical results. The analysis in **Table 4** shows that the charge balance error for most of the groundwater and leachate samples fall within or very near to the preferred range of error. One notable exception is the result for the groundwater sample from background monitoring well MW-LF-28 in October 2017, which shows an error of 0.63. This result indicates that the results are either missing a significant ion species (e.g., NO_3^-) or that the reported result is in error. Consequently, the results for the groundwater sample from MW-LF-28 are considered suspect for analysis of the October 2017 data. With respect to the 2018, 2019 and 2020 data, the analysis in **Table 4** shows that the charge balance error for all of the groundwater and leachate samples fall within or very near the preferred range of error. Consequently, all of the groundwater and leachate data for 2018, 2019 and 2020 are considered suitable for analysis.

Piper diagrams constructed using the data in **Table 3** are presented in **Figures 10** through **17**. The diagrams were constructed using total alkalinity in place of combined carbonate and bicarbonate ion concentrations. In most natural waters, all anion bases except carbonate and bicarbonate are present in very low and negligible concentrations. Therefore, total alkalinity is commonly used as an acceptable substitute for the results of individual analyses of carbonate and bicarbonate concentrations.

The Piper diagram for October 2017 (**Figure 10**) shows that the data for the EPA CCR Rule down gradient monitoring wells generally cluster with the data from the EPA CCR Rule background monitoring wells (MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28) in all three plots. In addition, the diagram shows that the landfill leachate has a distinct geochemical signature that is significantly different from the site groundwater in the composite diamond and anion ternary plots. Moreover, the diagram shows that the data for groundwater samples from the EPA CCR Rule down gradient monitoring wells do not plot between the data for groundwater samples from the background monitoring wells and the landfill leachate.

The Piper diagram for March 2018 shows that the data for the EPA CCR Rule down gradient monitoring wells tightly cluster with the data from the EPA CCR Rule background monitoring wells (MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28) in all three plots. In addition, the diagram shows that the geochemical signature of groundwater differs significantly from the geochemical signature of landfill leachate as depicted in the October 2017 Piper diagram. Moreover, the diagram shows that the March 2018 data for groundwater samples from the EPA CCR Rule down gradient monitoring wells do not plot between the data for groundwater samples from the background monitoring wells and where the landfill leachate sample plots in the October 2017 Piper diagram.

The Piper diagram for September 2018 shows that the data for the EPA CCR Rule down gradient monitoring wells tightly cluster with the data from the EPA CCR Rule background monitoring wells (MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28) in all three plots. In addition, the diagram shows that the landfill leachate has a distinct geochemical signature that is significantly different from the site groundwater in the composite diamond and anion ternary plots. Moreover, the diagram shows that the data for groundwater samples from the EPA CCR Rule down gradient monitoring wells do not plot between the data for groundwater samples from the background monitoring wells and the landfill leachate.

The Piper diagram for November 2018 shows that the data for the EPA CCR Rule down gradient monitoring wells tightly cluster with the data from the EPA CCR Rule background monitoring wells (MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28) in all three plots. In addition, the diagram shows that the landfill leachate has a distinct geochemical signature that is significantly different from the site groundwater in the composite diamond and anion ternary plots. Moreover, the diagram shows that the data for groundwater samples from the EPA CCR Rule down gradient monitoring wells do not plot between the data for groundwater samples from the background monitoring wells and the landfill leachate.

The Piper diagram for March 2019 shows that the data for the EPA CCR Rule down gradient monitoring wells tightly cluster with the data from the EPA CCR Rule background monitoring wells (MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28) in all three plots. In addition, the diagram shows that the landfill leachate has a distinct geochemical signature that is significantly different from the site groundwater in the

composite diamond and anion ternary plots. Moreover, the diagram shows that the data for groundwater samples from the EPA CCR Rule down gradient monitoring wells do not plot between the data for groundwater samples from the background monitoring wells and the landfill leachate. It is noted that the data for CCR Rule down gradient compliance monitoring wells MW-LF-25 and MW-LF-26 marginally plot between the data for the background monitoring wells and the landfill leachate in the composite diamond plot. However, the data from MW-LF-25 and MW-LF-26 cluster closely with the data from the other monitoring wells, including the background monitoring wells, in all three plots of the Piper diagram.

The Piper diagram for September 2019 shows that the data for the EPA CCR Rule down gradient monitoring wells tightly cluster with the data from the EPA CCR Rule background monitoring wells (MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28) in all three plots. In addition, the diagram shows that the geochemical signature of groundwater differs significantly from the geochemical signature of landfill leachate as depicted in the composite diamond and anion ternary plots of the March 2019 Piper diagram. Moreover, the diagram shows that the data for groundwater samples from the EPA CCR Rule down gradient monitoring wells do not plot between the data for groundwater samples from the background monitoring wells and the landfill leachate. It is noted that the data for CCR Rule down gradient compliance monitoring wells MW-LF-25 and MW-LF-26 marginally plot between the data for the background monitoring wells and the landfill leachate in the composite diamond plot. However, the data from MW-LF-25 and MW-LF-26 cluster closely with the data from the other monitoring wells, including the background monitoring wells, in all three plots of the Piper diagram.

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LF-25 and MW-LF-26 cluster closely with the data from the other monitoring wells, including the background monitoring wells, in all three plots of the Piper diagram.

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The results of the major ion analysis indicate that landfill leachate is not affecting the chemistry of the groundwater at any of the down gradient compliance well locations. In addition, the major ion analysis results provide a key line of evidence to the results of analysis of key indicators that leachate from the Class 3 landfill is not responsible for the SSIs observed for boron, calcium, chloride, fluoride, sulfate and TDS in groundwater at the down gradient EPA CCR Rule compliance monitoring wells. Inasmuch as the geochemical signatures of the groundwater from the down gradient compliance monitoring wells are similar to those of groundwater from the background monitoring wells, and substantially differ from the geochemical signature of the landfill leachate, the results of the major ion analysis further support the conclusion that the SSIs are the result of natural variations in concentrations of these parameters in site groundwater.

4.3 Ion Ratios

Ion ratios are useful for identifying separate source waters or for determining if a separate source water (e.g., leachate) is being added to groundwater along a flow path.[1] Data analyses of ion ratios are based on the premise that two constituents in groundwater with similar mobility will remain in the same relative concentrations during transport unless water from another source that has a significantly different ratio of the

same constituents is mixed with the groundwater.[1] Consequently, the release of leachate to groundwater should result in relative concentrations (i.e., ion ratios) in groundwater at down gradient monitoring wells that are similar to those in leachate even as the total concentrations of the constituents are diluted due to mixing with background groundwater during transport. Conversely, if ion ratios observed at the down gradient monitoring wells are similar to those observed at the background wells, this constitutes evidence that no other source water has been introduced to groundwater along the flow path. Highly mobile, non-reactive constituents such as boron, chloride, lithium, molybdenum and sulfate are the best candidates for use in ion ratio analyses.

Table 5 presents concentration ratios of sulfate/chloride, lithium/chloride and molybdenum/chloride for landfill leachate and groundwater from the EPA CCR Rule monitoring wells. The table presents date-specific and average values for each ion ratio.

The sulfate/chloride ratios indicate that the average ratio values for groundwater at the background monitoring wells (MW-LF-10, MW-LF-11. MW-LF-27 and MW-LF-28) are all significantly less than the ratio value for the landfill leachate. Moreover, with the exception of the sulfate/chloride ratio values for groundwater at monitoring wells MW-LF-22D, MW-LF-23D and MW-LF-25, the sulfate/chloride ratio values for groundwater at the remaining down gradient monitoring wells are similar to the sulfate/chloride ratio values in groundwater at one or more of the background monitoring wells and not similar to the sulfate/chloride ratio value of the landfill leachate, indicating that landfill leachate has not affected the chloride and sulfate chemistry of the groundwater at those locations.

The sulfate/chloride ratio value for groundwater at monitoring well MW-LF-22D greatly exceeds the ratio value of the leachate, whereas the average ratio value for groundwater at monitoring well MW-LF-23D falls between the average ratio values for background groundwater and the leachate, and the average ratio value for groundwater at monitoring well MW-LF-25 is slightly less than the average ratio value of the landfill leachate. It is noted that both MW-LF-22D and MW-LF-23D are installed to greater depths within a predominantly calcareous clay unit at the site than any of the other CCR Rule compliance monitoring wells. This likely has an influence on the resulting geochemistry of the groundwater yielded to these wells. Moreover, the much higher sulfate/chloride ratio value in groundwater at MW-LF-22D relative to the landfill leachate indicates that the leachate is not influencing the geochemistry of the groundwater at that

location, but that a source water other than or in addition to the background groundwater is affecting the geochemistry of the groundwater at MW-LF-22D. It is further noted that the sulfate/chloride ratio values for the groundwater samples collected from MW-LF-25 in September and November 2018, March 2019 and March 2020 greatly exceed the highest and average sulfate/chloride ratio values observed for the landfill leachate. The much higher sulfate/chloride ratio values observed in groundwater at MW-LF-25 in September and November 2018, March 2019 and March 2020 relative to the landfill leachate indicates that the leachate is not influencing the geochemistry of the groundwater at that location, but that a source water other than or in addition to the background groundwater is affecting the geochemistry of the groundwater at MW-LF-25. The dissimilarity of the lithium/chloride and molybdenum/chloride ion ratios of the groundwater at MW-LF-23D relative to the landfill leachate (see below) indicate that the sulfate/chloride ratio values for groundwater at monitoring well MW-LF-23D that fall between the average background ratio values and the average ratio value for the leachate are likely coincidental and not an indication of the leachate affecting the geochemistry of the groundwater at those locations.

The lithium/chloride ratios indicate that the average ratio values for groundwater at the background monitoring wells (MW-LF-10, MW-LF-11. MW-LF-27 and MW-LF-28) are all significantly less than the ratio value for the landfill leachate. Moreover, the lithium/chloride ratio values for groundwater at all of the down gradient monitoring wells are similar to the lithium/chloride ratio values in groundwater at one or more of the background monitoring wells and substantially less than the average ratio value for the landfill leachate, indicating that landfill leachate has not affected the chemistry of the groundwater at any of the compliance well locations.

The molybdenum/chloride ratios indicate that the average ratio values for groundwater at the background monitoring wells (MW-LF-10, MW-LF-11. MW-LF-27 and MW-LF-28) are all significantly less than the ratio value for the landfill leachate. Moreover, the molybdenum/chloride ratio values for groundwater at all of the down gradient monitoring wells are also significantly less than the ratio value for the landfill leachate and generally similar to the molybdenum/chloride ratio values in groundwater at one or more of the background monitoring wells. Consequently, the ion ratio data indicate that landfill leachate has not affected the chemistry of the groundwater at any of the compliance well locations. Although the molybdenum/chloride ratio values in groundwater at monitoring wells MW-LF-22D and MW-LF-23D are higher than the ratios for groundwater at the background wells, they are substantially less than the ratio value for

the leachate and much more similar to the background ratio values. The slightly elevated molybdenum/chloride ratio values in groundwater at these wells relative to background is likely a reflection of the effects on groundwater geochemistry resulting from the greater depths of penetration of these wells into the calcareous clay unit.

The results of the ion ratio analyses provide supporting evidence to the results of analysis of key indicators that leachate from the Class 3 landfill is not responsible for the SSIs observed for boron, calcium, chloride, fluoride, sulfate and TDS in groundwater at the down gradient EPA CCR Rule compliance monitoring wells. Inasmuch as the geochemical signatures of the groundwater from the down gradient compliance monitoring wells are substantially similar to those of groundwater from the background monitoring wells, the results of the ion ratio analyses support the conclusion that the SSIs are the result of natural variations in concentrations of these parameters in site groundwater.

5.0 CONCLUSIONS

Several conclusions can be drawn from the ASD evaluation presented in the previous sections.

1. The results of the key indicators analysis provide strong evidence that the SSIs for boron, calcium, chloride, fluoride, sulfate and TDS based on the March 2020 Detection Monitoring data are attributable to a source other than a release of leachate from the Class 3 landfill. In particular, the narrow range of low concentrations of boron reported for groundwater at both up gradient and down gradient CCR Rule compliance monitoring wells supports the conclusion that boron in groundwater at the site is naturally occurring. Moreover, the lack of boron (a key indicator of coal ash leachate and unwashed FGD waste) at elevated concentrations in groundwater at the down gradient compliance monitoring wells and the presence of boron at low concentrations in up gradient groundwater, even though boron is present in the landfill leachate at significantly elevated concentrations that are two orders of magnitude higher than the low concentrations reported for groundwater, indicates that the leachate is not a contributing factor to the SSIs.
2. The results of the ion ratio analyses provide supporting evidence to the results of analysis of key indicators that leachate from the Class 3 landfill is not responsible for the SSIs observed for boron, calcium, chloride, fluoride, sulfate and TDS in groundwater at the down gradient EPA CCR Rule compliance monitoring wells. Inasmuch as the geochemical signatures of the groundwater from the down gradient compliance monitoring wells are substantially similar to those of groundwater from the background monitoring wells, the results of the ion ratio analyses support the conclusion that the SSIs are the result of natural variations in concentrations of these parameters in background groundwater.
3. The results of the major ion analysis indicate that landfill leachate is not affecting the chemistry of the groundwater at the down gradient compliance monitoring well locations. In addition, the major ion analysis results provide a key line of evidence to the results of analysis of key indicators that leachate from the Class 3 landfill is not responsible for the SSIs observed for boron, calcium, chloride, fluoride, sulfate and TDS in groundwater at the down gradient EPA CCR Rule compliance monitoring wells. Inasmuch as the geochemical signatures of the groundwater from the down gradient compliance monitoring wells are similar to those of groundwater from the background monitoring wells, and substantially

differ from the geochemical signature of the landfill leachate, the results of the major ion analysis further support the conclusion that the SSIs are the result of natural variations in concentrations of these parameters in site groundwater.

4. The preponderance of the evidence from the key indicators, major ions and ion ratios analyses presented herein support the conclusion that leachate from the landfill is not responsible for the SSIs observed for boron, calcium, chloride, fluoride, sulfate and TDS in groundwater at the down gradient EPA CCR Rule monitoring wells.

The preceding information serves as the ASD prepared in accordance with 40 CFR 257.94(e)(2) and supports the position that the SSIs evident from statistical analysis of groundwater quality data collected during the March 2020 Detection Monitoring event are not due to a release from the Class 3 landfill at the site. Therefore, no further action (i.e., assessment monitoring) is warranted and the Class 3 landfill will remain in detection monitoring.

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FIGURES

1 Site Location Map: Williams Station Highway 52 Landfill
2 Site Map: Williams Station Highway 52 Landfill
3 Boron Isoconcentration Contour Map: September 2020
4 Calcium Isoconcentration Contour Map: September 2020
5 Chloride Isoconcentration Contour Map: September 2020
6 Fluoride Isoconcentration Contour Map: September 2020
7 Sulfate Isoconcentration Contour Map: September 2020
8 Total Dissolved Solids Isoconcentration Contour Map: September 2020
9 Groundwater Elevation Contour Map: September 2020
10 Piper Diagram: Williams Station Highway 52 Class 3 Landfill October 2017
11 Piper Diagram: Williams Station Highway 52 Class 3 Landfill March 2018
12 Piper Diagram: Williams Station Highway 52 Class 3 Landfill September 2018
13 Piper Diagram: Williams Station Highway 52 Class 3 Landfill November 2018
14 Piper Diagram: Williams Station Highway 52 Class 3 Landfill March 2019
15 Piper Diagram: Williams Station Highway 52 Class 3 Landfill September 2019
16 Piper Diagram: Williams Station Highway 52 Class 3 Landfill November 2019
17 Piper Diagram: Williams Station Highway 52 Class 3 Landfill March 2020

N

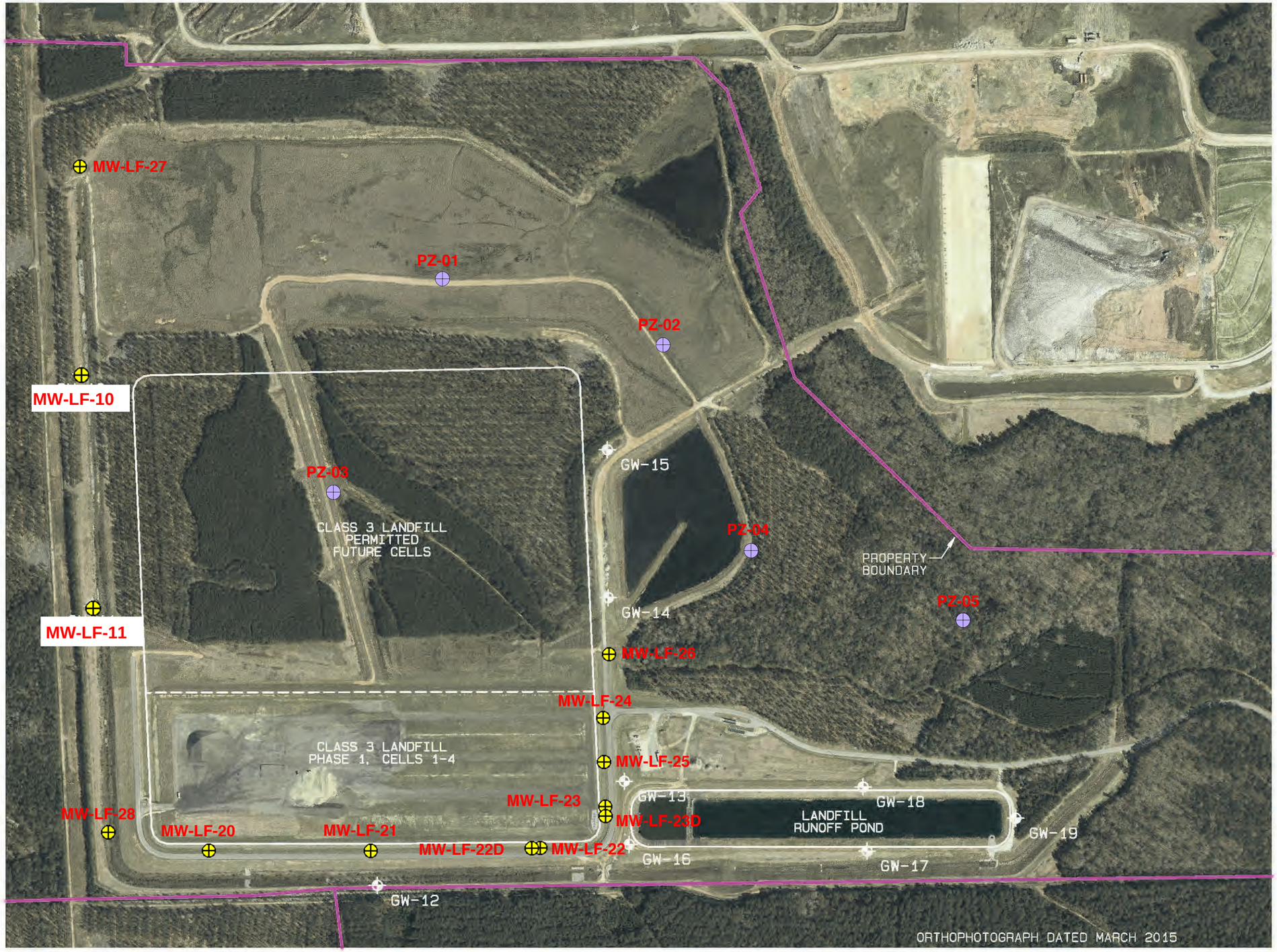
Source: USGS 7.5' Topographic Quadrangle Series
Moncks Corner, SC 2014 and Mount Holly, SC 2014

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Place
Wendell, NC 27591
Office: (919) 366-3663
Cell: (919) 995-0363

SITE LOCATION MAP

DESC Williams Station Highway 52 Class 3 ISW Landfill
Goose Creek, Berkeley County, South Carolina

Drawn by:	Reviewed by:	Project #:	Drawing #:	Figure No.
USGS		Scale: 1:24,000	Drawing Date: 8/01/2016	1



GW-10 GROUNDWATER MONITORING WELL

GW-20 **CCR Rule Compliance Groundwater Monitoring Well**

PZ-01 **Piezometer**

-N-

GRAPHIC SCALE 1"=500'

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WILLIAMS STATION HIGHWAY 52 CLASS THREE LANDFILL

CCR Rule Compliance Groundwater Monitoring Wells

JOB NUMBER

SHEET 2

GW-10 GROUNDWATER MONITORING WELL

GW-20 CCR Rule Compliance Groundwater Monitoring Well

PZ-01 Piezometer

(233) Boron Concentration (ug/L)

100 Boron Isoconcentration Contour (ug/L)

MW-LF-27 (58.4)
MW-LF-10 (122)
MW-LF-11 (43.7)
MW-LF-28 (ND)
MW-LF-20 (242)
MW-LF-21 (233)
MW-LF-22D
MW-LF-22 (384)
MW-LF-23
MW-LF-23D (333)
MW-LF-24 (114)
MW-LF-25 (135)
MW-LF-26 (193)
PZ-01
PZ-02
PZ-03
PZ-04
PZ-05
GW-12
GW-13
GW-14
GW-15
GW-16
GW-17
GW-18
GW-19

CLASS 3 LANDFILL PERMITTED FUTURE CELLS

CLASS 3 LANDFILL PHASE 1, CELLS 1-4

LANDFILL RUNOFF POND

PROPERTY BOUNDARY

-N-

GRAPHIC SCALE 1"=500'

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WILLIAMS STATION HIGHWAY 52 CLASS THREE LANDFILL

Boron Isoconcentration Contour Map: March 2020

JOB NUMBER

SHEET 3

GW-10 GROUNDWATER MONITORING WELL

GW-20 CCR Rule Compliance Groundwater Monitoring Well

PZ-01 Piezometer

(51.3) Calcium Concentration (mg/L)

100 Calcium Isoconcentration Contour (mg/L)

MW-LF-27 (51.3)
MW-LF-10 (78.6)
MW-LF-11 (13.3)
MW-LF-23 (13.5)
MW-LF-20 (157)
MW-LF-21 (132)
MW-LF-22D (86.1)
MW-LF-22 (73.0)
MW-LF-23D
MW-LF-23
MW-LF-24 (124)
MW-LF-25 (157)
MW-LF-26 (179)
PZ-01
PZ-02
PZ-03
PZ-04
PZ-05
GW-12
GW-13
GW-14
GW-15
GW-16
GW-17
GW-18
GW-19
CLASS 3 LANDFILL PERMITTED FUTURE CELLS
CLASS 3 LANDFILL PHASE 1, CELLS 1-4
LANDFILL RUNOFF POND
PROPERTY BOUNDARY
ORTHOPHOTOGRAPH DATED MARCH 2015

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GRAPHIC SCALE 1"=500'

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WILLIAMS STATION HIGHWAY 52 CLASS THREE LANDFILL

Calcium Isoconcentration Contour Map: March 2020

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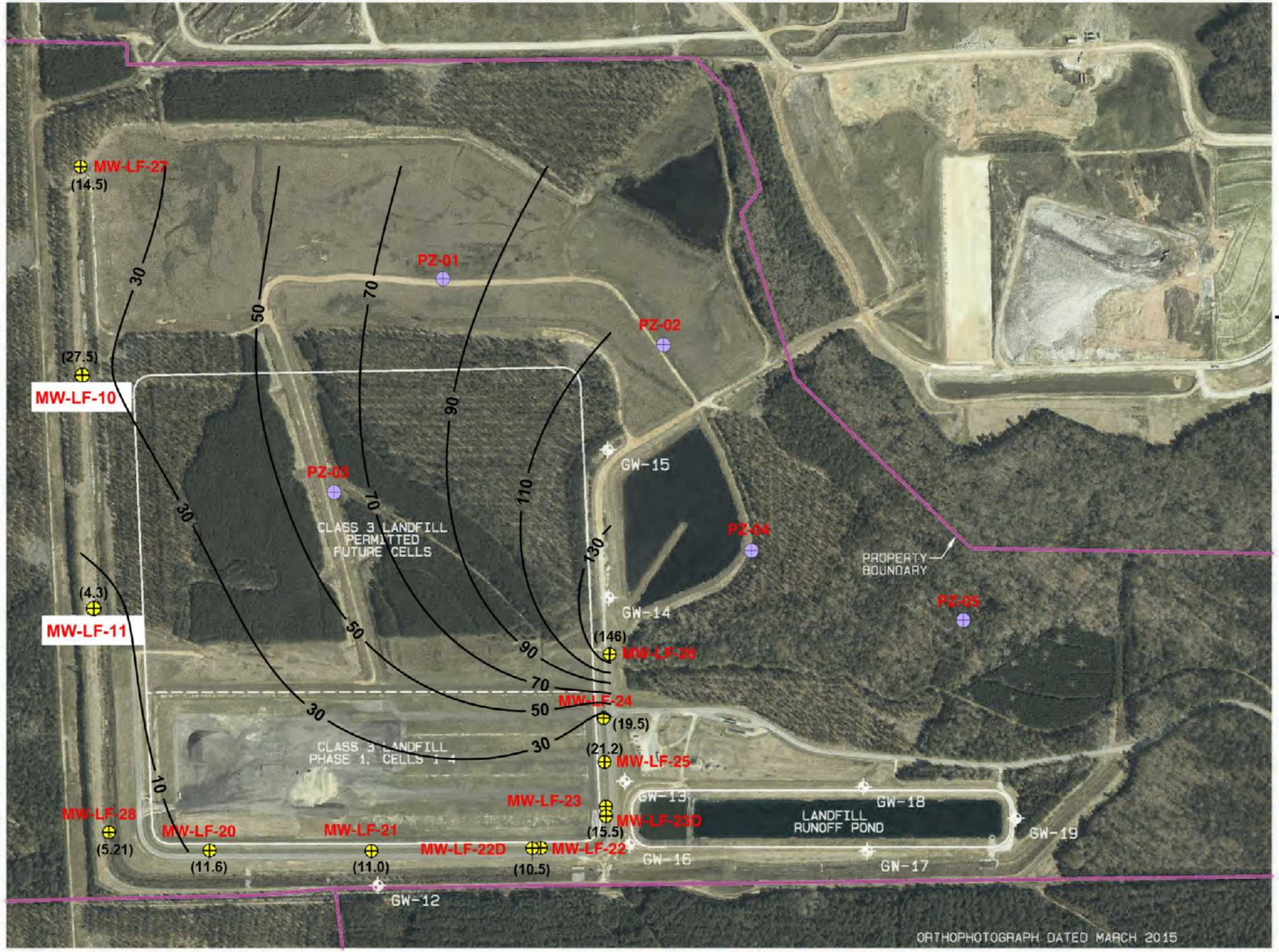
SHEET 4



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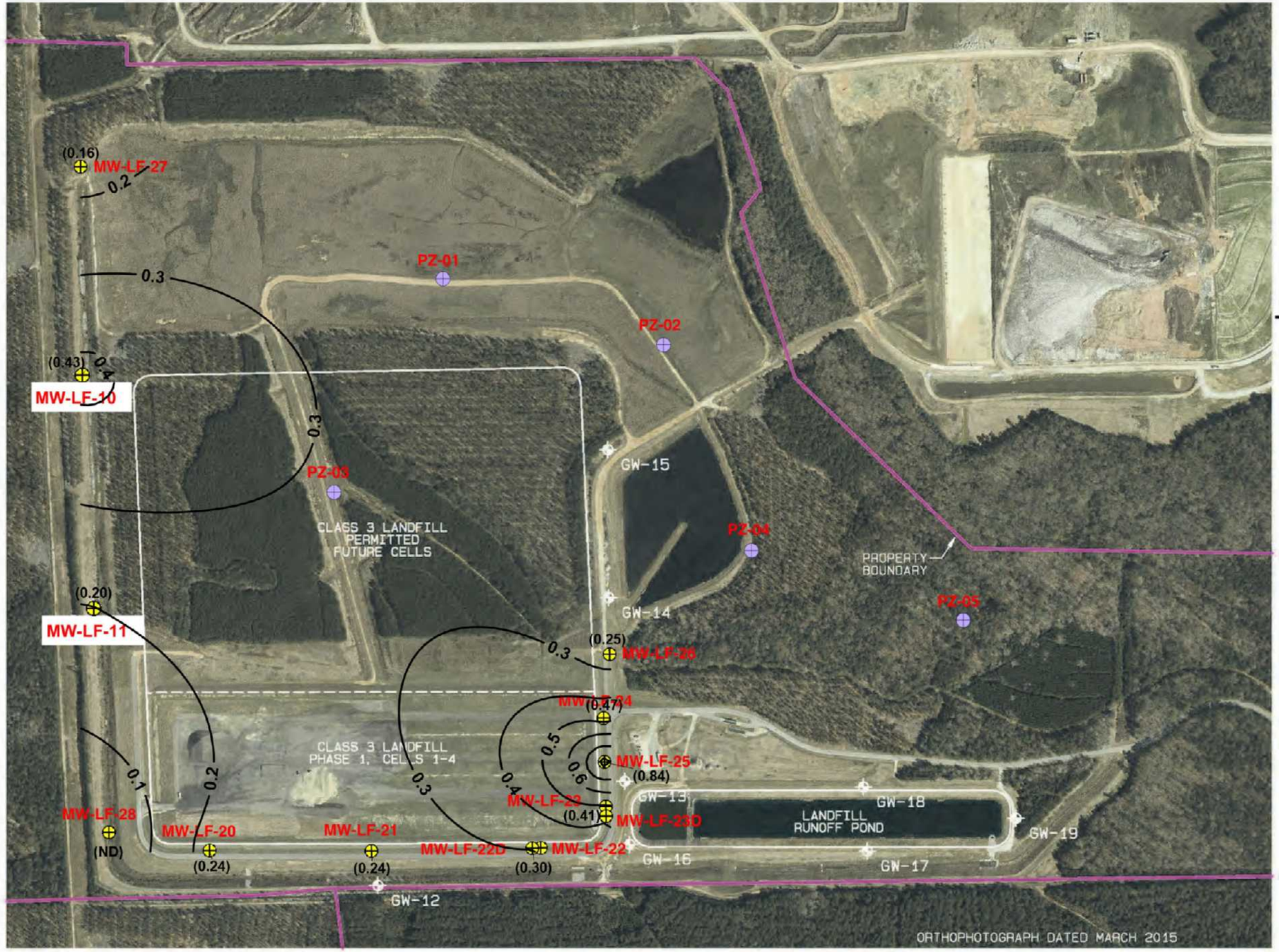
WILLIAMS STATION HIGHWAY 52 CLASS THREE LANDFILL

Chloride Isoconcentration Contour Map: March 2020

JOB NUMBER

SHEET 5



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WILLIAMS STATION HIGHWAY 52 CLASS THREE LANDFILL

Fluoride Isoconcentration Contour Map: March 2020

JOB NUMBER

SHEET 6

GW-10 GROUNDWATER MONITORING WELL

GW-20 CCR Rule Compliance Groundwater Monitoring Well

PZ-01 Piezometer

(8.13) Sulfate Concentration (mg/L)

10 Sulfate Isoconcentration Contour (mg/L)

(20.9) MW-LF-27

(7.13) MW-LF-10

(3.54) MW-LF-11

(5.11) MW-LF-28

(7.66) MW-LF-20

(8.13) MW-LF-21

(44.4) MW-LF-22

(25.2) MW-LF-23D

(215) MW-LF-25

(14.7) MW-LF-24

(75.0) MW-LF-26

MW-LF-22D

MW-LF-23

PZ-01 PZ-02 PZ-03 PZ-04 PZ-05

GW-12 GW-13 GW-14 GW-15 GW-16 GW-17 GW-18 GW-19

20 40 60 80

CLASS 3 LANDFILL PERMITTED FUTURE CELLS

CLASS 3 LANDFILL PHASE 1, CELLS 1-4

LANDFILL RUNOFF POND

PROPERTY BOUNDARY

-N-

GRAPHIC SCALE 1"=500'

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ORTHOPHOTOGRAPH DATED MARCH 2015

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WILLIAMS STATION HIGHWAY 52 CLASS THREE LANDFILL

Sulfate Isoconcentration Contour Map: March 2020

JOB NUMBER

SHEET 7

GW-10 GROUNDWATER MONITORING WELL

GW-20 CCR Rule Compliance Groundwater Monitoring Well

PZ-01 Piezometer

(683) TDS Concentration (mg/L)

100 TDS Isoconcentration Contour (mg/L)

MW-LF-27 (235)
MW-LF-10 (382)
MW-LF-11 (93)
MW-LF-28 (68)
MW-LF-20 (671)
MW-LF-21 (643)
MW-LF-22D (585)
MW-LF-22
MW-LF-23
MW-LF-23D (528)
MW-LF-24 (497)
MW-LF-25 (792)
MW-LF-26 (937)
PZ-01
PZ-02
PZ-03
PZ-04
PZ-05
GW-12
GW-13
GW-14
GW-15
GW-16
GW-17
GW-18
GW-19
CLASS 3 LANDFILL PERMITTED FUTURE CELLS
CLASS 3 LANDFILL PHASE 1, CELLS 1-4
LANDFILL RUNOFF POND
PROPERTY BOUNDARY
100
200
300
400
500
600
700
800

-N-

GRAPHIC SCALE 1"=500'

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ORTHOPHOTOGRAPH DATED MARCH 2015

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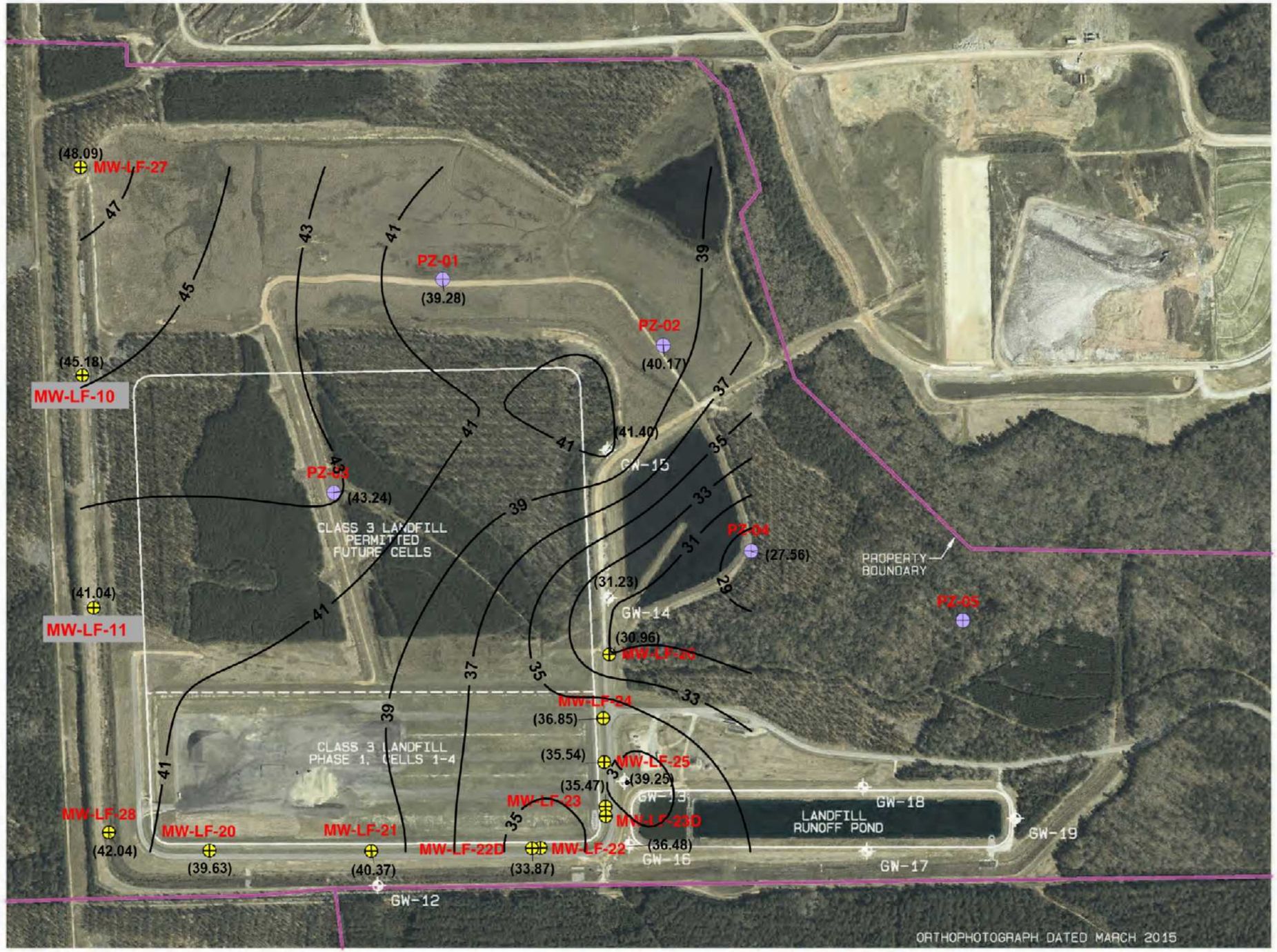
WILLIAMS STATION HIGHWAY 52 CLASS THREE LANDFILL

TDS Isoconcentration Contour Map: March 2020

JOB NUMBER

SHEET 8



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WILLIAMS STATION HIGHWAY 52 CLASS THREE LANDFILL

Groundwater Elevation Contour Map: March 2020

JOB NUMBER

SHEET 9

FIGURE 10
Williams Station Highway 52 Class 3 Landfill October 2017

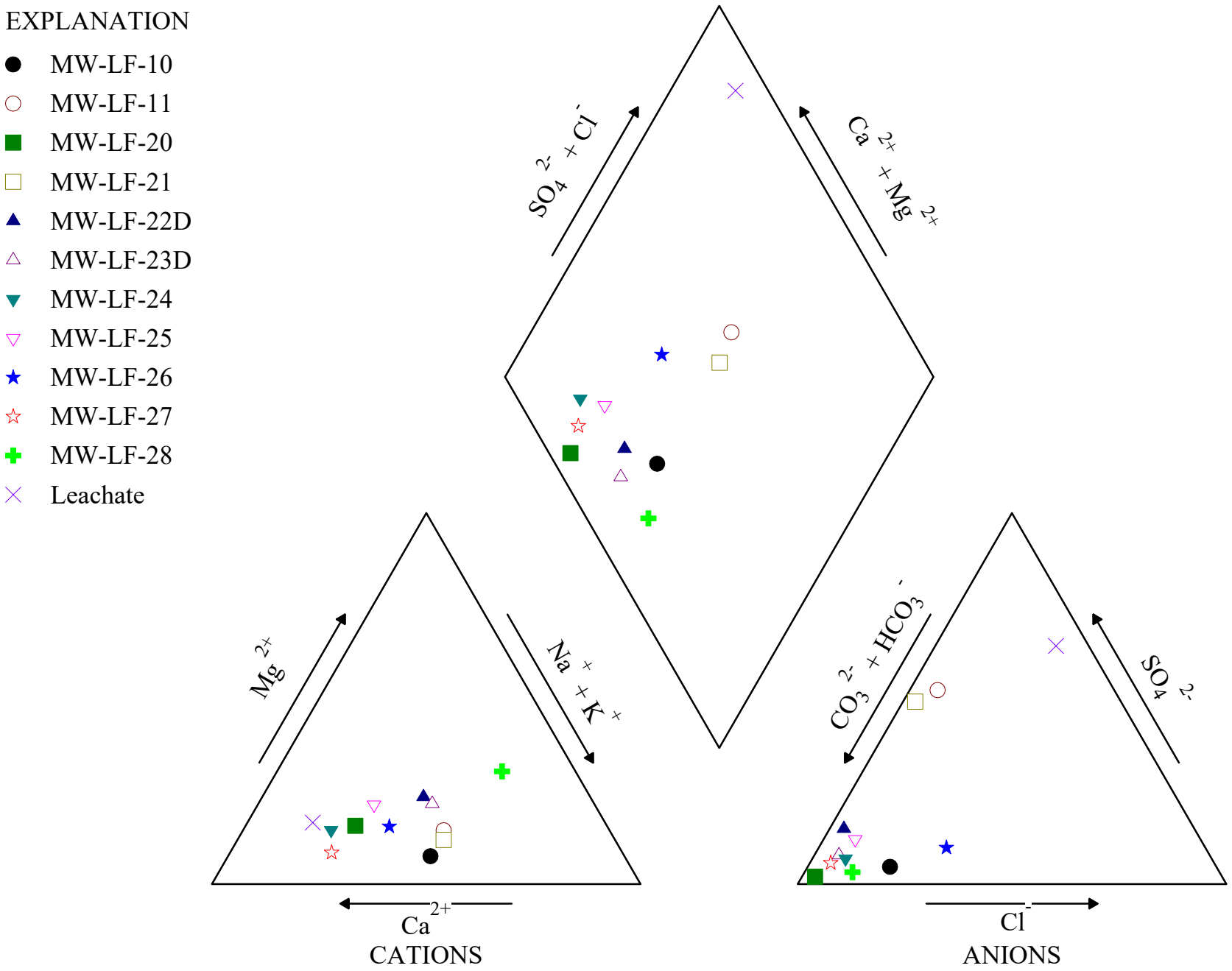


FIGURE 11

Williams Station Highway 52 Class 3 Landfill March 2018

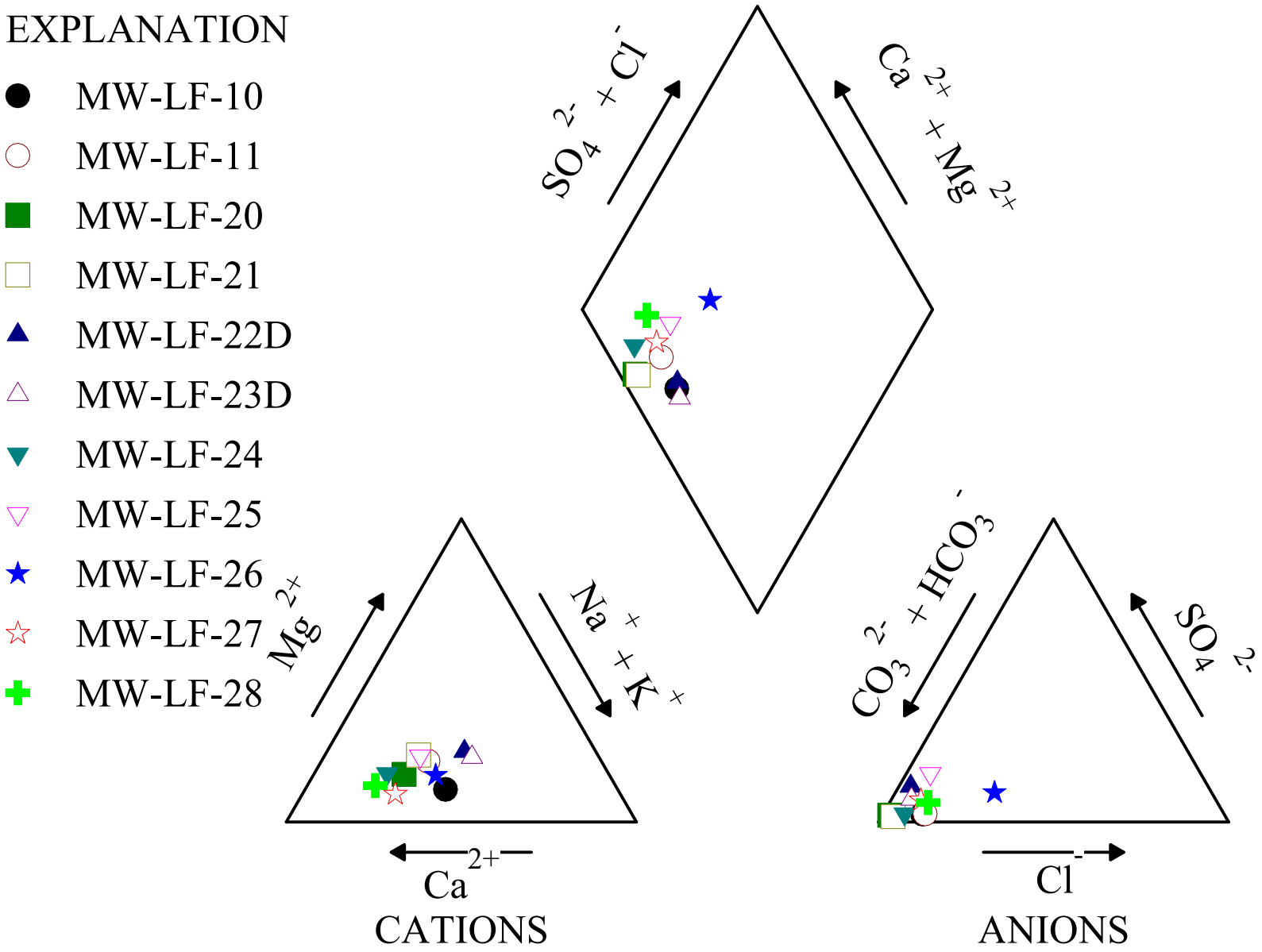


FIGURE 12

Williams Station Class 3 Landfill: September 2018

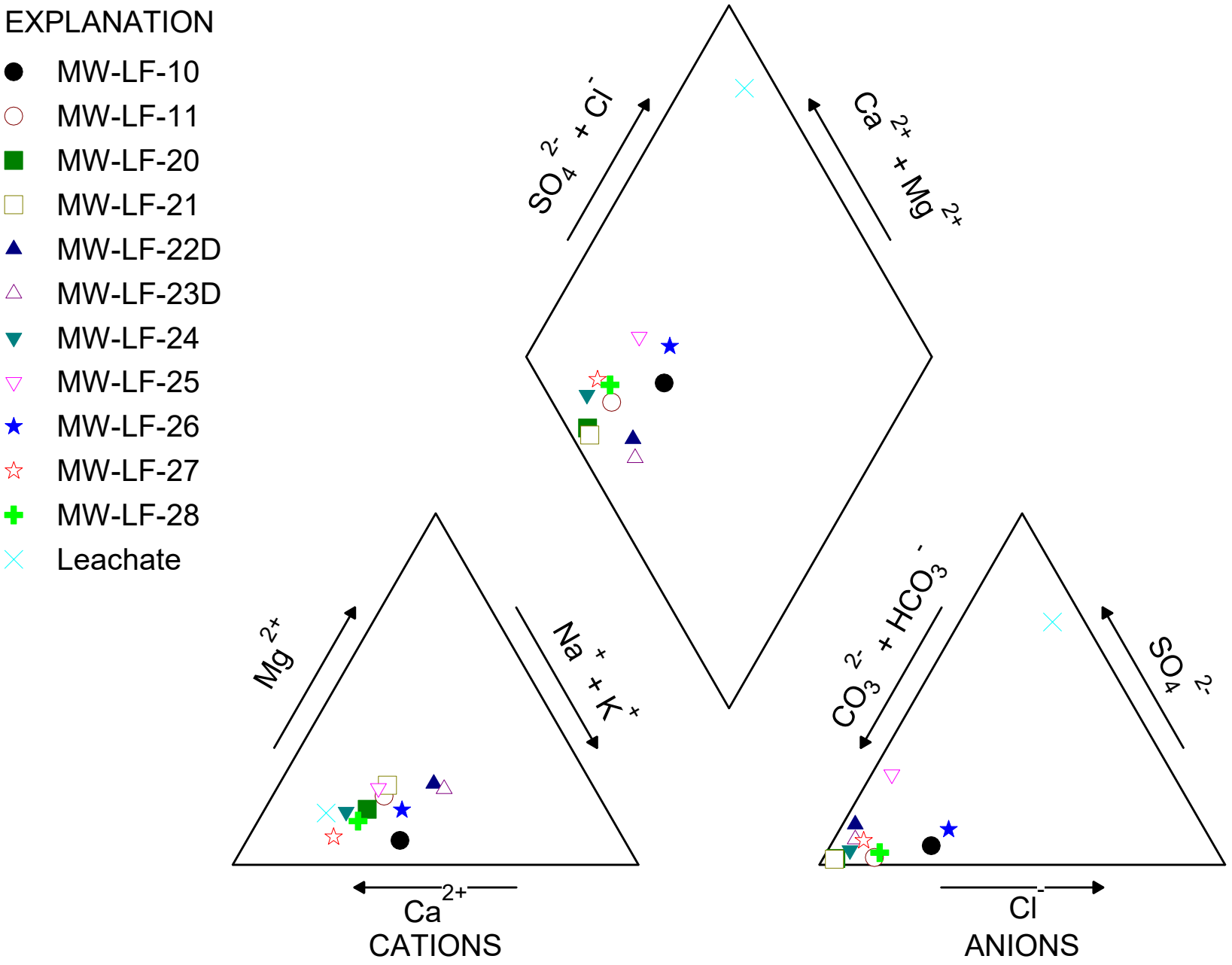


FIGURE 13

Williams Station Class 3 Landfill: November 2018

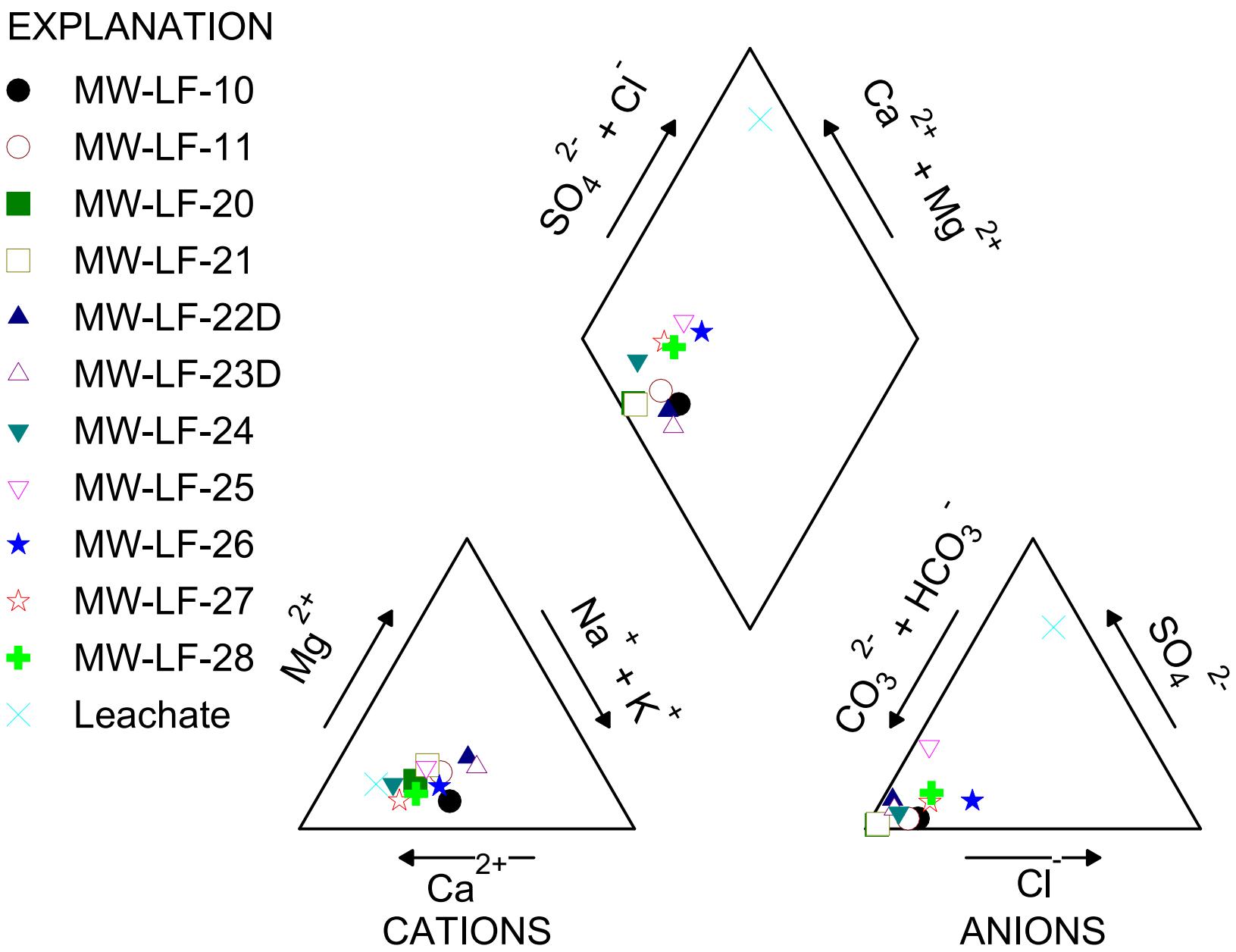


FIGURE 14

Williams Station Class 3 Landfill: March 2019

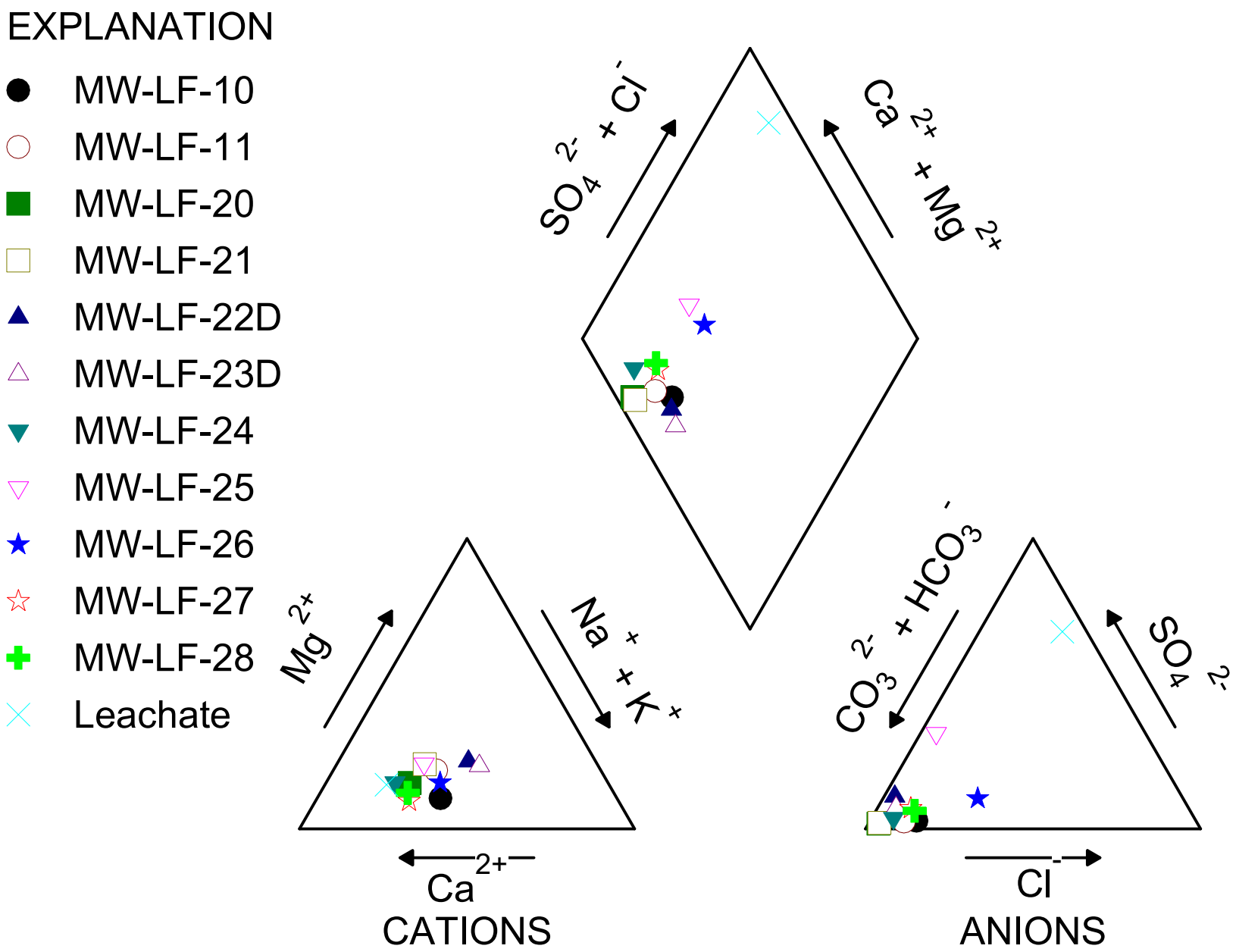


FIGURE 15

Williams Station Class 3 Landfill: September 2019

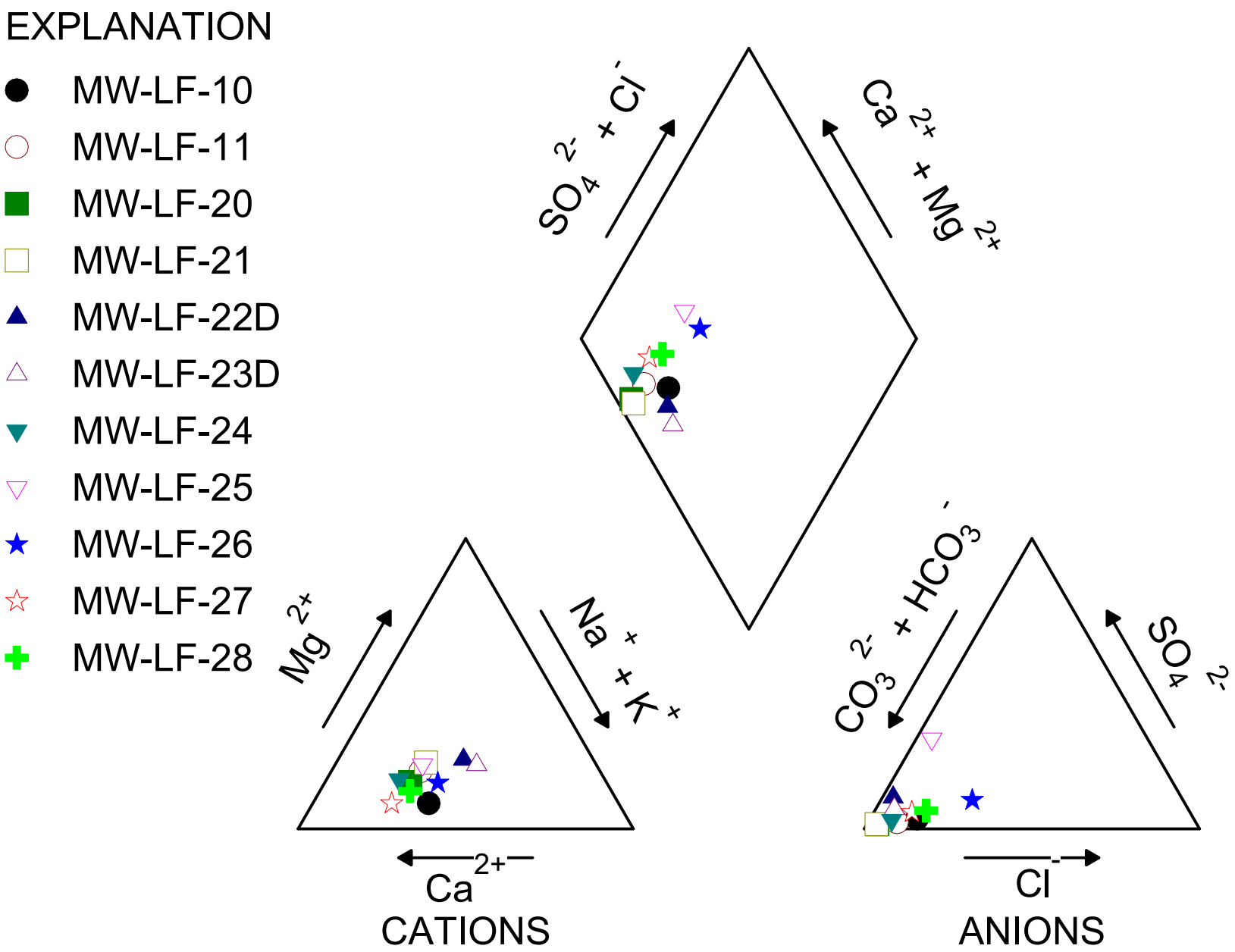


FIGURE 16

Williams Station Class 3 Landfill: November 2019

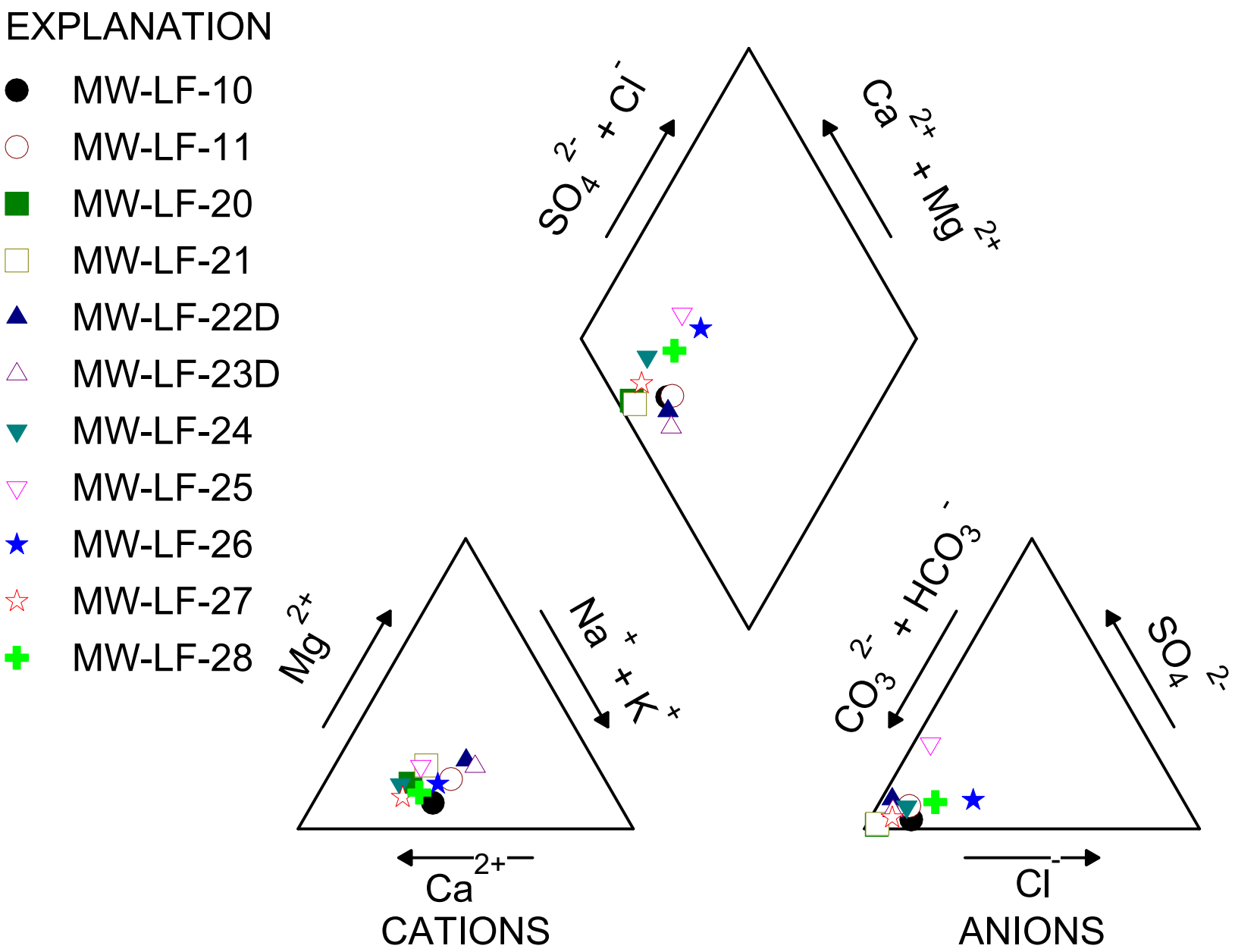
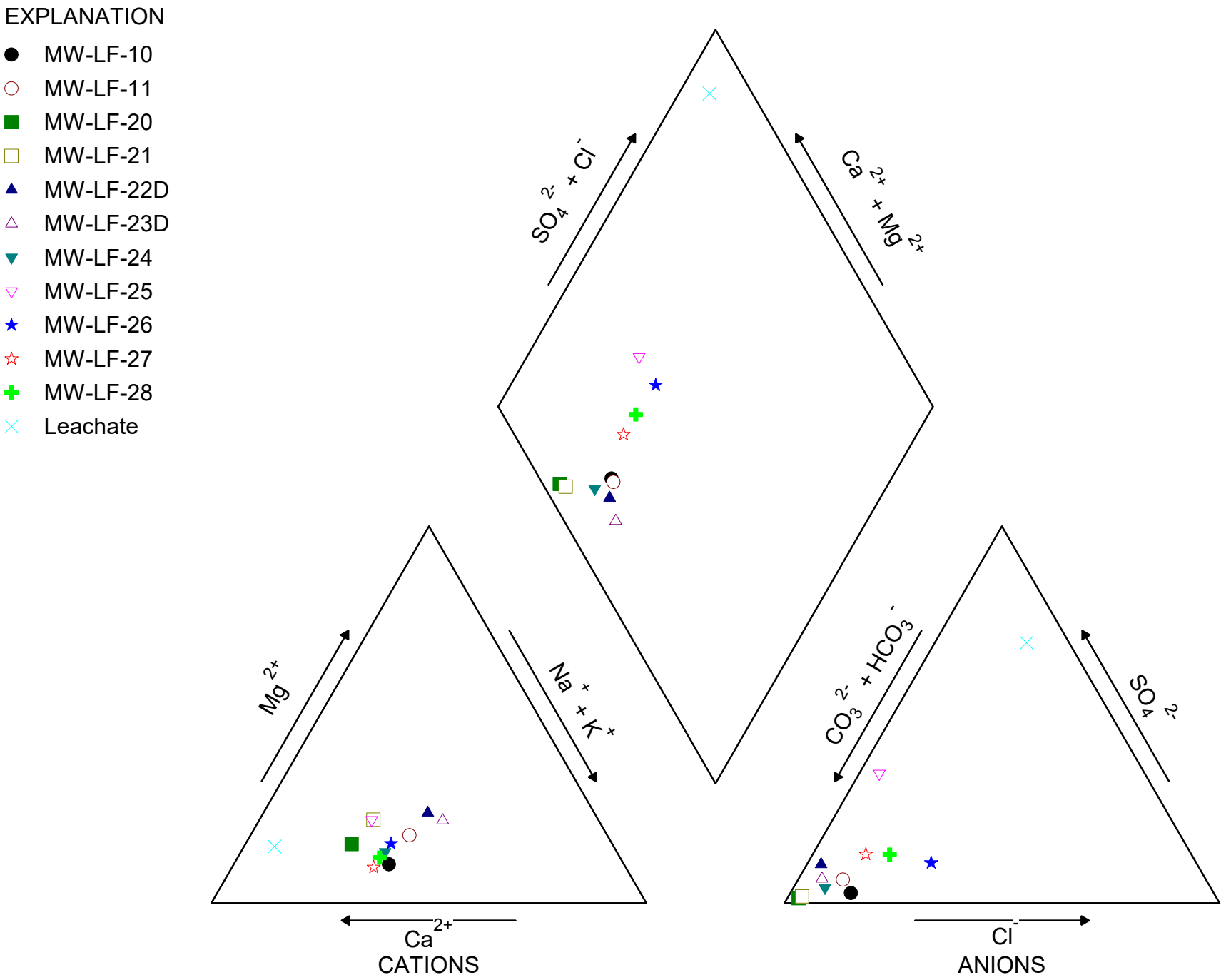


Figure 17
Williams Station Class 3 Landfill: March 2020



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TABLES

1 EPA CCR Rule Compliance Monitoring Well Construction Data and Specifications
2 Results of Field and Laboratory Analyses of Groundwater, Surface Water and Leachate Samples
3 Major Ions in Groundwater and Leachate
4 Charge Balance of Major Ions in Groundwater and Leachate
5 Ion Ratios in Groundwater and Landfill Leachate

Table 1
EPA CCR Rule Compliance Monitoring Well Construction Data and Specifications
Dominion Energy South Carolina
Williams Station Highway 52 Class Three Landfill

Williams Station Highway 52 Class Three Landfill

				Elevation Data			Test Boring Data		Monitoring Well Construction Data			
Monitoring Well ID	Boring Date	Northing	Easting	PVC Pipe Elev.	Ground Elev.	Stickup feet	Total Depth, ft.	Bottom Elevation	Top of Well Screen		Bottom of Well Screen	
									Depth, ft.	Elev.	Depth, ft.	Elev.
MW-LF-10[1]	10/27/2009	469470.302	2290419.95	52.29	49.49	2.80	18.2	31.29	8.20	41.29	18.20	31.29
MW-LF-11[1]	10/27/2009	468331.63	2290473.75	51.72	48.75	2.97	18.6	30.15	8.60	40.15	18.60	30.15
MW-LF-20	3/31/2016	467118.374	2291039.134	60.81	56.70	4.11	29.0	27.70	19.00	37.70	29.00	27.70
MW-LF-21	3/31/2016	467117.56	2291773.288	56.14	52.50	3.64	25.0	27.50	15.00	37.50	25.00	27.50
MW-LF-22	3/30/2016	467128.377	2292654.545	50.33	46.90	3.43	21.0	25.90	11.00	35.90	21.00	25.90
MW-LF-22D	4/27/2016	467127.30	2292644.27	50.36	47.10	3.26	31.5	15.60	15.00	32.10	30.00	17.10
MW-LF-23	3/30/2016	467333.297	2293006.406	49.99	46.20	3.79	20.0	26.20	10.00	36.20	20.00	26.20
MW-LF-23D	4/27/2016	467321.42	2293007.68	49.69	46.20	3.49	30.5	15.70	15.00	31.20	30.00	16.20
MW-LF-24	3/29/2016	467729.957	2292988.388	52.40	48.70	3.70	22.0	26.70	12.00	36.70	22.00	26.70
MW-LF-25	3/30/2016	467523.598	2292996.902	50.93	47.40	3.53	21.0	26.40	11.00	36.40	21.00	26.40
MW-LF-26	3/29/2016	468065.28	2293004.748	55.21	51.20	4.01	30.0	21.20	20.00	31.20	30.00	21.20
MW-LF-27	11/15/2016	470498.662	2290393.951	53.43	50.75	2.68	20.0	30.75	5.00	45.75	20.00	30.75
MW-LF-28	11/15/2016	467226	2290521.385	51.23	48.85	2.38	17.0	31.85	7.00	41.85	17.00	31.85
PZ-01	7/11/2017	469927.998	2292209.512	44.51	41.62	2.89	27.0	14.62	17.00	24.62	27.00	14.62
PZ-02	7/11/2017	469593.181	2293239.085	45.67	43.13	2.54	30.0	13.13	20.00	23.13	30.00	13.13
PZ-03	7/10/2017	468886.064	2291636.734	47.97	45.11	2.86	30.0	15.11	20.00	25.11	30.00	15.11
PZ-04	7/12/2017	468587.744	2293690.416	38.9	35.68	3.22	30.0	5.68	20.00	15.68	30.00	5.68
PZ-05	7/11/2017	468278.3962	2294752.422	25.15	22.34	2.81	30.0	-7.66	20.00	2.34	30.00	-7.66

NOTES:
1 - Existing monitoring wells; installed prior to March 2016 for use in groundwater monitoring under other regulatory programs but included in EPA CCR Rule compliance monitoring.

TABLE 2
RESULTS OF FIELD AND LABORATORY ANALYSES OF GROUNDWATER, SURFACE WATER AND LEACHATE SAMPLES
EPA CCR RULE BACKGROUND AND COMPLIANCE GROUNDWATER MONITORING WELLS
Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

	Groundwater Monitoring Indicator Parameters						40 CFR Part 257 Appendix III Detection Monitoring Parameters								40 CFR Part 257 Appendix IV Assessment Monitoring Constituents															
	Groundwater Elevation ft	ORP mV	DO mg/L	Specific conductance u mhos/cm	Temperature degrees C	Turbidity NTU 10	pH (lab) S.U.	pH (field) S.U.	Boron ug/L BG	Calcium ug/L BG	Chloride mg/L BG	Fluoride mg/L 4 mg/L	Sulfate mg/L BG	TDS mg/L BG	Antimony ug/L 6 ug/L	Arsenic ug/L 10 ug/L	Barium ug/L 2000 ug/L	Beryllium ug/L 4 ug/L	Cadmium ug/L 5 ug/L	Chromium ug/L 100 ug/L	Cobalt ug/L BG	Lead ug/L 15 ug/L	Lithium ug/L BG	Mercury ug/L 2 ug/L	Molybdenum ug/L BG	Radium 226 pCi/L 5 pCi/L	Radium 228 pCi/L 5 pCi/L	Radium 226 + 228 pCi/L 5 pCi/L	Selenium ug/L 50 ug/L	Thallium ug/L 2 ug/L
Williams 52 Landfill																													
MW-LF-10																													
5/11/16	43.58	-2	1.8	537	19.5	0.69	7.17	7.1	<1,000	58,600	15.8	0.541	3.31	270	<1.00	<1.00	15.7	<1.00	<1.00	<1.00	<1.00	<1.00	12.2	<1.00	2.2	1.37	0.666	2.036	<5.00	<1.00
7/13/16	43.56	-56.7	1.21	435	23.9	9.66	6.9	7	<1,000	48,800	15.6	0.634	3.4	234	<1.00	1.2	18	<1.00	<1.00	<1.00	<1.00	<1.00	8.4	<0.2	1.7	2.78	0.811	3.591	<5.00	<1.00
9/13/16	43.14	55	3.16	147	24	4.61		6.8	<1,000	21,600	6.37	0.119	7.57	149	<1.00	1.5	26.4	<2.00	<1.00	2	<1.00	1.1	5.04	<0.2	1	<0.193	<1.72	<1.913	<5.00	<1.00
11/17/16	43.32	134.2	2.41	281	22.8	5.04	6.84	6.9	<1,000	30,480	10.7	0.33	4.12	174	<1.00	2.9	23.3	<2.00	<1.00	1	<1.00	1	4.16	<0.2	1.1	<0.53	<2.15	<2.68	<5.00	<1.00
1/19/17	44.85	41.7	0.98	361	18.2	6.43	10.36	10.5	<1,000	14,830	17.1	0.534	9.54	204	<1.00	2.5	54.3	<2.00	<1.00	<1.00	<1.00	<1.00	21.3	<0.2	4.7	<0.237	<1.94	<2.177	<5.00	<1.00
3/27/17	44.04	130.1	0.8	367	19.1	7.27	7.14	7.4	<1,000	38,600	17.15	0.442	5.4	27	<1.00	1.3	39.7	<2.00	<1.00	<1.00	<1.00	<1.00	11.8	<0.2	1.9	0.944	<0.487	0.944	<5.00	<1.00
5/25/17	44.33	-85	1.01	506	20	7.36	7.07	7.4	<1,000	32,340	16.42	0.368	4.95	241	<1.00	1.2	128	<2.00	<1.00	3.9	1.2	<1.00	39.8	<0.2	2.7	0.63	<1.29	0.63	<5.00	<1.00
7/25/17	45.00	-18	0.4	493	22.2	5.66	11.31	7.7	<1,000	41,510	19.45	0.515	5.51	196	<1.00	1	190	<2.00	<1.00	1.8	<1.00	<1.00	34.5	<0.2	3.7	<0.424	<1.46	<1.884	<5.00	<1.00
9/20/17	45.34	-69.7	0.48	379	23.9	6.03	10.8	8.4	<1,000	29,490	19.7	0.545	6	167																
3/13/18	44.17	4	0.82	459	17.6	6.17	7.99	8	86.3 J	56,920	19	0.42	5.92	263																
9/19/18	44.03	-52.2	1.43	703	24.2	7.13	8.46	7.4	38.1	54,300	27.9	0.46	8.23	187																
11/28/18	44.14	27.9	1.47	554	20.5	6.41		7.3	52.5	53,900	25	0.422	8.64	297																
3/18/19	44.25	101	1.12	576	17.7	7.23	7.38	7.1	67.6	63,400	26.7	0.46	7.19	334									9.8							
5/20/19	43.49	94.5	0.57	675	20.1	6.23	7.12	7	65.9		27.5		6.92	343																
9/17/19	44.35	29.1	0.29	681	24	6.86	7.31	6.7	56.80 J	81,200	28.6	0.43	9.64	373									9.7							
3/12/20	45.18	66.4	1.73	570	17.9	5.86	7.32	7	122 J	78,600	27.5	0.43	7.13	382									12.9							
5/12/20	44.40	46	1.06	649	17.9	7.53	7.34	7	<38.458	90,700	27.5	0.42	7.14	368																
MW-LF-11																														
11/17/16	40.23	199.3	0.67	167	23.3	3.2	6.62	6.3	<1,000	18,340	5.68	0.407	1.73	94	<1.00	1.2	<10	<2.00	<1.00	<1.00	<1.00	<1.00	4.33	<0.2	<1.00	1.69	<1.13	1.69	<5.00	<1.00
1/19/17	41.04	85.7	3.24	137	19.2	9.15	6.58	6.4	<1,000	15,600	3.04	0.337	5.13	89	<1.00	1.4	<10	<2.00	<1.00	4.5	<1.00	<1.00	3.85	<0.2	<1.00	1.16	<1.72	1.16	<5.00	<1.00
3/27/17	40.47	188	1.57	136	20.2	9.26	6.46	6.4	<1,000	16,600	5.04	0.31	1.45	101	<1.00	<1.00	<10	<2.00	<1.00	1.4	<1.00	<1.00	3.48	<0.2	<1.00	5.5	<0.528	5.5	<5.00	<1.00
5/25/17	40.62	-7.5	1.28	250	20.6	7.28	7	7	<1,000	19,320	5.16	0.336	1.34	98	<1.00	<1.00	<10	<2.00	<1.00	1	<1.00	<1.00	4	<0.2	<1.00	0.435	<1.01	0.435	<5.00	<1.00
7/25/17	41.05	-1.9	0.45	317	22.8	5.16	6.6	7.1	<1,000	20,050	5.99	0.324	1.47	105	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	4.51	<0.2	<1.00	4.55	<0.86	4.55	<5.00	<1.00
9/20/17	41.38	78.2	0.6	291	24.7	6.58	6.79	6.7	<1,000	20,180	6.1	0.368	1.8	110																
3/13/18	40.59	59.2	1.17	150	17.5	5.76	6.53	6.3	<1,000	16,260	5.84	0.25	1.77	98																
9/19/18	40.83	55.6	0.34	365	24.7	7.57	6.6	6.4	<21.9	19,500	6.59	0.35	1.44	108																
11/28/18	40.99	90.9	1.21	164	21.4	5.82		6.2	25.3	14,600	5.13	0.284	2.2	70																
3/18/19	40.65	194	1.07	153	17.7	7.69	6.52	6.2	<38.458	14,700	5.58	0.28	1.85	71									3.2							
5/20/19	39.94	151	0.65	188	19.2	5.56	6.51	6.4	<38.458		5.95		1.41	89																
9/17/19	40.68	146	0.55	294	23.8	6.2	6.81	6.6	54.20 J	23,000	5.96	0.36	2.06	108									4							
3/12/20	41.04	171	3.07	132	18	6.47	6.38	6	43.70 J	13,300	4.3	0.2	3.54	93									2.76							
5/12/20	40.15	93	1.13	234	18.4	7.59	6.72	6.5	<38.458	25,300	6.54	0.34	1.47	97																
MW-LF-20																														
5/11/16	38.90	14.8	3.91	909	23.3	1.2	6.87	6.7	<1,000	122,000	7.81	0.127	35.67	510	<1.00	1.7	52.8	<1.00	<1.00	<1.00	1.5	<1.00	3.47	<1.00	2.9	0.383	0.781	1.164	<5.00	<1.00
7/13/16	39.29	-1.8	0.25	889	23.4	20.7	6.84	6.1	<1,000	169,000	9	0.137	22.8	648	<1.00	4.5	53.7	<1.00	<1.00	<1.00	3.2	<1.00	3.75	<0.2	1.8	7.08	0.638	7.718	<5.00	<1.00
9/13/16	39.94	-10	1.99	1100	23.8	9.67		6.5	<1,000	173,000	8.92	0.193	15.8	668	<1.00	6.8	55.7	<2.00	<1.00	<1.00	2.6	<1.00	4.08	<0.2	1.8	<0.366	<1.77	<2.136	<5.00	<1.00
11/16/16	40.21	-3.1	1.36	1100	23	4.64	6.83	6.6	<1,000	149,400	9.44	0.231	16.7	646	<1.00	3.8	52.1	<2.00	<1.00	<1.00	1.8	<1.00	5.51	<0.2	1.5	<0.28	<1.67	<1.95	<5.00	<1.00
1/19/17	39.47	-26.3	0.89	1090	21.5	4.95	6.75	6.6	<1,000	154,000	10.2	0.285	12.1	624	<1.00	5.2	47.6	<2.00	<1.00	<1.00	1.9	<1.00	5.19	<0.2	1.4	<5.9	<2.13	<8.03	<5.00	<1.00
3/27/17	39.09	103.3	0.54	912	22.8	5.47	6.73	6.5	<1,000	157,000	10.05	0.239	10.3	644	<1.00	4	54.1	<2.00	<1.00	<1.00	1.3	<1.00	5.04	<0.2	1.1	0.566	<0.551	0.566	<5.00	<1.00
5/23/17	39.25	5.6	0.73	1065	22.1	9.56	6.82	6.3	<1,000	158,900	9.06	0.182	9.91	619	<1.00	4.2	54	<2.00	<1.00	<1.00	1.4	<1.00	5.86	<0.2	1.1	<0.387	<1.38	<1.767	<5.00	<1.00
7/25/17	39.91	-6.1	0.45	1077	22.1	5.79	6.78	6.5	<1,000	155,700	9.7	0.175	9.24	663	<1.00	4.6	54.6	<2.00	<1.00	<1.00	1.4	<1.00	6.99	<0.2	<1.00	<0.581	<1.01	<1.591	<5.00	<1.00
9/20/17	40.60	-6.2	0.56	1100	23.4	5.4	6.86	6.5	<1,000	148,900	9.8	0.264	9.1	631																
3/13/18	39.52	49.5	0.28	958	19.9	9.14	7.05	6.6	212 J	142,900	8.32	0.21	10.8	609																
9/19/18	40.55	-10.9	0.31	1331	23.9	9.47	6.86	6.6	204	142,000	10	0.21	7.41	634																
11/28/18	40.60	32.3	0.47	1066	21	6.8		6.5	199	123,000	10.3	0.185	6.81	591																
3/18/19	39.43	57.7	0.42	1014	21	9.95	7.07	6.6	188	134,000	11	0.25	8.67	603									6.1							
5/21/19	39.50	46.9	0.39	1064	21.8	13.7		6.7						712																
9/17/19	40.59	-24.7	0.28	1032	23.8	6.42	6.99	6.4	216	135,000	10.7	0.22	7.05	604									8.1							
3/11/20	39.63	12.4	0.44	1057	21.9	8.74	6.91	6.6	242	157,000	11.6	0.24	7.66	671									8.4							
5/12/20	39.40	48.4	1.84	1036	20.6	9.87	7.01	6.6	228	165,000	11.34	0.22	7.43	626																
MW-LF-21																														
5/11/16	37.17	19.7	3.28	804	22.3	2.04	7.115	7	<1,000	89,100	7.86	0.1555	30.35	478.5	<1.00	<1.00	32.45	<1.00	<1.00	<1.00	<1.00	<1.00	2.465	<0.6	3.25	0.437	0.944	1.381	<5.00	<1.00
7/13/16	38.86	18	0.18	793	24.1	15.6	6.74	6.4	<1,000	111,000	9.2	0.136	17.9	545	<1.00	2.1	27.2	<1.00	<1.00	<1.00	2	<1.00	4.69	<0.2	1.8	1.24	0.422	1.662	<5.00	<1.00
9/13/16	40.48	-7	1.01	1030	26.7	5.64		6.7	<1,000	139,000	10	0.176	12.7	646	<1.00	4	36.6	<2.00	<1.00	<1.00	2.4	<1.00	5.85	<0.2	1.6	0.679	<2.72	0.679	<5.00	<1.00
11/16/16	40.83	-3.1	0.57	1081	23.3	4.1	6.78	6.6	<1,000	129,000	10.1	0.233	10.4	710	<1.00	2.1	34.7	<2.00	<1.00	<1.00	1.2	<1.00	6.04	<0.2	<1.00	<0.778	<1.98	<2.758	<5.00	<1.00
1/19/17	39.33	36.1	0.63	1050	21.8	9.39	6.82	6.7	<1,000	128,600	11	0.288	9.78	590	<1.00	3	33.5	<2.00	<1.00	<1.00	2.1	<1.00	6.05	<0.2	1.3	<0.261	<1.99	<2.251	<5.00	<1.00
3/28/17	38.19	73.7	0.44	835	20.1	9.18	6.94	6.7	<1,000	130,000	10.76	0.243	8.42	613	<1.00	2.3	33.2	<2.00	<1.00	<1.00	2.1	<1.00	5.26	<0.2	1.1	0.47	<1.12	0.47	<5.00	<1.00
5/23/17	38.44	0.9	0.77	1026	21.5	6.47	6.86	6.5	<1,000	130,800	9.91	0.172	9.35	575	<1.00	2.8	34.5	<2.00	<1.00	<1.00	1.2	<1.00	6.06	<0.2	1.1	0.326	<1.45	0.326	<5.00	<1.00
7/25/17	39.81	10.9	0.47	1035	22.4	6.31	6.6	6.86	<1,000	127,300	10.1	0.161	8.37	621	<1.00	2.5	31.9	<2.00	<1.00	<1.00	<1.00	<1.00	7.26	<0.2	<1.00	<0.528	<1.15	1.678	<5.00	<1.00
9/20/17	40.94	17.3	0.38	1065	24.4	5.22	6.95	6.5	<1,000	125,800	10.36	0.258	8.7	594																
3/13/18	38.22	133	0.46	1016	18.2	7.28	7	6.6	195 J	122,400	11.3	0.21	8.27	575																
9/19/18	41.72	-0.5	0.87	1312	23.8	8.59	6.97	6.6	192	120,000	10.4	0.22	7.32	911																
11/29/18	42.02	72.1	0.41	1057	20	7.03		6.6	238	127,000	10.9	0.385	8.38	611																
3/18/19	39.82	109	0.26	994	20.6	9.21	7.1	6.7	182	116,000	11.3	0.26	9.68	638									5.6							
5/21/19	40.31	-25	0.34	1047	22.1	9.63		6.7						584																
9/18/19	43.23	-23.4	0.33	1001	23.4	5.93	7.04	6.5	221	121,000	10.3	0.23	7.42	628									7.9							
3/11/20	40.37	36.7	0.47	1008	21.2	7.23	7	6.6	233	132,000	11	0.24	8.13	643									7.79							
5/13/20	40.13	-7.8	1.58	1011	20.1	9.32	7.06	6.6	212	140,000	11	0.23	7.88	615																

TABLE 2
RESULTS OF FIELD AND LABORATORY ANALYSES OF GROUNDWATER, SURFACE WATER AND LEACHATE SAMPLES
EPA CCR RULE BACKGROUND AND COMPLIANCE GROUNDWATER MONITORING WELLS
Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

	Groundwater Monitoring Indicator Parameters						40 CFR Part 257 Appendix III Detection Monitoring Parameters								40 CFR Part 257 Appendix IV Assessment Monitoring Constituents															
	Groundwater Elevation ft	ORP mV	DO mg/L	Specific conductance u mhos/cm	Temperature degrees C	Turbidity NTU 10	pH (lab) S.U.	pH (field) S.U.	Boron ug/L BG	Calcium ug/L BG	Chloride mg/L BG	Fluoride mg/L 4 mg/L	Sulfate mg/L BG	TDS mg/L BG	Antimony ug/L 6 ug/L	Arsenic ug/L 10 ug/L	Barium ug/L 2000 ug/L	Beryllium ug/L 4 ug/L	Cadmium ug/L 5 ug/L	Chromium ug/L 100 ug/L	Cobalt ug/L BG	Lead ug/L 15 ug/L	Lithium ug/L BG	Mercury ug/L 2 ug/L	Molybdenum ug/L BG	Radium 226 pCi/L 5 pCi/L	Radium 228 pCi/L 5 pCi/L	Radium 226 + 228 pCi/L 5 pCi/L	Selenium ug/L 50 ug/L	Thallium ug/L 2 ug/L
MW-LF-22																														
5/11/16	28.75																													
7/13/16	34.00																													
9/13/16	36.55																													
11/16/16	36.13																													
1/19/17	34.28																													
3/28/17	32.90																													
5/24/17	33.04																													
7/25/17	34.79																													
9/21/17	36.74																													
3/13/18	33.00																													
9/20/18	37.00																													
3/18/19	33.55																													
5/21/19	33.72																													
9/18/19	37.36																													
3/11/20	33.96																													
MW-LF-22D																														
5/11/16	24.32	-10.2	9.87	74.2	24.7	1.1	7.36	7.3	<1,000	85,200	11.2	0.304	135	476	<1.00	2.3	15.8	<1.00	<1.00	5.9	<1.00	<1.00	5.78	<0.2	37	1.49	0.544	2.034	<5.00	<1.00
7/13/16	34.77	-34.5	0.3	918	29.6	13	7.2	6.9	<1,000	97,800	10.1	0.219	119	622	<1.00	3.1	10.6	<1.00	<1.00	<1.00	<1.00	<1.00	6.23	<0.2	15.7	1.07	1.81	2.88	<5.00	<1.00
9/13/16	36.53	-21	0.98	917	27.2	9.73		7	<1,000	96,800	9.96	0.274	79.4	602	<1.00	4.7	<10	<2.00	<1.00	<1.00	<1.00	<1.00	8.78	<0.2	12.2	0.826	<2.98	0.826	<5.00	<1.00
11/16/16	36.25	23.6	0.5	954	23.1	4.09	7.13	7	<1,000	85,320	9.75	0.311	65.7	529	<1.00	4.6	<10	<2.00	<1.00	<1.00	<1.00	<1.00	10.2	<0.2	9.1	0.324	2.3	2.624	<5.00	<1.00
1/19/17	34.09	54.5	0.57	936	21.6	9.25	7.26	7.1	<1,000	89,200	10.2	0.366	63	544	<1.00	1.9	10.9	<2.00	<1.00	2.4	<1.00	<1.00	16.1	<0.2	8.8	<0.426	<2.08	<2.506	<5.00	<1.00
3/28/17	32.78	143.7	0.98	774	22.6	8.93	7.22	7.1	<1,000	79,800	10.18	0.305	60.9	533	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	10.5	<0.2	8.6	<0.195	<1.46	<1.655	<5.00	<1.00
5/24/17	33.39	151	1.07	885	22.2	6.36	7.18	6.9	<1,000	86,000	9.35	0.252	77	550	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	12.4	<0.2	9.2	0.273	<1.16	0.273	<5.00	<1.00
7/25/17	35.28	-87.9	0.48	947	24	9.22	7.17	6.9	<1,000	89,040	9.97	0.25	72.67	592	<1.00	1.4	<10	<2.00	<1.00	<1.00	<1.00	<1.00	12.9	<0.2	8.1	<0.641	<1.6	<2.241	<5.00	<1.00
9/21/17	36.60	200	0.34	963	22.9	6.38	7.25	6.7	<1,000	86,790	10	0.251	65.3	581																
3/13/18	32.88	123	0.98	892	17.1	6.84	7.36	7	314 J	78,000	10.6	0.29	51.5	533																
9/20/18	36.89	-3.1	0.19	1250	23.7	7.45	7.15	6.8	337	82,600	10	0.3	50.3	567																
11/29/18	36.41	109	0.41	932	19.2	6.85		6.9	363	83,300	9.94	0.293	45.7	546																
3/18/19	33.38	176	0.85	875	21.4	6.87	7.41	7	307	73,400	10.4	0.31	48.9	543									15.7							
5/21/19	33.94	98.5	0.93	930	22.4	6.12		7.1	339				49	547																
9/18/19	37.25	9	0.29	912	22.7	6.17	7.32	6.8	357	84,000	10.2	0.28	48.1	594									15.3							
3/11/20	33.87	76.5	1.06	924	22.1	6.22	7.31	7	384	86,100	10.5	0.3	44.4	585									19.8							
5/13/20	34.21	74.1	1.66	909	20.9	7.85	7.34	7	348	86,500	10.5	0.31	45.2	587																
MW-LF-23																														
5/11/16	30.33																													
7/13/16	33.73																													
9/13/16	34.38																													
11/16/17	34.55																													
1/19/17	34.65																													
3/1/17	34.03																													
5/24/17	34.04																													
7/25/17	34.69																													
9/21/17	34.84																													
3/13/18	33.27																													
9/20/18	35.00																													
3/18/19	34.38																													
5/21/19	35.09																													
9/18/19	36.67																													
3/11/20	34.88																													
MW-LF-23D																														
5/11/16	34.01	4.8	3.79	515	25.9	2.4	7.62	7.2	<1,000	29,300	12.6	0.366	29.6	196	<1.00	<1.00	13.2	<1.00	<1.00	<1.00	<1.00	<1.00	2.52	<0.2	16.3	0.694	1.5	2.194	<5.00	<1.00
7/13/16	35.27	8.6	0.23	632	25.3	11.2	7.41	7.1	<1,000	65,400	14	0.313	44.4	456	<1.00	1.8	10.8	<1.00	<1.00	<1.00	<1.00	<1.00	4.8	<0.2	17.5	0.662	0.313	0.975	<5.00	<1.00
9/13/16	35.52	31	0.95	765	25.6	5.53		7.2	<1,000	70,300	14.3	0.331	35.5	474	<1.00	1.7	12.8	<2.00	<1.00	<1.00	<1.00	<1.00	4.71	<0.2	14.3	0.648	<1.29	0.648	<5.00	<1.00
11/16/16	36.14	76.4	0.47	826	24	3.24	7.27	7.1	<1,000	69,180	14.8	0.381	31.3	463	<1.00	2.8	<10	<2.00	<1.00	<1.00	<1.00	<1.00	5.69	<0.2	9.7	0.518	<1.97	0.518	<5.00	<1.00
1/19/17	36.72	57.6	2.23	807	21.8	7.22	7.35	7.2	<1,000	68,500	14.8	0.434	32.6	421	<1.00	1	10.7	<2.00	<1.00	<1.00	<1.00	<1.00	6.66	<0.2	9.5	0.617	<1.72	0.617	<5.00	<1.00
3/28/17	34.51	139.2	1.77	710	23.2	7.92	7.18	7.2	<1,000	71,700	14.8	0.361	29.89	483	<1.00	<1.00	10.5	<2.00	<1.00	<1.00	<1.00	<1.00	6.95	<0.2	9.9	<0.157	1.8	1.8	<5.00	<1.00
5/24/17	34.97	3.8	0.87	794	21.7	5.69	7.28	7	<1,000	71,880	13.9	0.317	31.39	492	<1.00	1.1	<10	<2.00	<1.00	<1.00	<1.00	<1.00	8.9	<0.2	12.8	0.471	<1.8	0.471	<5.00	<1.00
7/25/17	35.77	22.6	1.13	850	22.7	7.85	7.4	6.9	<1,000	75,000	15.6	0.318	30.75	512	<1.00	1.9	<10	<2.00	<1.00	<1.00	<1.00	<1.00	9.21	<0.2	10.8	0.745	<1.23	0.745	<5.00	<1.00
9/21/17	35.60	174	0.49	861	22.8	6.83	7.33	6.9	<1,000	74,060	14.5	0.309	28.6	495																
3/13/18	33.97	115	1.29	818	17.1	6.12	7.26	7.1	265 J	66,290	16.1	0.38	29	471																
9/20/18	35.97	-22.5	0.43	1132	29.3	7.07	7.44	7	281	70,200	14.8	0.39	28.2	498																
11/29/18	35.31	68.8	0.53	839	19.9	6.17		7	285	70,700	15.2	0.386	26.7	514																
3/19/19	35.61	163	1.05	795	19.1	7.11	7.49	7.2	303	62,400	15.2	0.4	27	500									15.2							
5/21/19	36.36	73.9	0.37	843	21.9	5.69		7.1	288					480																
9/18/19	36.67	7.8	0.4	820	23.6	6.27	7.38	6.9	298	65,600	15	0.37	25.4	530									12.9							
3/11/20	35.47	11.9	1.23	832	21.6	5.69	7.41	7.1	333	73,000	15.5	0.41	25.2	528									24.4							
5/13/20	35.69	77.2	1.21	823	20.6	6.83	7.39	7.1	314	73,700	15.3	0.39	25.3	499																

TABLE 2
RESULTS OF FIELD AND LABORATORY ANALYSES OF GROUNDWATER, SURFACE WATER AND LEACHATE SAMPLES
EPA CCR RULE BACKGROUND AND COMPLIANCE GROUNDWATER MONITORING WELLS
Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

	Groundwater Monitoring Indicator Parameters						40 CFR Part 257 Appendix III Detection Monitoring Parameters								40 CFR Part 257 Appendix IV Assessment Monitoring Constituents														
	Groundwater Elevation ft	ORP mV	DO mg/L	Specific conductance u mhos/cm	Temperature degrees C	Turbidity NTU 10	pH (lab) S.U.	pH (field) S.U.	Boron ug/L BG	Calcium ug/L BG	Chloride mg/L BG	Fluoride mg/L 4 mg/L	Sulfate mg/L BG	TDS mg/L BG	Antimony ug/L 6 ug/L	Arsenic ug/L 10 ug/L	Barium ug/L 2000 ug/L	Beryllium ug/L 4 ug/L	Cadmium ug/L 5 ug/L	Chromium ug/L 100 ug/L	Cobalt ug/L BG	Lead ug/L 15 ug/L	Lithium ug/L BG	Mercury ug/L 2 ug/L	Molybdenum ug/L BG	Radium 226 pCi/L 5 pCi/L	Radium 228 pCi/L 5 pCi/L	Radium 226 + 228 pCi/L 5 pCi/L	Selenium ug/L 50 ug/L	Thallium ug/L 2 ug/L
MW-LF-24																													
5/11/16	36.34	36.9	3.91	877	22.4	3.01	6.84	6.6	<1,000	126,000	17.9	0.338	20.6	509	<1.00	<1.00	58	<1.00	<1.00	<1.00	<1.00	<1.00	3.93	<0.2	2.2	0.956	1.54	2.496	<5.00	<1.00
7/13/16	37.35	30.3	0.27	648	24.4	12.5	6.69	5.8	<1,000	118,000	20.8	0.399	42	495	<1.00	<1.00	46	<1.00	<1.00	<1.00	2.2	<1.00	5.07	<0.2	<1.00	0.638	-0.0616	0.5764	<5.00	<1.00
9/13/16	37.40	-13	0.88	938	27.8	5.74		6.6	<1,000	145,000	19	0.371	24.6	539	<1.00	3.2	50.8	<2.00	<1.00	<1.00	2.2	<1.00	3.81	<0.2	1.5	<0.359	2.03	2.03	<5.00	<1.00
11/17/16	36.39	-11.4	0.79	900	24.3	4.95	6.42	6.2	<1,000	128,200	18.2	0.343	22	520	<1.00	3.4	43.2	<2.00	<1.00	<1.00	2.6	<1.00	<2.00	<0.2	<1.00	0.533	1.55	2.083	<5.00	<1.00
1/20/17	35.47	50.5	0.73	974	21.6	9.85	6.69	6.5	<1,000	147,000	17.8	0.46	12	543	<1.00	1.6	46.4	<2.00	<1.00	<1.00	2.6	<1.00	2.92	<0.2	1.2	2.36	<1.26	2.36	<5.00	<1.00
3/28/17	35.34	85.2	0.32	840	22.8	9.28	6.66	6.5	<1,000	146,000	17.41	0.46	9.28	561	<1.00	1.5	51.1	<2.00	<1.00	<1.00	1.6	<1.00	4.26	<0.2	1.1	<0.253	2.12	2.12	<5.00	<1.00
5/24/17	36.05	-13.4	0.64	917	21.7	6.12	6.78	6.4	<1,000	138,700	16.37	0.39	9.06	510	<1.00	<1.00	46.1	<2.00	<1.00	<1.00	1.4	<1.00	3.84	<0.2	1	0.266	<1.63	0.266	<5.00	<1.00
7/26/17	37.05	-19.2	1.44	935	21.8	6.15	6.43	6.4	<1,000	136,100	21.58	0.362	31.99	450	<1.00	2.4	42.1	<2.00	<1.00	<1.00	1.6	<1.00	5	<0.2	<1.00	0.485	1.08	1.565	<5.00	<1.00
9/21/17	37.59	-5.1	0.5	902	24.3	5.36	6.54	6.3	<1,000	123,000	22.4	0.305	34.8	493																
3/13/18	36.45	49.7	0.25	887	18.8	6.39	6.76	6.5	80 J	133,300	18.7	0.47	11	484																
9/20/18	38.30	-1.6	0.47	1208	23.7	6.89	6.52	6.4	51.1	130,000	20.3	0.4	20.7	505																
11/29/18	37.45	43.1	0.41	878	23.6	7.48		6.3	68.7	128,000	21.9	0.326	22.6	507																
3/19/19	36.14	91.7	0.48	861	19.9	9.98	6.77	6.5	62.6	119,000	19.4	0.45	14.9	509									5.4							
5/21/19	36.85	-35.9	0.25	888	21.8	5.61		6.5						485																
9/18/19	37.88	-32.4	0.52	845	24.1	6.54	6.88	6.4	80.30 J	114,000	18.2	0.46	11.2	549									7.3							
3/11/20	36.85	16.4	0.42	816	21.1	8.47	6.71	6.3	114 J	124,000	19.5	0.47	14.7	497									11							
5/13/20	37.19	-28.6	1.86	818	21.5	7.58	6.8	6.4	73.60 J	131,000	19.2	0.49	13.7	482																
MW-LF-25																														
5/11/16	35.53	25.4	4.83	727	22.7	5.76	7.22	6.9	<1,000	81,500	21.9	0.424	16.9	423	<1.00	<1.00	29.9	<1.00	<1.00	<1.00	<1.00	<1.00	2.36	<0.2	4.8	0.894	1.18	2.074	<5.00	<1.00
7/13/16	36.49	29.1	0.7	709	23.1	15.2	6.99	6.5	<1,000	110,000	21.6	0.538	20.1	523	<1.00	<1.00	20.8	<1.00	<1.00	<1.00	<1.00	<1.00	5.78	<0.2	3.8	0.309	1.27	1.579	<5.00	<1.00
9/13/16	36.78	81	1.07	886	25.7	6.17		6.9	<1,000	119,000	20.5	0.733	23.1	545	<1.00	<1.00	20.2	<2.00	<1.00	<1.00	<1.00	<1.00	7.42	<0.2	4.6	0.415	<1.42	0.415	<5.00	<1.00
11/17/16	35.93	98.7	1.11	929	24.3	4.04	6.94	6.8	<1,000	110,600	19.9	0.839	29.6	537	<1.00	<1.00	18.4	<2.00	<1.00	<1.00	<1.00	<1.00	6.8	<0.2	4	0.694	1.3	1.994	<5.00	<1.00
1/19/17	34.63	57.5	0.94	898	22.5	6.93	7.11	6.9	<1,000	107,700	22.3	0.723	40.3	519	<1.00	<1.00	16	<2.00	<1.00	<1.00	<1.00	<1.00	8.16	<0.2	4.1	0.306	<1.14	0.306	<5.00	<1.00
3/28/17	34.59	110.9	0.48	768	22.5	6.97	7.05	6.8	<1,000	110,000	22.7	0.63	41.24	534	<1.00	<1.00	17.4	<2.00	<1.00	<1.00	<1.00	<1.00	9.06	<0.2	3.7	<0.255	<1.62	<1.875	<5.00	<1.00
5/24/17	35.24	-2.4	1.14	889	21.7	5.63	7.02	6.8	<1,000	110,100	21.7	0.546	51.3	536	<1.00	<1.00	14.6	<2.00	<1.00	<1.00	<1.00	<1.00	10.5	<0.2	3.7	0.202	<1.10	0.202	<5.00	<1.00
7/26/17	36.18	1.3	1.87	972	21.6	6.54	7.11	6.7	<1,000	112,700	23.41	0.53	49.187	566	<1.00	1.2	15.6	<2.00	<1.00	<1.00	<1.00	<1.00	10.8	<0.2	3.5	<0.523	1.03	1.03	<5.00	<1.00
9/21/17	36.69	29.4	0.64	1035	23.2	6.52	7.13	6.7	<1,000	117,200	21.8	0.601	51.8	572																
3/13/18	35.33	68.1	0.95	957	19.2	6.66	7.08	6.8	143 J	123,100	23.2	0.66	73.2	564																
9/20/18	37.24	-21.2	0.21	1425	23.7	6.36	6.98	6.7	82.6	128,000	19.4	0.93	135	688																
11/29/18	36.67	360	0.35	1154	21.7	6.78		6.9	113	136,000	19.6	0.978	156	686																
3/19/19	34.76	159	0.32	1075	20.4	6.74	7.19	6.8	103	133,000	19.7	0.76	188	728									11							
5/21/19	35.54	118	0.97	1145	21.6	5.85		6.9				0.75		715																
9/18/19	37.20	-41.8	0.26	1136	23.5	6.86	9.2	6.7	105 J	136,000	18.9	0.65	171	743									12.4							
3/11/20	35.54	86.7	1.22	1170	21.4	5.86	7.11	6.7	135 J	157,000	21.2	0.84	215	792									14.4							
5/13/20	36.27	116	2.8	1163	21.1	7.17	7.12	6.7	101 J	165,000	20.3	0.75	216	770																
MW-LF-26																														
5/11/16	30.15	-27.9	3.23	1559	25.4	1.01	6.56	6.4	<1,000	160,000	154	0.118	73.9	876	<1.00	1.1	81.8	<1.00	<1.00	<1.00	6.1	<1.00	4.41	<0.2	<1.00	1.18	1.49	2.67	<5.00	<1.00
7/13/16	30.70	-51.3	0.35	1219	24.7	15	6.43	6.2	<1,000	144,500	162	0.1085	88.45	865	<1.00	2.8	74.5	<1.00	<1.00	<1.00	12.35	<1.00	2.505	<0.2	<1.00	1.203	1.81	3.013	<5.00	<1.00
9/13/16	31.21	-3	0.98	1370	28.5	5.38		6.2	<1,000	168,000	163	0.161	82.4	865	<1.00	4	80.6	<2.00	<1.00	<1.00	10.5	<1.00	<2.00	<0.2	<1.00	1.1	1.99	3.09	<5.00	<1.00
11/17/16	31.16	-15.6	1.01	1517	22.1	4.52	6.29	6	<1,000	165,000	147	0.196	76.3	860	<1.00	5	76.8	<2.00	<1.00	<1.00	8	<1.00	<2.00	<0.2	<1.00	1.49	2.25	3.74	<5.00	<1.00
1/20/17	30.45	-6	1.18	1542	21.2	6.43	6.28	6.1	<1,000	164,200	155	0.215	75.6	884	<1.00	5	74.7	<2.00	<1.00	<1.00	7.4	<1.00	2.29	<0.2	<1.00	0.604	<2.03	0.604	<5.00	<1.00
3/28/17	29.81	22.2	0.44	1340	24	6.28	6.25	6	<1,000	165,000	151.5	0.232	71.5	910	<1.00	4.4	78.9	<2.00	<1.00	<1.00	7.1	<1.00	2.75	<0.2	<1.00	0.795	<1.76	0.795	<5.00	<1.00
5/24/17	29.96	-14.8	0.79	1452	22.4	5.74	6.29	5.9	<1,000	157,800	68	0.165	35.33	878	<1.00	4.5	72.9	<2.00	<1.00	<1.00	7.2	<1.00	2.86	<0.2	<1.00	<0.372	<1.36	<1.732	<5.00	<1.00
7/26/17	30.89	-19.1	0.83	1540	19.9	7.23	6.41	6	<1,000	167,900	155.1	0.193	76.86	875	<1.00	4.5	72.6	<2.00	<1.00	<1.00	6.8	<1.00	2.49	<0.2	<1.00	8.26	<1.16	8.26	<5.00	<1.00
9/21/17	31.76	-19.4	1.22	1639	26.3	5.27	6.46	6	<1,000	174,800	161	0.185	73.3	2802																
3/13/18	30.12	-6.5	0.3	1529	19.5	7.31	6.42	6.1	134 J	167,900	154	<0.2	71.6	878																
9/20/18	31.58	-24.1	0.23	1868	23.2	7.03	6.38	6.1	142	166,000	147	0.21	74.8	512																
11/29/18	31.67	0.1	0.72	1601	21.6	6.7		6	152	177,000	150	0.334	72.6	924																
3/19/19	30.31	-11	0.61	1506	20	6.95	6.6	6.2	158	155,000	152	0.24	76.7	918									3.2							
5/21/19	30.13	-36.4	0.79	1602	23.6	6.15		6.2			147		74.3	929																
9/18/19	31.51	-24.1	0.32	1536	24.6	5.87	6.57	6	169 J	163,000	145	0.21	71.6	957									3.9							
3/11/20	30.96	-27.9	0.49	1535	21.9	6.82	6.59	6.1	193 J	179,000	146	0.25	75	937									4.17							
5/13/20	30.60	-28.3	3.01	1546	22.8	6.11	6.51	6.1	169 J	183,000	149	0.22	73.8	924																
MW-LF-27																														
11/17/16	44.24	99.1	3.88	355	22	5.4	7.28	7.2	<1,000	53,020	4.85	0.318	5.69	189	<1.00	1.2	26.5	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	1.5	0.943	<1.75	0.943	<5.00	<1.00
1/20/17	46.76	6	1.17	519	20.4	8.37	7.07	6.9	<1,000	81,640	10.1	0.288	12	294	<1.00	<1.00	24.6	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	1.6	1.06	1.46	2.52	<5.00	<1.00
3/27/17	45.54	121.7	0.34	467	20.9	8.03	6.98	6.8	<1,000	87,100	12.78	0.273	12.78	314	<1.00	<1.00	22.4	<2.00	<1.00	1.7	<1.00	<1.00	<2.00	<0.2	1.6	3.45	<0.558	3.45	<5.00	<1.00
5/23/17	45.10	-24.5	1.05	599	20.1	6.54	7.18	6.6	<1,000	94,600	12.94	0.244	13.97	330	<1.00	1.2	23.4	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	1.4	0.537	<1.51	0.537	<5.00	<1.00
7/25/17	46.01	-37.2	0.7	661	20.9	5.13	7.15	6.9	<1,000	94,600	16.51	0.265	35.14	332	<1.00	1.1	22.2	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	1.63	<1.31	1.63	<5.00	<1.00
9/20/17	47.11	-2.4	0.8	609	22.2	7.44	7.18	6.7	<1,000	86,730	14.2	0.267	32	318																
3/13/18	44.77	4.6	0.27	448	17.6	5.37	7.02	6.8	<1,000	69,670	13.3	0.21	15.5	265																
9/19/18	44.79	-93.3	0.39	757	22.3	6.14	7.14	7.2	22.7	79,700	13.3	0.27	16.8	315																
11/28/18	45.60	-60.4	0.3	582	19.6	6.03		7	45.7	62,100	15.4	0.215	13.2	169																
3/18/19	45.89	-1.5	0.27	435	18	5.84	7.14	6.7	98.2	55,900	14.6	0.23	14.1	274									2.2							
5/20/19	43.81	-73.1	0.31	531	19.9	6.29	7.08	7	<38.458		15.2		7.96	254																
9/17/19	45.01	-101	0.28	555	23.1	7.24	7.22	6.8	42.60 J	62,500	15.2	0.23	10.4	239									1.60 J							
3/12/20	48.09	12.3	0.85	396	18	6.36	7.1	6.5	58.40 J	51,300	14.5	0.16	20.9	235									2.77							
5/12/20	45.44	-90.3	1	502	18.4	7.69	7.27	6.9	<38.458	75,700	13.9	0.21	14.8	292																

TABLE 2
RESULTS OF FIELD AND LABORATORY ANALYSES OF GROUNDWATER, SURFACE WATER AND LEACHATE SAMPLES
EPA CCR RULE BACKGROUND AND COMPLIANCE GROUNDWATER MONITORING WELLS
Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

	Groundwater Monitoring Indicator Parameters						40 CFR Part 257 Appendix III Detection Monitoring Parameters								40 CFR Part 257 Appendix IV Assessment Monitoring Constituents														
	Groundwater Elevation ft	ORP mV	DO mg/L	Specific conductance u mhos/cm	Temperature degrees C	Turbidity NTU 10	pH (lab) S.U.	pH (field) S.U.	Boron ug/L BG	Calcium ug/L BG	Chloride mg/L BG	Fluoride mg/L 4 mg/L	Sulfate mg/L BG	TDS mg/L BG	Antimony ug/L 6 ug/L	Arsenic ug/L 10 ug/L	Barium ug/L 2000 ug/L	Beryllium ug/L 4 ug/L	Cadmium ug/L 5 ug/L	Chromium ug/L 100 ug/L	Cobalt ug/L BG	Lead ug/L 15 ug/L	Lithium ug/L BG	Mercury ug/L 2 ug/L	Molybdenum ug/L BG	Radium 226 pCi/L 5 pCi/L	Radium 228 pCi/L 5 pCi/L	Radium 226 + 228 pCi/L 5 pCi/L	Selenium ug/L 50 ug/L	Thallium ug/L 2 ug/L
MW-LF-28																													
11/17/16	40.68	131.1	5.49	226	23.1	3.96	6.86	6.6	<1,000	34,490	4.05	0.12	4.85	120	<1.00	<1.00	22	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	0.897	<1.32	0.897	<5.00	<1.00
1/19/17	41.81	79	3.28	200	19.1	7.93	6.68	6.6	<1,000	29,900	3.98	0.146	0.827	96	<1.00	<1.00	10.1	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	0.792	<1.37	0.792	<5.00	<1.00
3/27/17	40.96	200.7	2.59	130	19	8.12	6.6	6.4	<1,000	23,800	3.68	0.145	0.92	95	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	2.51	<0.51	2.51	<5.00	<1.00
5/23/17	40.85	31.7	3.61	165	20.8	5.69	6.58	6.4	<1,000	17,300	3.98	0.0851	1.36	68	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	<0.337	<1.52	<1.857	<5.00	<1.00
7/25/17	41.66	-18.4	0.47	270	22.9	5.35	6.58	7	<1,000	18,440	3.86	0.0938	1.72	95	<1.00	<1.00	<10	<2.00	<1.00	<1.00	<1.00	<1.00	<2.00	<0.2	<1.00	1.39	<1.79	<1.39	<5.00	<1.00
9/20/17	41.88	90.9	0.65	230	24.3	5.95	6.64	6.7	<1,000	17,460	3.6	0.118	3.1	73																
3/13/18	40.86	65.1	2.35	146	17.5	5.6	6.67	6.4	<1,000	19,930	3.99	<0.2	3.12	76																
9/19/18	41.57	81.3	2.03	261	24.4	6.66	6.55	6	<21.9	12,000	3.65	<0.025	1.29	64																
11/28/18	41.62	57.4	2.82	139	21.3	5.62		6	14.3 J	10,600	3.92	0.0798 J	4.83	41.4																
3/18/19	41.25	208	2.3	110	17.2	6.64	6.5	6.1	<38.458	10,600	4.05	<0.10	2.96	67									1.6							
5/20/19	40.14	161	3.12	136	19.4	5.93	6.23	6.1	<38.458		4.01		1.63	45																
9/17/18	41.15	94	2.06	123	24.2	6.2	6.45	5.9	<38.458	12,000	4.45	<0.10	2.48	57									2.3							
3/12/20	42.04	174	3.19	126	17.8	6.04	6.19	5.9	<38.458	13,500	5.21	<0.10	5.11	68									2.04							
5/12/20	41.17	165	3.75	170	18.5	7.11	6.31	5.9	46.50 J	11,800	5.18	<0.10	2.11	59																
Landfill Leachate																														
10/18/17									14,000	699,000	529		1634	3257	18	15.4	43	<4.00	4.5	501	7.7	<4.00	2730	<0.2	5240				519	4.2
11/8/17									16,548	758,800					23.2	18.6	44.4	<4.00	4.1	681	9	<2.00	4396	<0.2	6520				476	5
9/19/18							6.84		14,000	736,000	423	<0.625	1728	3700	15.5	16.9	70.5	<0.57	3.6	283	5.2	0.23	1710	<0.071	2830				513	4.2
11/28/18									12,900	630,000	367	2.52	1610	3760	15.4	12.1	56.3	<2.00	3.03	157	4.26	<2.00	2580	<0.2	4110	0.573	<3.00	0.573	551	3.86
3/19/19							6.74		14,500	692,000	490	3.18	1819	3932	10.7	7.1	50.4	<0.598	2.9	186	3.4	<0.102	3380	<0.071	6040				500	3.4
3/11/20		71.3	7.31	4120	20.8	5.78	7.07	6.9	16,400	834,000	408	3.21	1807	3923									3350							
5/12/20		135	5.43	4638	20.2	8.41	7.12	6.7	21,400	893,000	561	3.33	1804	4326																
Leachate Pond Forebay																														
5/31/17										272,000													408		558					
6/12/17										445,500											<5.00		1406		2177					
Leachate Pond																														
5/31/17										281,000													515		984					
6/12/17										252,400											<5.00		367		898					
Surface Water Pond																														
5/31/17										12,600													<2.00		11.1					
6/12/17										15,240											<5.00		<2.00		<10					

Notes: Monitoring well locations highlighted in green are background monitoring locations.
Monitoring well locations highlighted in orange are down gradient compliance monitoring locations.
BG = Background; For those constituents for which a Maximum Contaminant Level (MCL) has not been established by the US EPA, detected concentrations in groundwater at compliance monitoring well locations are compared to concentrations detected in groundwater at background locations to determine if a statisticaly significant increase in concentrations above background levels is evident from the data.
Results shown in blue indicate the analyte was not detected above the indicated laboratory reporting limit (i.e., the value listed).

TABLE 3
Major Ions in Groundwater and Leachate
EPA CCR Rule Alternate Source Demonstration
DESC Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

Sample Location	Sampling Date	Major Ion Concentrations (mg/L)							
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	TDS
MW-LF-10	10/16/17	36	3.63	36.7	10.9	131	19.2	6.25	197
MW-LF-11	10/16/17	20.6	4.68	11.7	28.8	71.8	6.63	71.8	104
MW-LF-20	10/19/17	159	25.8	73.7	9.94	556	10.39	9.09	621.52*
MW-LF-21	10/19/17	46.2	8.33	52.7	19.1	121	4.23	97.5	300.66*
MW-LF-22D	10/18/17	87.7	32.1	89.8	12.6	439	10.3	63.2	559.1*
MW-LF-23D	10/18/17	75.4	26.2	86.6	10.6	397	15.3	28.3	480.6*
MW-LF-24	10/18/17	131	17.8	44.7	4.89	399	20.9	25.3	483.99*
MW-LF-25	10/18/17	116	29.2	65.7	7.48	428	22.7	50.6	548.48*
MW-LF-26	10/18/17	182	33.8	136	3.34	559	160	71.5	922.04*
MW-LF-27	10/18/17	86.9	6.6	31.1	6.32	223	6.94	11.2	282.86*
MW-LF-28	10/19/17	17.5	18.9	52.8	15.4	51.5	3.94	1.49	140.93*
Landfill Leachate	10/18/17	699	103	118	104	246	529	1634	3257

Sample Location	Sampling Date	Major Ion Concentrations (mg/L)							
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	TDS
MW-LF-10	3/13/18	56.92	7.569	49.02	7.387	245	19	5.92	263
MW-LF-11	3/13/18	16.26	3.989	10.2	2.146	71.4	5.84	1.77	98
MW-LF-20	3/13/18	142.9	23.28	66.74	9.959	609	8.32	10.8	609
MW-LF-21	3/14/18	122.4	31.97	67.8	9.719	564	11.3	8.27	575
MW-LF-22D	3/14/18	78	29.44	86.96	11.13	469	10.6	51.5	533
MW-LF-23D	3/14/18	66.29	23.73	83.16	9.688	426	16.1	29	471
MW-LF-24	3/14/18	133.3	20.38	47.02	5.822	477	18.7	11	484
MW-LF-25	3/14/18	123.1	31.82	71.64	7.478	451	23.2	73.2	564
MW-LF-26	3/14/18	167.9	31.72	133.9	2.98	580	154	71.6	878
MW-LF-27	3/13/18	69.67	6.073	29.91	5.182	227	13.3	15.5	265
MW-LF-28	3/13/18	19.93	2.12	5.699	1.381	51.1	3.99	3.12	76

Sample Location	Sampling Date	Major Ion Concentrations (mg/L)							
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	TDS
MW-LF-10	9/19/18	54.3	4.13	37.4	8.85	134.06	27.9	8.23	187
MW-LF-11	9/19/18	19.5	4.37	10.2	2.49	76.96	6.59	1.44	108
MW-LF-20	9/19/18	142	23	64.9	8.67	503.95	10	7.41	634
MW-LF-21	9/19/18	120	32.6	67.1	10.3	568.49	10.4	7.32	911
MW-LF-22D	9/20/18	82.6	29.7	86.1	10.9	474.16	10	50.3	567
MW-LF-23D	9/20/18	70.2	24.8	83.9	9.76	429.47	14.8	28.2	498
MW-LF-24	9/20/18	130	18.4	44.2	5.05	575.94	20.3	20.7	505
MW-LF-25	9/20/18	128	31.8	65.1	6.71	461.75	19.4	135	688
MW-LF-26	9/20/18	166	31.2	126	3.48	593.32	147	74.8	512
MW-LF-27	9/19/18	79.7	5.42	23.8	5.13	263.15	13.3	16.8	315
MW-LF-28	9/19/18	12	1.44	4.63	1.32	39.72	3.65	1.29	64
Landfill Leachate	9/19/18	736	94.7	128	105	253.22	423	1728	3700

Sample Location	Sampling Date	Major Ion Concentrations (mg/L)							
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	TDS
MW-LF-10	11/28/18	53.9	6.18	45.2	6.81	254	25	8.64	297
MW-LF-11	11/28/18	14.6	3.59	10.2	1.85	68.6	5.13	2.2	70
MW-LF-20	11/28/18	123	21.6	60.1	8.2	620	10.3	6.81	591
MW-LF-21	11/29/18	127	33.2	71.6	11.2	608	10.9	8.38	611
MW-LF-22D	11/29/18	83.3	33.3	89.6	12.6	497	9.94	45.7	546
MW-LF-23D	11/29/18	70.7	25.1	87.7	10.9	442	15.2	26.7	514
MW-LF-24	11/29/18	128	18.5	43.6	4.57	458	21.9	22.6	507
MW-LF-25	11/29/18	136	34	77.8	7.95	466	19.6	156	686
MW-LF-26	11/29/18	177	31.1	135	3.66	603	150	72.6	924
MW-LF-27	11/28/18	62.1	5.63	24.1	5.32	138	15.4	13.2	169
MW-LF-28	11/28/18	10.6	1.31	5.31	1.03	36.8	3.92	4.83	41.4
Landfill Leachate	11/28/18	630	84.4	108	85.9	270	367	1610	3760

TABLE 3
Major Ions in Groundwater and Leachate
EPA CCR Rule Alternate Source Demonstration
DESC Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

Sample Location	Sampling Date	Major Ion Concentrations (mg/L)							
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	TDS
MW-LF-10	3/18/19	63.4	7.69	47.5	5.85	276	26.7	7.19	334
MW-LF-11	3/18/19	14.7	3.66	9.39	1.98	81.9	5.58	1.85	71
MW-LF-20	3/18/19	134	21.7	60.1	8.09	591	11	8.67	603
MW-LF-21	3/18/19	116	30.3	62.6	9.03	583	11.3	9.68	638
MW-LF-22D	3/18/19	73.4	27.4	80	10.3	476	10.4	48.9	543
MW-LF-23D	3/19/19	62.4	23.2	80.4	10.4	412	15.2	27	500
MW-LF-24	3/19/19	119	18.1	41.8	4.06	457	19.4	14.9	509
MW-LF-25	3/19/19	133	35	72.4	7.65	452	19.7	188	728
MW-LF-26	3/19/19	155	30	119	3.17	568	152	76.7	918
MW-LF-27	3/18/19	55.9	5.21	26.1	4.34	208	14.6	14.1	274
MW-LF-28	3/18/19	10.6	1.29	4.57	1.06	49.7	4.05	2.96	67
Landfill Leachate	3/19/19	692	96.2	150	118	246	490	1819	3932

Sample Location	Sampling Date	Major Ion Concentrations (mg/L)							
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	TDS
MW-LF-10	9/17/19	81.2	7.62	53.4	6.03	289	28.6	9.64	373
MW-LF-11	9/17/19	23	5.16	11.5	2.71	105	5.96	2.06	108
MW-LF-20	9/17/19	135	22.6	62.3	8.46	571	10.7	7.05	604
MW-LF-21	9/18/19	121	33.2	67.6	10.4	578	10.3	7.42	628
MW-LF-22D	9/18/19	84	31.4	86.4	11.5	483	10.2	48.1	594
MW-LF-23D	9/18/19	65.6	24.6	82.6	10.7	407	15	25.4	530
MW-LF-24	9/18/19	114	19.1	43.3	4.71	424	18.2	11.2	549
MW-LF-25	9/18/19	136	35.2	74.2	7.53	451	18.9	171	743
MW-LF-26	9/18/19	163	31.1	123	3.61	576	145	71.6	957
MW-LF-27	9/17/19	62.5	4.92	22	5	191.1	15.2	10.4	239
MW-LF-28	9/17/19	12	1.57	5.31	1.46	39.2	4.45	2.48	57

Sample Location	Sampling Date	Major Ion Concentrations (mg/L)							
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	TDS
MW-LF-10	11/21/19	71.8	7.04	49.4	6.64	282	24.3	8.27	350
MW-LF-11	11/21/19	13.3	3.02	11.4	1.63	54.5	3.68	4.06	84
MW-LF-20	11/21/19	143	23	66.7	9.07	574	10.71	6.55	628
MW-LF-21	11/21/19	119	31	67.2	10.3	584	10.8	8.23	636
MW-LF-22D	11/21/19	80.3	30.3	85.9	11.7	480	10.2	45	570
MW-LF-23D	11/21/19	66.4	23.7	81.9	10.1	421	15.1	23.2	380
MW-LF-24	11/21/19	97.8	14.7	38.4	5.05	356	22	25.6	404
MW-LF-25	11/21/19	133	33.1	70.6	7.29	446	19.9	157	632
MW-LF-26	11/21/19	169	31.6	128	3.56	559	143	69.8	899
MW-LF-27	11/21/19	76.3	8.01	31.2	7.37	257	10.6	8.93	320
MW-LF-28	11/21/19	9.46	1.24	4.95	1.16	34.7	4.51	3.37	51

Sample Location	Sampling Date	Major Ion Concentrations (mg/L)							
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	TDS
MW-LF-10	3/12/20	78.6	9.09	55.6	6.76	283	27.5	7.13	382
MW-LF-11	3/12/20	13.3	3.2	11.2	1.8	60	4.3	3.54	93
MW-LF-20	3/11/20	157	24.9	68.2	9.15	708	11.34	7.43	671
MW-LF-21	3/11/20	132	34.3	70.6	10.5	565	11	8.13	643
MW-LF-22D	3/11/20	86.1	32.6	90.4	12	473	10.5	44.4	585
MW-LF-23D	3/11/20	73	27.1	90.8	13.5	435	15.5	25.2	528
MW-LF-24	3/11/20	124	19.2	46.6	71.2	408	19.5	14.7	497
MW-LF-25	3/11/20	157	40.3	84.5	8.1	485	21.2	215	792
MW-LF-26	3/11/20	179	33.9	133	3.59	540	146	75	937
MW-LF-27	3/12/20	51.3	5.12	30.4	4.5	153	14.5	20.9	235
MW-LF-28	3/12/20	13.5	1.79	8.3	1.48	35	5.21	5.11	68
Landfill Leachate	3/11/20	834	97.5	14.5	123	325	408	1807	3923

TDS = Total Dissolved Solids

*TDS calculated by the following formula: TDS = (0.6 x Total Alkalinity) + Ca^{+} + Mg^{2+} + Na^{+} + K^{+} + Cl^{-} + $SO_4^{=}$

Analyte concentrations reported as below the reporting limit (RL) assigned a value of 1/2 the RL for calculating TDS concentration.

TABLE 4
Charge Balance of Major Ions in Groundwater and Leachate
EPA CCR Rule Alternate Source Demonstration
DESC Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

Sample Location	Sampling Date	Major Ion Concentrations (meq/L)							Charge Balance Error
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	
MW-LF-10	10/16/17	1.80	0.30	1.60	0.28	2.62	0.54	0.13	0.09
MW-LF-11	10/16/17	1.03	0.39	0.51	0.74	1.43	0.19	1.50	-0.08
MW-LF-20	10/19/17	7.95	2.15	3.20	0.25	11.10	0.29	0.19	0.08
MW-LF-21	10/19/17	2.31	0.69	2.29	0.49	2.42	0.12	2.03	0.12
MW-LF-22D	10/18/17	4.39	2.67	3.90	0.32	8.77	0.29	1.32	0.04
MW-LF-23D	10/18/17	3.77	2.18	3.77	0.27	7.93	0.43	0.59	0.06
MW-LF-24	10/18/17	6.55	1.48	1.94	0.13	7.97	0.59	0.53	0.05
MW-LF-25	10/18/17	5.80	2.43	2.86	0.19	8.55	0.64	1.05	0.05
MW-LF-26	10/18/17	9.10	2.82	5.91	0.09	11.16	4.51	1.49	0.02
MW-LF-27	10/18/17	4.35	0.55	1.35	0.16	4.45	0.20	0.23	0.14
MW-LF-28	10/19/17	0.88	1.57	2.30	0.39	1.03	0.11	0.03	0.63
Landfill Leachate	10/18/17	34.95	8.58	5.13	2.66	4.91	14.90	34.04	-0.02

Sample Location	Sampling Date	Major Ion Concentrations (meq/L)							Charge Balance Error
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	
MW-LF-10	3/13/18	2.85	0.63	2.13	0.19	4.90	0.54	0.12	0.02
MW-LF-11	3/13/18	0.81	0.33	0.44	0.05	1.43	0.16	0.04	0.00
MW-LF-20	3/13/18	7.15	1.94	2.90	0.25	12.18	0.23	0.22	-0.02
MW-LF-21	3/14/18	6.12	2.66	2.95	0.25	11.28	0.32	0.17	0.01
MW-LF-22D	3/14/18	3.90	2.45	3.78	0.28	9.38	0.30	1.07	-0.02
MW-LF-23D	3/14/18	3.31	1.98	3.62	0.25	8.52	0.45	0.60	-0.02
MW-LF-24	3/14/18	6.67	1.70	2.04	0.15	9.54	0.53	0.23	0.01
MW-LF-25	3/14/18	6.16	2.65	3.11	0.19	9.02	0.65	1.52	0.04
MW-LF-26	3/14/18	8.40	2.64	5.82	0.08	11.60	4.34	1.49	-0.01
MW-LF-27	3/13/18	3.48	0.51	1.30	0.13	4.54	0.37	0.32	0.02
MW-LF-28	3/13/18	1.00	0.18	0.25	0.04	1.02	0.11	0.06	0.10

Sample Location	Sampling Date	Major Ion Concentrations (meq/L)							Charge Balance Error
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	
MW-LF-10	9/19/18	2.72	0.34	1.63	0.23	2.68	0.80	0.17	0.15
MW-LF-11	9/19/18	0.98	0.36	0.44	0.06	1.54	0.19	0.03	0.02
MW-LF-20	9/19/18	7.10	1.92	2.82	0.22	10.08	0.29	0.15	0.07
MW-LF-21	9/19/18	6.00	2.72	2.92	0.26	11.37	0.30	0.15	0.00
MW-LF-22D	9/20/18	4.13	2.48	3.74	0.28	9.48	0.29	1.05	-0.01
MW-LF-23D	9/20/18	3.51	2.07	3.65	0.25	8.59	0.42	0.59	-0.01
MW-LF-24	9/20/18	6.50	1.53	1.92	0.13	11.52	0.58	0.43	-0.11
MW-LF-25	9/20/18	6.40	2.65	2.83	0.17	9.24	0.55	2.81	-0.02
MW-LF-26	9/20/18	8.30	2.60	5.48	0.09	11.87	4.20	1.56	-0.03
MW-LF-27	9/19/18	3.99	0.45	1.03	0.13	5.26	0.38	0.35	-0.03
MW-LF-28	9/19/18	0.60	0.12	0.20	0.03	0.79	0.10	0.03	0.02
Landfill Leachate	9/19/18	36.80	7.89	5.57	2.69	5.06	12.09	36.00	0.00

Sample Location	Sampling Date	Major Ion Concentrations (meq/L)							Charge Balance Error
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	
MW-LF-10	11/28/18	2.70	0.52	1.97	0.17	5.08	0.71	0.18	-0.06
MW-LF-11	11/28/18	0.73	0.30	0.44	0.05	1.37	0.15	0.05	-0.01
MW-LF-20	11/28/18	6.15	1.80	2.61	0.21	12.40	0.29	0.14	-0.09
MW-LF-21	11/29/18	6.35	2.77	3.11	0.29	12.16	0.31	0.17	-0.01
MW-LF-22D	11/29/18	4.17	2.78	3.90	0.32	9.94	0.28	0.95	0.00
MW-LF-23D	11/29/18	3.54	2.09	3.81	0.28	8.84	0.43	0.56	-0.01
MW-LF-24	11/29/18	6.40	1.54	1.90	0.12	9.16	0.63	0.47	-0.01
MW-LF-25	11/29/18	6.80	2.83	3.38	0.20	9.32	0.56	3.25	0.00
MW-LF-26	11/29/18	8.85	2.59	5.87	0.09	12.06	4.29	1.51	-0.01
MW-LF-27	11/28/18	3.11	0.47	1.05	0.14	2.76	0.44	0.28	0.16
MW-LF-28	11/28/18	0.53	0.11	0.23	0.03	0.74	0.11	0.10	-0.03
Landfill Leachate	11/28/18	31.50	7.03	4.70	2.20	5.40	10.49	33.54	-0.04

TABLE 4
Charge Balance of Major Ions in Groundwater and Leachate
EPA CCR Rule Alternate Source Demonstration
DESC Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

Sample Location	Sampling Date	Major Ion Concentrations (meq/L)							Charge Balance Error
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	
MW-LF-10	3/18/19	3.17	0.64	2.07	0.15	5.52	0.76	0.15	-0.03
MW-LF-11	3/18/19	0.74	0.31	0.41	0.05	1.64	0.16	0.04	-0.10
MW-LF-20	3/18/19	6.70	1.81	2.61	0.21	11.82	0.31	0.18	-0.04
MW-LF-21	3/18/19	5.80	2.53	2.72	0.23	11.66	0.32	0.20	-0.04
MW-LF-22D	3/18/19	3.67	2.28	3.48	0.26	9.52	0.30	1.02	-0.06
MW-LF-23D	3/19/19	3.12	1.93	3.50	0.27	8.24	0.43	0.56	-0.02
MW-LF-24	3/19/19	5.95	1.51	1.82	0.10	9.14	0.55	0.31	-0.03
MW-LF-25	3/19/19	6.65	2.92	3.15	0.20	9.04	0.56	3.92	-0.02
MW-LF-26	3/19/19	7.75	2.50	5.17	0.08	11.36	4.34	1.60	-0.05
MW-LF-27	3/18/19	2.80	0.43	1.13	0.11	4.16	0.42	0.29	-0.04
MW-LF-28	3/18/19	0.53	0.11	0.20	0.03	0.99	0.12	0.06	-0.15
Landfill Leachate	3/19/19	34.60	8.02	6.52	3.03	4.92	14.00	37.90	-0.04

Sample Location	Sampling Date	Major Ion Concentrations (meq/L)							Charge Balance Error
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	
MW-LF-10	9/17/19	4.06	0.64	2.32	0.15	5.78	0.82	0.20	0.03
MW-LF-11	9/17/19	1.15	0.43	0.50	0.07	2.10	0.17	0.04	-0.04
MW-LF-20	9/17/19	6.75	1.88	2.71	0.22	11.42	0.31	0.15	-0.01
MW-LF-21	9/18/19	6.05	2.77	2.94	0.27	11.56	0.29	0.15	0.00
MW-LF-22D	9/18/19	4.20	2.62	3.76	0.29	9.66	0.29	1.00	0.00
MW-LF-23D	9/18/19	3.28	2.05	3.59	0.27	8.14	0.43	0.53	0.01
MW-LF-24	9/18/19	5.70	1.59	1.88	0.12	8.48	0.52	0.23	0.00
MW-LF-25	9/18/19	6.80	2.93	3.23	0.19	9.02	0.54	3.56	0.00
MW-LF-26	9/18/19	8.15	2.59	5.35	0.09	11.52	4.14	1.49	-0.03
MW-LF-27	9/17/19	3.13	0.41	0.96	0.13	3.82	0.43	0.22	0.02
MW-LF-28	9/17/19	0.60	0.13	0.23	0.04	0.78	0.13	0.05	0.02

Sample Location	Sampling Date	Major Ion Concentrations (meq/L)							Charge Balance Error
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	
MW-LF-10	11/21/19	3.59	0.59	2.15	0.17	5.64	0.69	0.17	0.00
MW-LF-11	11/21/19	0.67	0.25	0.50	0.04	1.09	0.11	0.08	0.06
MW-LF-20	11/21/19	7.15	1.92	2.90	0.23	11.48	0.31	0.14	0.01
MW-LF-21	11/21/19	5.95	2.58	2.92	0.26	11.68	0.31	0.17	-0.02
MW-LF-22D	11/21/19	4.02	2.53	3.73	0.30	9.60	0.29	0.94	-0.01
MW-LF-23D	11/21/19	3.32	1.98	3.56	0.26	8.42	0.43	0.48	-0.01
MW-LF-24	11/21/19	4.89	1.23	1.67	0.13	7.12	0.63	0.53	-0.02
MW-LF-25	11/21/19	6.65	2.76	3.07	0.19	8.92	0.57	3.27	0.00
MW-LF-26	11/21/19	8.45	2.63	5.57	0.09	11.18	4.09	1.45	0.00
MW-LF-27	11/21/19	3.82	0.67	1.36	0.19	5.14	0.30	0.19	0.03
MW-LF-28	11/21/19	0.47	0.10	0.22	0.03	0.69	0.13	0.07	-0.04

Sample Location	Sampling Date	Major Ion Concentrations (meq/L)							Charge Balance Error
		Ca^{+}	Mg^{2+}	Na^{+}	K^{+}	Total Alkalinity	Cl^{-}	$SO_4^{=}$	
MW-LF-10	3/12/20	3.93	0.76	2.42	0.17	5.66	0.79	0.15	0.05
MW-LF-11	3/12/20	0.67	0.27	0.49	0.05	1.20	0.12	0.07	0.02
MW-LF-20	3/11/20	7.85	2.08	2.97	0.23	14.16	0.32	0.15	-0.05
MW-LF-21	3/11/20	6.60	2.86	3.07	0.27	11.30	0.31	0.17	0.04
MW-LF-22D	3/11/20	4.31	2.72	3.93	0.31	9.46	0.30	0.93	0.03
MW-LF-23D	3/11/20	3.65	2.26	3.95	0.35	8.70	0.44	0.53	0.03
MW-LF-24	3/11/20	6.20	1.60	2.03	1.83	8.16	0.56	0.31	0.13
MW-LF-25	3/11/20	7.85	3.36	3.67	0.21	9.70	0.61	4.48	0.01
MW-LF-26	3/11/20	8.95	2.83	5.78	0.09	10.80	4.17	1.56	0.03
MW-LF-27	3/12/20	2.57	0.43	1.32	0.12	3.06	0.41	0.44	0.06
MW-LF-28	3/12/20	0.68	0.15	0.36	0.04	0.70	0.15	0.11	0.12
Landfill Leachate	3/11/20	41.70	8.13	0.63	3.15	6.50	11.66	37.65	-0.02

Analyte concentrations reported as below the reporting limit (RL) assigned a value of 1/2 the RL for calculating charge balance error.
Charge balanace error calculated as ([Cations]-[Anions])/([Cations]+[Anions]) in meq/L.

TABLE 5
ION RATIOS IN GROUNDWATER AND LANDFILL LEACHATE
EPA CCR Rule Alternate Source Demonstration
DESC Williams Station Highway 52 Class 3 Landfill
Goose Creek, Berkeley County, South Carolina

Sampling Date	Sulfate/Chloride Concentration Ratio											
	MW-LF-10	MW-LF-11	MW-LF-20	MW-LF-21	MW-LF-22D	MW-LF-23D	MW-LF-24	MW-LF-25	MW-LF-26	MW-LF-27	MW-LF-28	Landfill Leachate
5/11/16	0.21		4.57	3.86	12.05	2.35	1.15	0.77	0.48			
7/13/16	0.22		2.53	1.95	11.78	3.17	2.02	0.93	0.55			
9/13/16	1.19		1.77	1.27	7.97	2.48	1.29	1.13	0.51			
11/17/16	0.39	0.30	1.77	1.03	6.74	2.11	1.21	1.49	0.52	1.17	1.20	
1/19/17	0.56	1.69	1.19	0.89	6.18	2.20	0.67	1.81	0.49	1.19	0.21	
3/27/17	0.31	0.29	1.02	0.78	5.98	2.02	0.53	1.82	0.47	1.00	0.25	
5/25/17	0.30	0.26	1.09	0.94	8.24	2.26	0.55	2.36	0.52	1.08	0.34	
7/25/17	0.28	0.25	0.95	0.83	7.29	1.97	1.48	2.10	0.50	2.13	0.45	
9/20/17	0.30	0.30	0.93	0.84	6.53	1.97	1.55	2.38	0.46	2.25	0.86	
10/18/17												2.57
3/13/18	0.31	0.30	1.30	0.73	4.86	1.80	0.59	3.16	0.46	1.17	0.78	
9/19/18	0.29	0.22	0.74	0.70	5.03	1.91	1.02	6.96	0.51	1.26	0.35	4.09
11/28/18	0.35	0.43	0.66	0.77	4.60	1.76	1.03	7.96	0.48	0.86	1.23	4.39
3/18/19	0.27	0.33	0.79	0.86	4.70	1.78	0.77	9.54	0.50	0.97	0.73	3.71
3/12/20	0.26	0.82	0.66	0.74	4.23	1.63	0.75	10.14	0.51	1.44	0.98	4.43
Average:	0.37	0.47	1.43	1.16	6.87	2.10	1.05	3.75	0.50	1.32	0.67	3.84

Sampling Date	Lithium/Chloride Concentration Ratio (x1,000)											
	MW-LF-10	MW-LF-11	MW-LF-20	MW-LF-21	MW-LF-22D	MW-LF-23D	MW-LF-24	MW-LF-25	MW-LF-26	MW-LF-27	MW-LF-28	Landfill Leachate
5/11/16	0.77		0.44	0.31	0.52	0.20	0.22	0.11	0.03			
7/13/16	0.54		0.42	0.51	0.62	0.34	0.24	0.27	0.02			
9/13/16	0.79		0.46	0.59	0.88	0.33	0.20	0.36	0.01			
11/17/16	0.39	0.76	0.58	0.60	1.05	0.38	0.05	0.34	0.01	0.21	0.25	
1/19/17	1.25	1.27	0.51	0.55	1.58	0.45	0.16	0.37	0.01	0.10	0.25	
3/27/17	0.69	0.69	0.50	0.49	1.03	0.47	0.24	0.40	0.02	0.08	0.27	
5/25/17	2.42	0.78	0.65	0.61	1.33	0.64	0.23	0.48	0.04	0.08	0.25	
7/25/17	1.77	0.75	0.72	0.72	1.29	0.59	0.23	0.46	0.02	0.06	0.26	
10/18/17												5.16
9/19/18												4.04
11/28/18												7.03
3/19/19	0.37	0.57	0.55	0.50	1.51	1.00	0.28	0.56	0.02	0.15	0.40	6.90
3/12/20	0.47	0.64	0.72	0.71	1.89	1.57	0.56	0.68	0.03	0.19	0.39	8.21
Average:	0.95	0.78	0.56	0.56	1.17	0.60	0.24	0.40	0.02	0.12	0.30	6.27

Sampling Date	Molybdenum/Chloride Concentration Ratio (x1,000)											
	MW-LF-10	MW-LF-11	MW-LF-20	MW-LF-21	MW-LF-22D	MW-LF-23D	MW-LF-24	MW-LF-25	MW-LF-26	MW-LF-27	MW-LF-28	Landfill Leachate
5/11/16	0.14		0.37	0.41	3.30	1.29	0.12	0.22	0.003			
7/13/16	0.11		0.20	0.20	1.55	1.25	0.02	0.18	0.003			
9/13/16	0.08		0.20	0.16	1.22	1.00	0.08	0.22	0.003			
11/17/16	0.10	0.09	0.16	0.05	0.93	0.66	0.03	0.20	0.003	0.31	0.12	
1/19/17	0.27	0.16	0.14	0.12	0.86	0.64	0.07	0.18	0.003	0.16	0.13	
3/27/17	0.11	0.10	0.11	0.10	0.84	0.67	0.06	0.16	0.003	0.13	0.14	
5/25/17	0.16	0.10	0.12	0.11	0.98	0.92	0.03	0.17	0.007	0.11	0.13	
7/25/17	0.19	0.08	0.05	0.05	0.81	0.69	0.02	0.15	0.003	0.03	0.13	
10/18/17												9.90
9/19/18												6.69
11/28/18												11.20
3/19/19												12.33
Average:	0.15	0.11	0.17	0.15	1.32	0.89	0.05	0.19	0.004	0.15	0.13	10.03

NOTES:
Analyte concentrations reported as below the reporting limit (RL) assigned a value of 1/2 the RL for calculating ion ratios.

Nautilus Geologic Consulting, PLLC

APPENDIX A

Laboratory Analytical Reports for Groundwater Samples

Dominion Energy

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09414**

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: March 11, 2020 10:38
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG26TM

GW 26 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	193.00 (J)	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	179000	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	4.17	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	33900	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	3590	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	133000	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley M Barnett

Dominion Energy

Central Laboratory (P-08)
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Fax: (803) 217-9911

March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09415**

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: March 11, 2020 11:15
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLGFBTM

GW 10 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	53.70 (J)	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	Less than MDL	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	Less than MDL	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	Less than MDL	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	Less than MDL	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	Less than MDL	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley M Bonnette

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09416**

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: March 11, 2020 11:17
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG24TM

GW 24

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	114.00 (J)	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	124000	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	11.0	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	19200	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	7120	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	46600	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley M Barnette

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09417**

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: March 11, 2020 11:55
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG25TM

GW 25

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	135.00 (J)	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	157000	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	14.4	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	40300	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	8100	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	84500	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Shelly M Bennett

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09418**

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: March 11, 2020 12:35
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG23DTM

GW 23D

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	333	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	73000	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	24.4	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	27100	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	13500	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	90800	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley M Bennett

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09419**

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: March 11, 2020 12:40
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	317	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	70000	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	23.2	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	25600	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	12800	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	87500	1000	254	ppb	3/19/20 08:58	AMB/C

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If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley M Bennett

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09420**

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: March 11, 2020 13:24
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG22DTM

GW 22D

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	384	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	86100	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	19.8	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	32600	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	12000	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	90400	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Shirley M Bonnetto

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09421**

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: March 11, 2020 14:05
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG21TM

GW 21 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	233	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	132000	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	7.79	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	34300	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	10500	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	70600	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley M Bonnette

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09422**

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: March 11, 2020 14:45
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG20TM

GW 20

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	242	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	157000	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	8.40	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	24900	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	9150	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	68200	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley M Bonnette

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09423**

Williams Hwy 52 Leachate Total Metals

Date & Time Sampled: March 11, 2020 15:10
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLLF52LETM

WLLF52LE Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	16400	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	834000	5000	838	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	3350	4.0	1.516	ppb	3/19/20 13:40	AMB/C
Magnesium EPA 200.7	97500	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	123000	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	14500	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley McBrett

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09424**

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: March 12, 2020 08:44
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG27TM

GW 27

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	58.40 (J)	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	51300	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	2.77	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	5120	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	4500	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	30400	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Shirley M Bonnetts

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09425**

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: March 12, 2020 09:30
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG10TM

GW 10 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	122.00 (J)	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	78600	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	12.9	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	9090	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	6760	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	55600	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley M Bennett

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09426**

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: March 12, 2020 10:12
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG11TM

GW 11 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	43.70 (J)	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	13300	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	2.76	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	3200	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	1800	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	11200	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Shirley M Bonnetts

Dominion Energy

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March 19, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09427**

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: March 12, 2020 10:50
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG28TM

GW 28

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	200	38.458	ppb	3/19/20 08:58	AMB/C
Calcium EPA 200.7	13500	500	83.8	ppb	3/19/20 08:58	AMB/C
Lithium (CWA) 200.7	2.04	2.0	0.758	ppb	3/19/20 12:44	AMB/C
Magnesium EPA 200.7	1790	50	18.7	ppb	3/19/20 08:58	AMB/C
Potassium EPA 200.7	1480	1000	310	ppb	3/19/20 08:58	AMB/C
Sodium EPA 200.7	8300	1000	254	ppb	3/19/20 08:58	AMB/C

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Ashley M Bonnette

Central Laboratory (P-08)
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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09385**

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: March 11, 2020 10:38
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG26TDS

GW 26 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	146	0.076	mg/L	3/17/20 04:03	BB
Fluoride by IC EPA 300.0	0.25	0.016	mg/L	3/17/20 04:03	BB
pH by SM4500HB(2011)	6.59		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	75.0	0.126	mg/L	3/17/20 04:03	BB
Total Alkalinity by SM2320B	540	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	937	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
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Fax: (803) 217-9911

April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09386**

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: March 11, 2020 11:15
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLGFBTDS

GW 10 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than	0.038	mg/L	3/17/20 04:03	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/17/20 04:03	BB
pH by SM4500HB(2011)	7.10		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	Less than	0.063	mg/L	3/17/20 04:03	BB
Total Alkalinity by SM2320B	17.5	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	0	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09387**

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: March 11, 2020 11:17
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG24TDS

GW 24 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	19.5	0.038	mg/L	3/17/20 04:03	BB
Fluoride by IC EPA 300.0	0.47	0.008	mg/L	3/17/20 04:03	BB
pH by SM4500HB(2011)	6.71		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	14.7	0.063	mg/L	3/17/20 04:03	BB
Total Alkalinity by SM2320B	408	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	497	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09388**

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: March 11, 2020 11:55
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG25TDS

GW 25 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	21.2	0.076	mg/L	3/17/20 04:03	BB
Fluoride by IC EPA 300.0	0.84	0.016	mg/L	3/17/20 04:03	BB
pH by SM4500HB(2011)	7.11		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	215	0.189	mg/L	3/25/20 20:09	BB
Total Alkalinity by SM2320B	485	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	792	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09389**

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: March 11, 2020 12:35
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG23DTDS

GW 23D

Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	15.5	0.038	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	0.41	0.008	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	7.41		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	25.2	0.063	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	435	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	528	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09390**

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: March 11, 2020 12:40
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLGDUPTDS

GW 10 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	15.3	0.038	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	0.40	0.008	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	7.43		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	25.0	0.063	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	410	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	532	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09391**

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: March 11, 2020 13:24
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG22DTDS

GW 22D

Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.5	0.038	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	0.30	0.008	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	7.31		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	44.4	0.063	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	473	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	585	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09392**

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: March 11, 2020 14:05
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG21TDS

GW 21 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	11.0	0.038	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	0.24	0.008	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	7.00		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	8.13	0.063	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	565	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	643	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09393**

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: March 11, 2020 14:45
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG20TDS

GW 20 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	11.6	0.038	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	0.24	0.008	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	6.91		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	7.66	0.063	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	708	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	671	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09394**

Williams 52 Landfill Leachate Anions

Date & Time Sampled: March 11, 2020 15:10
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLLF52LEAN

WLLF52LE Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	408	0.95	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	3.21	0.20	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	7.07		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	1807	1.58	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	325	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	3923	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09395**

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: March 12, 2020 08:44
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG27TDS

GW 27 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	14.5	0.038	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	0.16	0.008	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	7.1		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	20.9	0.063	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	153	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	235	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09396**

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: March 12, 2020 09:30
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG10TDS

GW 10 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	27.5	0.038	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	0.43	0.008	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	7.32		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	7.13	0.063	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	283	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	382	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09397**

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: March 12, 2020 10:12
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG11TDS

GW 11 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	4.30	0.038	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	0.20	0.008	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	6.38		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	3.54	0.063	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	60	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	93	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
2102 North Lake Drive
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Fax: (803) 217-9911

April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09398**

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: March 12, 2020 10:50
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG28TDS

GW 28 Login Record File: 200312003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	5.21	0.038	mg/L	3/17/20 21:01	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/17/20 21:01	BB
pH by SM4500HB(2011)	6.19		S.U.	3/16/20 16:27	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	5.11	0.063	mg/L	3/17/20 21:01	BB
Total Alkalinity by SM2320B	35	0.50	mg/L	3/16/20 16:27	PRC
Total Dissolved Solid-SM2540C	68	2.0	mg/L	3/18/20 10:00	MS46910

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
2102 North Lake Drive
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Fax: (803) 217-9911

April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09399**

Williams NPDES GW-4A, Total Metals - NPDES

Date & Time Sampled: March 10, 2020 09:44
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG04ATM

GW 4A Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	19300	38.458	ppb	3/16/20 14:24	\MB/CHC
Calcium EPA 200.7	1380000	838	ppb	3/19/20 08:56	\MB/CHC
Lithium (CWA) 200.7	27.3	0.758	ppb	3/16/20 14:24	\MB/CHC
Magnesium EPA 200.7	224000	18.7	ppb	3/16/20 14:24	\MB/CHC
Potassium EPA 200.7	11700	310	ppb	3/16/20 14:24	\MB/CHC
Sodium EPA 200.7	88700	254	ppb	3/16/20 14:24	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09400**

Will Sta Field Blank, T. Metals-NPDES/CCR

Date & Time Sampled: March 10, 2020 10:31
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIGFBTM

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	38.458	ppb	3/16/20 14:24	\MB/CHC
Calcium EPA 200.7	453	83.8	ppb	3/16/20 14:24	\MB/CHC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/16/20 14:24	\MB/CHC
Magnesium EPA 200.7	30.98	18.7	ppb	3/16/20 14:24	\MB/CHC
Potassium EPA 200.7	Less than	310	ppb	3/16/20 14:24	\MB/CHC
Sodium EPA 200.7	302	254	ppb	3/16/20 14:24	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09401**

Williams NPDES GW-6R, Total Metals - NPDES

Date & Time Sampled: March 10, 2020 10:15
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG06RTM

GW 6R Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	17200	38.458	ppb	3/16/20 14:24	\MB/CHC
Calcium EPA 200.7	1620000	838	ppb	3/19/20 08:56	\MB/CHC
Lithium (CWA) 200.7	19.7	0.758	ppb	3/16/20 14:24	\MB/CHC
Magnesium EPA 200.7	29700	18.7	ppb	3/16/20 14:24	\MB/CHC
Potassium EPA 200.7	14600	310	ppb	3/16/20 14:24	\MB/CHC
Sodium EPA 200.7	126000	254	ppb	3/16/20 14:24	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09402**

Williams NPDES GW-7R, Total Metals-npdes

Date & Time Sampled: March 10, 2020 11:06
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG07RTM

GW 7R Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	2590	38.458	ppb	3/16/20 14:24	\MB/CHC
Calcium EPA 200.7	288000	83.8	ppb	3/16/20 14:24	\MB/CHC
Lithium (CWA) 200.7	10.6	0.758	ppb	3/16/20 14:24	\MB/CHC
Magnesium EPA 200.7	26400	18.7	ppb	3/16/20 14:24	\MB/CHC
Potassium EPA 200.7	3140	310	ppb	3/16/20 14:24	\MB/CHC
Sodium EPA 200.7	93800	254	ppb	3/16/20 14:24	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09403**

Will Sta Duplicate, T. Metals-NPDES/CCR

Date & Time Sampled: March 10, 2020 11:11
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIGDUPTM

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	2780	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	296000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	14.9	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	27400	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	3370	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	101000	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09404**

Williams NPDES GW 8, Total Metals-NPDES

Date & Time Sampled: March 10, 2020 11:57
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG08TM

GW 8 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	6620	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	408000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	93800	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	9150	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	70900	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09405**

Williams NPDES GW-1R, Total Metals - NPDES

Date & Time Sampled: March 10, 2020 12:38
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG01RTM

GW 1R Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	9940	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	607000	838	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	24.4	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	12900	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	11100	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	248000	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09406**

Williams NPDES GW-2R, Total Metals - NPDES

Date & Time Sampled: March 10, 2020 13:18
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG02RTM

GW 2R Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	5220	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	308000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	18.6	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	114000	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	9400	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	393000	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09407**

Will Sta GW 19D, T. Metals-NPDES/CCR

Date & Time Sampled: March 10, 2020 13:58
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG19DTM

GW 19D Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	429	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	55900	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	7.11	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	18500	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	6330	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	273000	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
2102 North Lake Drive
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Fax: (803) 217-9911

April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09408**

Will Sta GW 20AR T. Metals-NPDES/CCR

Date & Time Sampled: March 10, 2020 14:38
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG20ARTM

GW 20AR Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	3110	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	247000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	13.3	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	72600	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	11800	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	145000	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09409**

Williams FGD Pond Total Metals NPDES/CCR

Date & Time Sampled: March 10, 2020 14:50
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIGFGDPONDTM

FGD POND

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	144000	384.58	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	3610000	838	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	120	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	1230000	187	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	31900	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	134000	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09410**

Will Sta GW 17, T. Metals-NPDES/CCR

Date & Time Sampled: March 10, 2020 15:18
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG17TM

GW 17 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	349	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	189000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	2.89	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	28900	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	1650	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	201000	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09411**

Will Sta GW 18, T. Metals-NPDES/CCR

Date & Time Sampled: March 10, 2020 15:53
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG18TM

GW 18 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	4630	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	265000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	18.8	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	122000	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	18700	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	774000	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09412**

Will Sta GW 16, T. Metals-NPDES/CCR

Date & Time Sampled: March 11, 2020 08:37
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG16TM

GW 16 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	60.4	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	16300	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	7.61	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	2660	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	601	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	47400	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09413**

Will Sta GW 21, T. Metals-NPDES/CCR

Date & Time Sampled: March 11, 2020 09:22
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WIG21TM2

GW 21 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	65.1	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	47000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	9260	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	1730	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	3980	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09414**

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: March 11, 2020 10:38
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG26TM

GW 26 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	193	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	179000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	4.17	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	33900	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	3590	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	133000	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09415**

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: March 11, 2020 11:15
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLGFBTM

GW 10 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	53.7	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	Less than	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	Less than	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	Less than	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	Less than	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09416**

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: March 11, 2020 11:17
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG24TM

GW 24 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	114	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	124000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	11.0	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	19200	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	7120	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	46600	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09417**

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: March 11, 2020 11:55
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG25TM

GW 25 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	135	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	157000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	14.4	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	40300	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	8100	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	84500	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09418**

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: March 11, 2020 12:35
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG23DTM

GW 23D

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	333	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	73000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	24.4	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	27100	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	13500	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	90800	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09419**

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: March 11, 2020 12:40
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	317	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	70000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	23.2	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	25600	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	12800	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	87500	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
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Fax: (803) 217-9911

April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09420**

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: March 11, 2020 13:24
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG22DTM

GW 22D

Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	384	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	86100	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	19.8	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	32600	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	12000	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	90400	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09421**

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: March 11, 2020 14:05
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG21TM

GW 21 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	233	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	132000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	7.79	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	34300	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	10500	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	70600	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09422**

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: March 11, 2020 14:45
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG20TM

GW 20 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	242	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	157000	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	8.40	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	24900	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	9150	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	68200	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09423**

Williams Hwy 52 Leachate Total Metals

Date & Time Sampled: March 11, 2020 15:10
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLLF52LETM

WLLF52LE Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	16400	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	834000	838	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	3350	1.516	ppb	3/19/20 13:40	\MB/CHC
Magnesium EPA 200.7	97500	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	123000	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	14500	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09424**

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: March 12, 2020 08:44
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG27TM

GW 27 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	58.4	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	51300	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	2.77	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	5120	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	4500	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	30400	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
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April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09425**

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: March 12, 2020 09:30
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG10TM

GW 10 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	122	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	78600	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	12.9	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	9090	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	6760	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	55600	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09426**

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: March 12, 2020 10:12
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG11TM

GW 11 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	43.7	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	13300	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	2.76	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	3200	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	1800	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	11200	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Central Laboratory (P-08)
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Fax: (803) 217-9911

April 23, 2020

REPORT TO:

Rashida Marlowe

Sample ID: **BA09427**

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: March 12, 2020 10:50
Date & Time Submitted: March 12, 2020 13:30
Collected by: C.SANDEL Location Code: WLG28TM

GW 28 Login Record File: 200312004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	38.458	ppb	3/19/20 08:58	\MB/CHC
Calcium EPA 200.7	13500	83.8	ppb	3/19/20 08:58	\MB/CHC
Lithium (CWA) 200.7	2.04	0.758	ppb	3/19/20 12:44	\MB/CHC
Magnesium EPA 200.7	1790	18.7	ppb	3/19/20 08:58	\MB/CHC
Potassium EPA 200.7	1480	310	ppb	3/19/20 08:58	\MB/CHC
Sodium EPA 200.7	8300	254	ppb	3/19/20 08:58	\MB/CHC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: _____

Dominion Energy®

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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09833**

Williams Hwy 52 MW-LF-27/CCR TDS

Date & Time Sampled: May 12, 2020 08:09
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG27TDS

GW 27

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	13.9	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.21	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.27			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	14.8	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	210.70	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	292	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09834**

Williams Hwy 52 MW-LF-10/CCR TDS

Date & Time Sampled: May 12, 2020 08:57
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG10-LFPH

GW 10 Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	27.5	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.42	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.34			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	7.14	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	311.15	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	368	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09835**

Williams Hwy 52 MW-LF-11/CCR TDS

Date & Time Sampled: May 12, 2020 09:48
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG11-LFPH

GW 11

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	6.54	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.34	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	6.72			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	1.47	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	73.50	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	97	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09836**

Williams Hwy 52 MW-LF-28/CCR TDS

Date & Time Sampled: May 12, 2020 10:37
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG28TDS

GW 28

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	5.18	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	6.31			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	2.11	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	31.85	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	59	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09837**

Williams Hwy 52 MW-AS-12/CCR TDS

Date & Time Sampled: May 12, 2020 11:40
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLGAS12TDS

GW 11

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	4.79	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.17	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.49			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	4.93	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	183.75	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	148	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09838**

Williams Hwy 52 MW-LF-20/CCR TDS

Date & Time Sampled: May 12, 2020 12:31
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG20TDS

GW 20

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	11.34	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.22	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.01			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	7.43	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	583.10	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	626	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09839**

Williams Hwy 52 Landfill Leachate/CCR TDS

Date & Time Sampled: May 12, 2020 13:10
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLLF52LETS

WLLF52LE Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	561	12.50	0.95	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	3.33	2.50	0.20	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.12			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	1804	12.50	1.575	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	205.80	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	4326	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

Central Laboratory (P-08)
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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09840**

Williams Hwy 52 MW-LF-21/CCR TDS

Date & Time Sampled: May 13, 2020 07:55
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG21TDS

GW 21

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	11.0	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.23	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.06			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	7.88	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	75.95	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	615	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09841**

Williams Hwy 52 MW-LF-22D/CCR TDS

Date & Time Sampled: May 13, 2020 08:48
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG22DTDS

GW 22D

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.5	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.31	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.34			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	45.2	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	465.50	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	587	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Copeus

Dominion Energy

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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09842**

Williams Hwy 52 MW-LF-23D/CCR TDS

Date & Time Sampled: May 13, 2020 09:38
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG23DTDS

GW 23D Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	15.3	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.39	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.39			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	25.3	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	416.50	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	499	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

Central Laboratory (P-08)
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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09844**

Williams Hwy 52 MW-LF-24/CCR TDS

Date & Time Sampled: May 13, 2020 11:31
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG24TDS

GW 24

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	19.2	0.50	0.038	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.49	0.10	0.008	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	6.80			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	13.7	0.50	0.063	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	416.50	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	482	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capone

Dominion Energy

Central Laboratory (P-08)
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May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09845**

Williams Hwy 52 MW-LF-26/CCR TDS

Date & Time Sampled: May 13, 2020 12:15
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG26TDS

GW 26

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	149	1.00	0.076	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.22	0.20	0.016	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	6.51			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	73.8	1.00	0.126	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	561.05	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	924	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Dominion Energy

Central Laboratory (P-08)
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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09853**

Williams Hwy 52 MW-LF-27/CCR TM

Date & Time Sampled: May 12, 2020 08:09
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG27TM

GW 27

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	200	38.458	ppb	5/15/20 11:49	CHG
Calcium EPA 200.7	75700	500	83.8	ppb	5/15/20 11:49	CHG
Magnesium EPA 200.7	7370	50	18.7	ppb	5/15/20 11:49	CHG
Potassium EPA 200.7	6530	1000	310	ppb	5/15/20 11:49	CHG
Sodium EPA 200.7	30900	1000	254	ppb	5/15/20 11:49	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

Central Laboratory (P-08)
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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09854**

Williams Hwy 52 MW-LF-10/CCR TM

Date & Time Sampled: May 12, 2020 08:57
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG10TM

GW 10

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	200	38.458	ppb	5/15/20 11:49	CHG
Calcium EPA 200.7	90700	500	83.8	ppb	5/15/20 11:49	CHG
Magnesium EPA 200.7	9290	50	18.7	ppb	5/15/20 11:49	CHG
Potassium EPA 200.7	6390	1000	310	ppb	5/15/20 11:49	CHG
Sodium EPA 200.7	54900	1000	254	ppb	5/15/20 11:49	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

Central Laboratory (P-08)
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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09855**

Williams Hwy 52 MW-LF-11/CCR TM

Date & Time Sampled: May 12, 2020 09:48
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG11TM

GW 11

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	200	38.458	ppb	5/15/20 11:49	CHG
Calcium EPA 200.7	25300	500	83.8	ppb	5/15/20 11:49	CHG
Magnesium EPA 200.7	6300	50	18.7	ppb	5/15/20 11:49	CHG
Potassium EPA 200.7	3090	1000	310	ppb	5/15/20 11:49	CHG
Sodium EPA 200.7	13300	1000	254	ppb	5/15/20 11:49	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

Central Laboratory (P-08)
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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09856**

Williams Hwy 52 MW-LF-28/CCR TM

Date & Time Sampled: May 12, 2020 10:37
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG28TM

GW 28

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	46.50 (J)	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	11800	500	83.8	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	1460	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	1360	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	5440	1000	254	ppb	5/14/20 16:04	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
Tel: (803)217-9384
Fax: (803) 217-9911

May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09857**

Williams Hwy 52 MW-AS-12/CCR TM

Date & Time Sampled: May 12, 2020 11:40
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLGAS12TM

GW 11

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than MDL	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	38400	500	83.8	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	6360	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	3100	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	15300	1000	254	ppb	5/14/20 16:04	CHG

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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09858**

Williams Hwy 52 MW-LF-20/CCR TM

Date & Time Sampled: May 12, 2020 12:31
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG20TM

GW 20 Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	228	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	165000	500	83.8	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	26800	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	9440	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	72800	1000	254	ppb	5/14/20 16:04	CHG

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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09859**

Williams Hwy 52 Landfill Leachate/CCR TM

Date & Time Sampled: May 12, 2020 13:10
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLLF52LETM1

WLLF52LE

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	21400	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	893000	5000	838	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	113000	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	172000	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	222000	1000	254	ppb	5/14/20 16:04	CHG

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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09860**

Williams Hwy 52 MW-LF-21/CCR TM

Date & Time Sampled: May 13, 2020 07:55
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG21TM

GW 21

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	212	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	140000	500	83.8	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	36800	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	10600	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	73500	1000	254	ppb	5/14/20 16:04	CHG

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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09861**

Williams Hwy 52 MW-LF-22D/CCR TM

Date & Time Sampled: May 13, 2020 08:48
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG22DTM

GW 22D

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	348	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	86500	500	83.8	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	33400	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	12100	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	93700	1000	254	ppb	5/14/20 16:04	CHG

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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09862**

Williams Hwy 52 MW-LF-23D/CCR TM

Date & Time Sampled: May 13, 2020 09:38
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG23DTM

GW 23D

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	314	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	73700	500	83.8	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	37300	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	12600	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	94100	1000	254	ppb	5/14/20 16:04	CHG

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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09863**

Williams Hwy 52 MW-LF-25/CCR TM

Date & Time Sampled: May 13, 2020 10:41
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG25TM

GW 25

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	101.00 (J)	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	165000	500	83.8	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	42900	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	8560	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	86400	1000	254	ppb	5/14/20 16:04	CHG

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Approved By:

Dominion Energy

Central Laboratory (P-08)
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May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09864**

Williams Hwy 52 MW-LF-24/CCR TM

Date & Time Sampled: May 13, 2020 11:31
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG24TM

GW 24

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	73.60 (J)	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	131000	500	83.8	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	21100	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	5610	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	48700	1000	254	ppb	5/14/20 16:04	CHG

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If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

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Fax: (803) 217-9911

May 15, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09865**

Williams Hwy 52 MW-LF-26/CCR TM

Date & Time Sampled: May 13, 2020 12:15
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG26TM

GW 26

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	169.00 (J)	200	38.458	ppb	5/14/20 16:04	CHG
Calcium EPA 200.7	183000	500	83.8	ppb	5/14/20 16:04	CHG
Magnesium EPA 200.7	35400	50	18.7	ppb	5/14/20 16:04	CHG
Potassium EPA 200.7	3610	1000	310	ppb	5/14/20 16:04	CHG
Sodium EPA 200.7	138000	1000	254	ppb	5/14/20 16:04	CHG

A result marked by "J" is an estimated result that is less than the Reporting Limit and greater than or equal to the Detection Limit. The "J" value is not to be used for regulatory or compliance reporting.

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By:

Dominion Energy

Central Laboratory (P-08)
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Tel: (803)217-9384
Fax: (803) 217-9911

May 18, 2020

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA09843**

Williams Hwy 52 MW-LF-25/CCR TDS

Date & Time Sampled: May 13, 2020 10:41
Date & Time Submitted: May 14, 2020 08:56
Collected by: C.SANDEL Location Code: WLG25TDS

GW 25

Login Record File: 200514001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	20.3	2.50	0.190	mg/L	5/14/20 23:37	BB
Fluoride by IC EPA 300.0	0.75	0.50	0.040	mg/L	5/14/20 23:37	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.12			S.U.	5/14/20 15:23	PRC
Sulfates by IC EPA 300.0	216	2.50	0.315	mg/L	5/14/20 23:37	BB
Total Alkalinity by SM2320B	436.10	0.50	0.50	mg/L	5/18/20 15:47	MS
Total Dissolved Solid-SM2540C	770	2.0	2.0	mg/L	5/15/20 14:35	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved By: Phillip Capers

Nautilus Geologic Consulting, PLLC

APPENDIX B

Results of Statistical Analysis of Data

DOMINION ENERGY
SOUTH CAROLINA

WILLIAMS STATION
HIGHWAY 52 CLASS III LANDFILL

BERKELEY COUNTY, SOUTH CAROLINA

CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS REPORT

for the

March 2020 Sampling Event

Prepared on
August 13, 2020

Dominion Energy®

STATISTICAL ANALYSIS REPORT

Groundwater Sampling

In accordance with 40 CFR Part 257.94, the 2020 first semi-annual groundwater sampling event for Detection Monitoring at the Williams Highway 52 Class III Landfill began on March 12, 2020. This event included groundwater sampling and resampling from background monitoring wells MW-LF-10, MW-LF-11, MW-LF-27, and MW-LF-28; and the downgradient compliance monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25, and MW-LF-26. The groundwater samples were analyzed for the constituents listed in Appendix III of the EPA CCR Rule which include Boron, Calcium, Chloride, Fluoride, pH, Sulfate, and Total Dissolved Solids.

Statistical Analysis

The statistical analysis indicates that the concentrations of boron in the groundwater samples collected from monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D and MW-LF-23D; the concentrations of calcium in the groundwater samples collected from monitoring wells MW-LF-20, MW-LF-21, MW-LF-24, MW-LF-25 and MW-LF-26; concentration of chloride in the groundwater sample collected from monitoring well MW-LF-26; the concentration of fluoride in the groundwater sample collected from monitoring well MW-LF-25; the concentrations of sulfate in the groundwater samples collected from monitoring wells MW-LF-22D, MW-LF-23D, MW-LF-25 and MW-LF-26; and concentrations of Total Dissolved Solids in the groundwater samples collected from monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25, and MW-LF-26 show statistically significant increases (SSI) above background concentrations. No other statistically significant increases above/below background concentrations were observed for the CCR Rule Appendix III constituents in the groundwater samples collected from the Class III Landfill monitoring wells during the March 2020 Detection Monitoring event.

Monitoring Well	Parameters Presenting SSIs
MW-LF-20	Boron, Calcium, Total Dissolved Solids.
MW-LF-21	Boron, Calcium, Total Dissolved Solids.
MW-LF-22D	Boron, Sulfate, Total Dissolved Solids.
MW-LF-23D	Boron, Sulfate, Total Dissolved Solids.
MW-LF-24	Calcium, Total Dissolved Solids.
MW-LF-25	Calcium, Fluoride, Sulfate, Total Dissolved Solids.
MW-LF-26	Calcium, Chloride, Sulfate, Total Dissolved Solids.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 1

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09422	1 of 2	0.053	0.242	y	n	Downward
Boron, total mg/L	05/12/2020	BA09858	1 of 2	0.053	0.228	y	y	Downward

Run Id: 2

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09422	1 of 2	94.600	157.000	y	n	None
Ca mg/L	05/12/2020	BA09858	1 of 2	94.600	165.000	y	y	None

Run Id: 3

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09393	1 of 2	28.60	11.60	n	n	--
Chlorides mg/L	05/12/2020	BA09838	1 of 2	28.60	11.34	n	n	--

Run Id: 4

Location Id: **MW-LF-20**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 4

Location Id: **MW-LF-20**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.600	n/n	n	--
Field pH S.U.	05/12/2020	FLD20200512	1 of 2	7.785	5.665	6.600	n/n	n	--

Run Id: 5

Location Id: **MW-LF-20**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09393	1 of 2	0.572	0.240	n	n	--
Fluoride, total mg/L	05/12/2020	BA09838	1 of 2	0.572	0.220	n	n	--

Run Id: 6

Location Id: **MW-LF-20**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09393	1 of 2	24.956	7.660	n	n	--
SO4 mg/L	05/12/2020	BA09838	1 of 2	24.956	7.430	n	n	--

Run Id: 7

Location Id: **MW-LF-20**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 7

Location Id: **MW-LF-20**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09393	1 of 2	382.000	671.000	y	n	None
Total Dissolved Solids mg/L	05/12/2020	BA09838	1 of 2	382.000	626.000	y	y	None

Run Id: 8

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09421	1 of 2	0.053	0.233	y	n	Downward
Boron, total mg/L	05/13/2020	BA09860	1 of 2	0.053	0.212	y	y	Downward

Run Id: 9

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09421	1 of 2	94.600	132.000	y	n	None
Ca mg/L	05/13/2020	BA09860	1 of 2	94.600	140.000	y	y	None

Run Id: 10

Location Id: **MW-LF-21**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 10

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09392	1 of 2	28.60	11.00	n	n	--
Chlorides mg/L	05/13/2020	BA09840	1 of 2	28.60	11.00	n	n	--

Run Id: 11

Location Id: **MW-LF-21**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.600	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	6.600	n/n	n	--

Run Id: 12

Location Id: **MW-LF-21**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09392	1 of 2	0.572	0.240	n	n	--
Fluoride, total mg/L	05/13/2020	BA09840	1 of 2	0.572	0.230	n	n	--

Run Id: 13

Location Id: **MW-LF-21**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 13

Location Id: **MW-LF-21**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09392	1 of 2	24.956	8.130	n	n	--
SO4 mg/L	05/13/2020	BA09840	1 of 2	24.956	7.880	n	n	--

Run Id: 14

Location Id: **MW-LF-21**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09392	1 of 2	382.000	643.000	y	n	None
Total Dissolved Solids mg/L	05/13/2020	BA09840	1 of 2	382.000	615.000	y	y	None

Run Id: 15

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09420	1 of 2	0.053	0.384	y	n	Downward
Boron, total mg/L	05/13/2020	BA09861	1 of 2	0.053	0.348	y	y	Downward

Run Id: 16

Location Id: **MW-LF-22D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 16

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09420	1 of 2	94.600	86.100	n	n	--
Ca mg/L	05/13/2020	BA09861	1 of 2	94.600	86.500	n	n	--

Run Id: 17

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09391	1 of 2	28.60	10.50	n	n	--
Chlorides mg/L	05/13/2020	BA09841	1 of 2	28.60	10.50	n	n	--

Run Id: 18

Location Id: **MW-LF-22D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	7.000	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	7.000	n/n	n	--

Run Id: 19

Location Id: **MW-LF-22D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 19

Location Id: **MW-LF-22D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09391	1 of 2	0.572	0.300	n	n	--
Fluoride, total mg/L	05/13/2020	BA09841	1 of 2	0.572	0.310	n	n	--

Run Id: 20

Location Id: **MW-LF-22D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09391	1 of 2	24.956	44.400	y	n	Downward
SO4 mg/L	05/13/2020	BA09841	1 of 2	24.956	45.200	y	y	Downward

Run Id: 21

Location Id: **MW-LF-22D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09391	1 of 2	382.000	585.000	y	n	None
Total Dissolved Solids mg/L	05/13/2020	BA09841	1 of 2	382.000	587.000	y	y	None

Run Id: 22

Location Id: **MW-LF-23D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 22

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09418	1 of 2	0.053	0.333	y	n	Downward
Boron, total mg/L	05/13/2020	BA09862	1 of 2	0.053	0.314	y	y	Downward

Run Id: 23

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09418	1 of 2	94.600	73.000	n	n	--
Ca mg/L	05/13/2020	BA09862	1 of 2	94.600	73.700	n	n	--

Run Id: 24

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09389	1 of 2	28.60	15.50	n	n	--
Chlorides mg/L	05/13/2020	BA09842	1 of 2	28.60	15.30	n	n	--

Run Id: 25

Location Id: **MW-LF-23D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 25

Location Id: **MW-LF-23D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	7.100	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	7.100	n/n	n	--

Run Id: 26

Location Id: **MW-LF-23D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09389	1 of 2	0.572	0.410	n	n	--
Fluoride, total mg/L	05/13/2020	BA09842	1 of 2	0.572	0.390	n	n	--

Run Id: 27

Location Id: **MW-LF-23D**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09389	1 of 2	24.956	25.200	y	n	Downward
SO4 mg/L	05/13/2020	BA09842	1 of 2	24.956	25.300	y	y	Downward

Run Id: 28

Location Id: **MW-LF-23D**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 28

Location Id: **MW-LF-23D**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09389	1 of 2	382.000	528.000	y	n	Upward
Total Dissolved Solids mg/L	05/13/2020	BA09842	1 of 2	382.000	499.000	y	y	Upward

Run Id: 29

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09416	1 of 2	0.053	< 0.200	n	n	--
Boron, total mg/L	05/13/2020	BA09864	1 of 2	0.053	< 0.200	n	n	--

Run Id: 30

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09416	1 of 2	94.600	124.000	y	n	Downward
Ca mg/L	05/13/2020	BA09864	1 of 2	94.600	131.000	y	y	Downward

Run Id: 31

Location Id: **MW-LF-24**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 31

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09387	1 of 2	28.60	19.50	n	n	--
Chlorides mg/L	05/13/2020	BA09844	1 of 2	28.60	19.20	n	n	--

Run Id: 32

Location Id: **MW-LF-24**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.300	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	6.400	n/n	n	--

Run Id: 33

Location Id: **MW-LF-24**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09387	1 of 2	0.572	0.470	n	n	--
Fluoride, total mg/L	05/13/2020	BA09844	1 of 2	0.572	0.490	n	n	--

Run Id: 34

Location Id: **MW-LF-24**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 34

Location Id: **MW-LF-24**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09387	1 of 2	24.956	14.700	n	n	--
SO4 mg/L	05/13/2020	BA09844	1 of 2	24.956	13.700	n	n	--

Run Id: 35

Location Id: **MW-LF-24**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09387	1 of 2	382.000	497.000	y	n	None
Total Dissolved Solids mg/L	05/13/2020	BA09844	1 of 2	382.000	482.000	y	y	None

Run Id: 36

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09417	1 of 2	0.053	< 0.200	n	n	--
Boron, total mg/L	05/13/2020	BA09863	1 of 2	0.053	< 0.200	n	n	--

Run Id: 37

Location Id: **MW-LF-25**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 37

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09417	1 of 2	94.600	157.000	y	n	Upward
Ca mg/L	05/13/2020	BA09863	1 of 2	94.600	165.000	y	y	Upward

Run Id: 38

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09388	1 of 2	28.60	21.20	n	n	--
Chlorides mg/L	05/13/2020	BA09843	1 of 2	28.60	20.30	n	n	--

Run Id: 39

Location Id: **MW-LF-25**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.700	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	6.700	n/n	n	--

Run Id: 40

Location Id: **MW-LF-25**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 40

Location Id: **MW-LF-25**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09388	1 of 2	0.572	0.840	y	n	Upward
Fluoride, total mg/L	05/13/2020	BA09843	1 of 2	0.572	0.750	y	y	Upward

Run Id: 41

Location Id: **MW-LF-25**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09388	1 of 2	24.956	215.000	y	n	Upward
SO4 mg/L	05/13/2020	BA09843	1 of 2	24.956	216.000	y	y	Upward

Run Id: 42

Location Id: **MW-LF-25**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09388	1 of 2	382.000	792.000	y	n	Upward
Total Dissolved Solids mg/L	05/13/2020	BA09843	1 of 2	382.000	770.000	y	y	Upward

Run Id: 43

Location Id: **MW-LF-26**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 43

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total mg/L	03/11/2020	BA09414	1 of 2	0.053	< 0.200	n	n	--
Boron, total mg/L	05/13/2020	BA09865	1 of 2	0.053	< 0.200	n	n	--

Run Id: 44

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Ca mg/L	03/11/2020	BA09414	1 of 2	94.600	179.000	y	n	Upward
Ca mg/L	05/13/2020	BA09865	1 of 2	94.600	183.000	y	y	Upward

Run Id: 45

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Chlorides mg/L	03/11/2020	BA09385	1 of 2	28.60	146.00	y	n	Downward
Chlorides mg/L	05/13/2020	BA09845	1 of 2	28.60	149.00	y	y	Downward

Run Id: 46

Location Id: **MW-LF-26**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Run Id: 46

Location Id: **MW-LF-26**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Lower Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/11/2020	FLD20200311	1 of 2	7.785	5.665	6.100	n/n	n	--
Field pH S.U.	05/13/2020	FLD20200513	1 of 2	7.785	5.665	6.100	n/n	n	--

Run Id: 47

Location Id: **MW-LF-26**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Fluoride, total mg/L	03/11/2020	BA09385	1 of 2	0.572	0.250	n	n	--
Fluoride, total mg/L	05/13/2020	BA09845	1 of 2	0.572	0.220	n	n	--

Run Id: 48

Location Id: **MW-LF-26**

Compliance Test: **Parametric Prediction Interval on Background**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
SO4 mg/L	03/11/2020	BA09385	1 of 2	24.956	75.000	y	n	None
SO4 mg/L	05/13/2020	BA09845	1 of 2	24.956	73.800	y	y	None

Run Id: 49

Location Id: **MW-LF-26**

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)

Statistical Analysis Procedure

Run Id: 49

Location Id: **MW-LF-26**

Compliance Test: **Non-Parametric Prediction Interval on Background Useing largest background data value.**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Total Dissolved Solids mg/L	03/11/2020	BA09385	1 of 2	382.000	937.000	y	n	Upward
Total Dissolved Solids mg/L	05/13/2020	BA09845	1 of 2	382.000	924.000	y	y	Upward

NOTE: If trend test is performed, the background slope is listed under the Upper Limit heading and the compliance slope is listed under the Compliance Result heading.

Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

Background Locations: **MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28**

Insufficient Background: 0
DQR Tests: 0

Parameter Name:	**Field pH, S.U.**	Background Date Range:	05/10/2016 to 05/13/2020
Alpha Per Test FPR:	0.00107	Option for LT Pts:	0% to <= 15% Substitute ½ PQL
Total Pts	59	Kappa for Selected Verification Plan:	2.070
LT Pts	0	Mean	6.725
%LT Pts	0.00	StdDev	0.512
Normal/Log Normal	y/y	ln Mean	1.903
Log Transformed:	n	ln StdDev	0.075
Upper Limit:	7.785		
Lower Limit:	5.665		

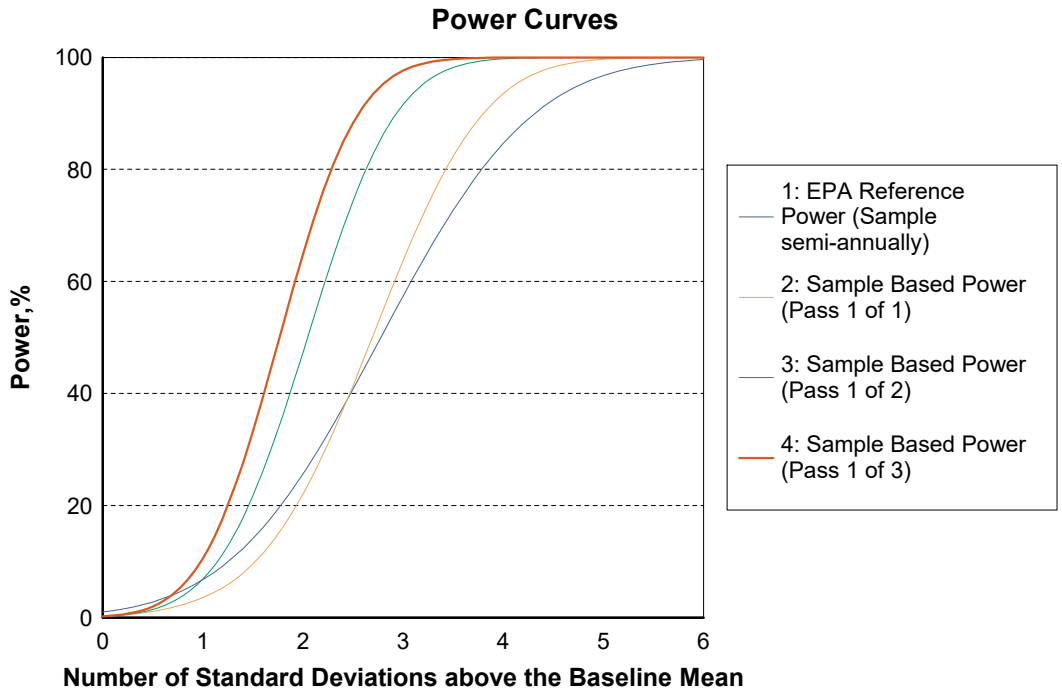
Parameter Name:	**Fluoride, total, mg/L**	Background Date Range:	05/10/2016 to 05/13/2020
Alpha Per Test FPR:	0.00107	Option for LT Pts:	> 15% to <= 50% Substitute Kaplan-Meier
Total Pts	59	Kappa for Selected Verification Plan:	1.896
LT Pts	9	Mean	0.273
%LT Pts	15.25	StdDev	0.158
Normal/Log Normal	y/y	ln Mean	-1.724
Log Transformed:	n	ln StdDev	1.271
Upper Limit:	0.572		
Lower Limit:	-0.027		

Parameter Name:	**SO4, mg/L**	Background Date Range:	05/10/2016 to 05/13/2020
Alpha Per Test FPR:	0.00107	Option for LT Pts:	0% to <= 15% Substitute ½ PQL
Total Pts	63	Kappa for Selected Verification Plan:	1.892
LT Pts	0	Mean	6.730
%LT Pts	0.00	StdDev	6.695
Normal/Log Normal	n/y	ln Mean	1.511
Log Transformed:	y	ln StdDev	0.902
Upper Limit:	24.956		
Lower Limit:	0.823		

Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

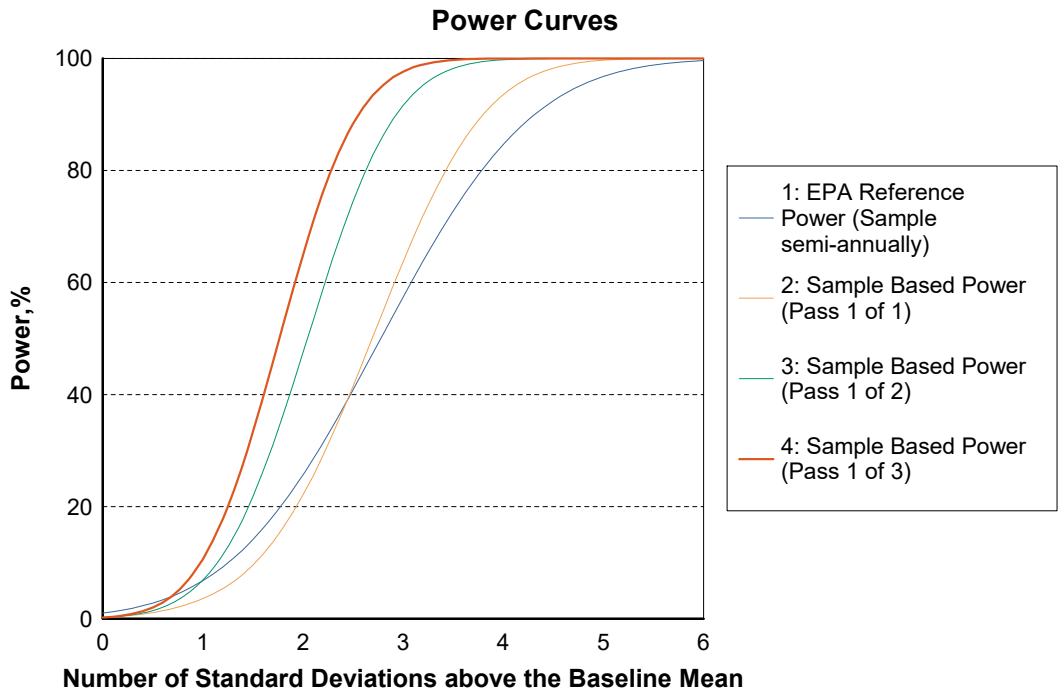
Power Curves (MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28 - Field pH, S.U.)



Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

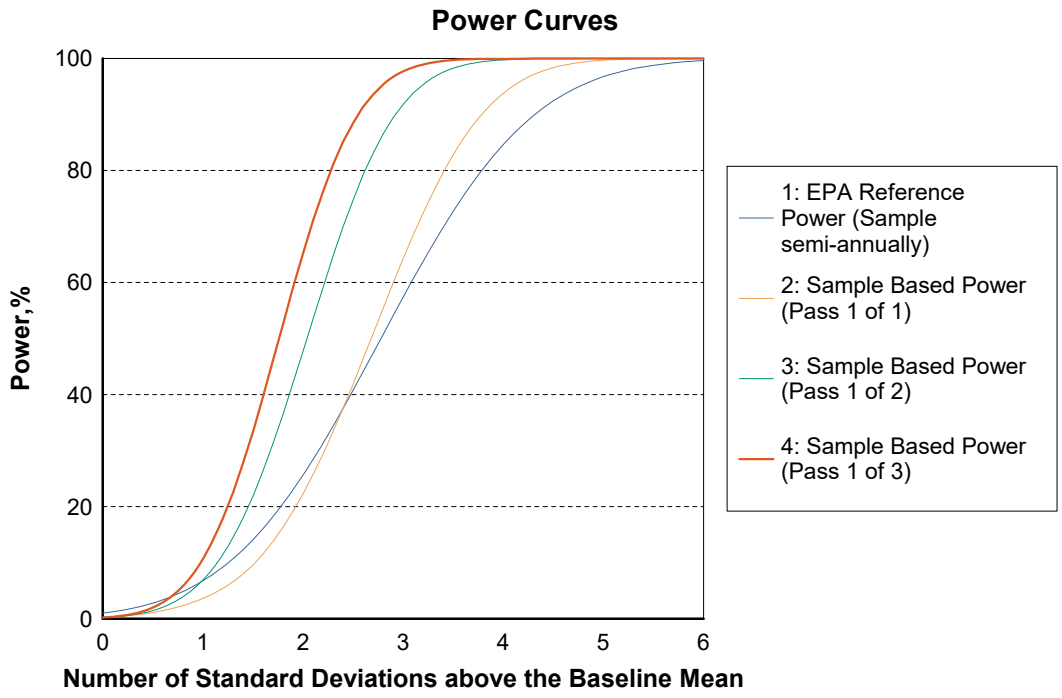
Power Curves (MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28 - Fluoride, total,



Williams (Hwy 52)
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)

Power Curves (MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28 - SO4, mg/L)



Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 1

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.62	0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	03/11/2020	0.242	y
MW-LF-20	05/12/2020	0.228	y

Run Id: 2

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.62	94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	03/11/2020	157	y
MW-LF-20	05/12/2020	165	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 3

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	03/11/2020	11.6	n
MW-LF-20	05/12/2020	11.34	n

Run Id: 7

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-20	03/11/2020	671	y
MW-LF-20	05/12/2020	626	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 8

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	03/11/2020	0.233	y
MW-LF-21	05/13/2020	0.212	y

Run Id: 9

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	03/11/2020	132	y
MW-LF-21	05/13/2020	140	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 10

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	03/11/2020	11	n
MW-LF-21	05/13/2020	11	n

Run Id: 14

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-21	03/11/2020	643	y
MW-LF-21	05/13/2020	615	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 15

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	03/11/2020	0.384	y
MW-LF-22D	05/13/2020	0.348	y

Run Id: 16

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	03/11/2020	86.1	n
MW-LF-22D	05/13/2020	86.5	n

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 17

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	03/11/2020	10.5	n
MW-LF-22D	05/13/2020	10.5	n

Run Id: 21

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-22D	03/11/2020	585	y
MW-LF-22D	05/13/2020	587	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 22

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	03/11/2020	0.333	y
MW-LF-23D	05/13/2020	0.314	y

Run Id: 23

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	03/11/2020	73	n
MW-LF-23D	05/13/2020	73.7	n

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 24

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	03/11/2020	15.5	n
MW-LF-23D	05/13/2020	15.3	n

Run Id: 28

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-23D	03/11/2020	528	y
MW-LF-23D	05/13/2020	499	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 29

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	03/11/2020	<0.2	n
MW-LF-24	05/13/2020	<0.2	n

Run Id: 30

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	03/11/2020	124	y
MW-LF-24	05/13/2020	131	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 31

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	03/11/2020	19.5	n
MW-LF-24	05/13/2020	19.2	n

Run Id: 35

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-24	03/11/2020	497	y
MW-LF-24	05/13/2020	482	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 36

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	03/11/2020	<0.2	n
MW-LF-25	05/13/2020	<0.2	n

Run Id: 37

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	03/11/2020	157	y
MW-LF-25	05/13/2020	165	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 38

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	03/11/2020	21.2	n
MW-LF-25	05/13/2020	20.3	n

Run Id: 42

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.67
PU (Upper) Value: 382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-25	03/11/2020	792	y
MW-LF-25	05/13/2020	770	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 43

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
01022	Boron, total	mg/L	59	> 50% to <= 100% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 0.053

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	03/11/2020	<0.2	n
MW-LF-26	05/13/2020	<0.2	n

Run Id: 44

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Ca	mg/L	59	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %: 99.62
PU (Upper) Value: 94.600

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	03/11/2020	179	y
MW-LF-26	05/13/2020	183	y

Williams (Hwy 52)
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/10/2016 to 05/13/2020
Compliance Date Range: 03/01/2020 to 6/30/2020
No. of Verification Resamples: 1

Run Id: 45

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chlorides	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	28.60

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	03/11/2020	146	y
MW-LF-26	05/13/2020	149	y

Run Id: 49

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	63	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.67	382.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-26	03/11/2020	937	y
MW-LF-26	05/13/2020	924	y

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 1

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 69

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.138	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.268	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.605
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 2

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-4.303	mg/L per year
Lower Confidence Limit of Slope, M1:	-9.791	mg/L per year
Upper Confidence Limit of Slope, M2+1:	2.547	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.907
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 3

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.61	mg/L per year
Lower Confidence Limit of Slope, M1:	0.44	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.81	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.75
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 4

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	0.000	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.043	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.519
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 5

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.014	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.028	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.527
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 6

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-2.471	mg/L per year
Lower Confidence Limit of Slope, M1:	-4.134	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-1.590	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.325
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 7

Location ID: MW-LF-20
Confidence Level: 95%
Date Range: 05/11/2016 to 05/12/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-5.120	mg/L per year
Lower Confidence Limit of Slope, M1:	-13.135	mg/L per year
Upper Confidence Limit of Slope, M2+1:	14.595	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.379
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 8

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 75

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.162	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.272	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.974
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 9

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.136	mg/L per year
Lower Confidence Limit of Slope, M1:	-3.784	mg/L per year
Upper Confidence Limit of Slope, M2+1:	4.398	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.041
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 10

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.34	mg/L per year
Lower Confidence Limit of Slope, M1:	0.11	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.63	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.69
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 11

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.066	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.864
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 12

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.021	mg/L per year
Lower Confidence Limit of Slope, M1:	0.001	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.031	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.732
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 13

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-1.235	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.039	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-0.495	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.913
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 14

Location ID: MW-LF-21
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	14.274	mg/L per year
Lower Confidence Limit of Slope, M1:	-1.383	mg/L per year
Upper Confidence Limit of Slope, M2+1:	27.235	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.478
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 15

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 59

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.173	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.233	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.877
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 16

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-1.828	mg/L per year
Lower Confidence Limit of Slope, M1:	-4.138	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.188	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.442
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 17

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.06	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.05	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.13	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.04
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 18

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.030	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.081	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.066
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 19

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.003	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.003	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.017	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.860
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 20

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-9.858	mg/L per year
Lower Confidence Limit of Slope, M1:	-14.594	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-6.416	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.697
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 21

Location ID: MW-LF-22D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	8.380	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.902	mg/L per year
Upper Confidence Limit of Slope, M2+1:	18.830	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.175
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 22

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 59

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.177	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.247	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.506
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 23

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	1.084	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.735	mg/L per year
Upper Confidence Limit of Slope, M2+1:	4.045	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.112
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 24

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.30	mg/L per year
Lower Confidence Limit of Slope, M1:	0.19	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.56	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.99
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 25

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.028	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.085	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.600
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 26

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.012	mg/L per year
Lower Confidence Limit of Slope, M1:	0.003	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.021	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.030
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 27

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-2.395	mg/L per year
Lower Confidence Limit of Slope, M1:	-3.173	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-1.764	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.243
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 28

Location ID: MW-LF-23D
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	16.416	mg/L per year
Lower Confidence Limit of Slope, M1:	6.818	mg/L per year
Upper Confidence Limit of Slope, M2+1:	25.419	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.727
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 29

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 94

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.204	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.281	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.986
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 30

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-5.075	mg/L per year
Lower Confidence Limit of Slope, M1:	-10.043	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-0.550	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.732
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 31

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.28	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.35	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.94	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.91
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 32

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.057	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.859
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 33

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.020	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.035	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.674
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 34

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-1.966	mg/L per year
Lower Confidence Limit of Slope, M1:	-6.524	mg/L per year
Upper Confidence Limit of Slope, M2+1:	1.245	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.783
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 35

Location ID: MW-LF-24
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-6.949	mg/L per year
Lower Confidence Limit of Slope, M1:	-19.424	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.605	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.554
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 36

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 94

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.204	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.281	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.986
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 37

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	12.074	mg/L per year
Lower Confidence Limit of Slope, M1:	9.256	mg/L per year
Upper Confidence Limit of Slope, M2+1:	15.796	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.305
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 38

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.48	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.85	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.17	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.44
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 39

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.035	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.066	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.815
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 40

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.067	mg/L per year
Lower Confidence Limit of Slope, M1:	0.006	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.109	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.896
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 41

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	49.170	mg/L per year
Lower Confidence Limit of Slope, M1:	37.998	mg/L per year
Upper Confidence Limit of Slope, M2+1:	55.885	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.231
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 42

Location ID: MW-LF-25
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	75.427	mg/L per year
Lower Confidence Limit of Slope, M1:	60.810	mg/L per year
Upper Confidence Limit of Slope, M2+1:	86.053	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.394
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 43

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: > 50% to <= 100% Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: mg/L
Percent of ND: 94

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.204	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.275	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.986
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 44

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Ca
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	4.265	mg/L per year
Lower Confidence Limit of Slope, M1:	1.212	mg/L per year
Upper Confidence Limit of Slope, M2+1:	6.657	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.269
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 45

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chlorides
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-3.12	mg/L per year
Lower Confidence Limit of Slope, M1:	-4.82	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-1.85	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.92
Z test:	1.64
At the 95% Confidence Level (One-Sided Test):	Downward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 46

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00400
Parameter: Field pH
Units: S.U.
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.000	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.063	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.605
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 47

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 13

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	0.026	mg/L per year
Lower Confidence Limit of Slope, M1:	0.010	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.046	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.746
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 48

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: SO4
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	-0.854	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.876	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.110	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.478
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	None

Williams (Hwy 52)
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 49

Location ID: MW-LF-26
Confidence Level: 95%
Date Range: 05/11/2016 to 05/13/2020
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00515
Parameter: Total Dissolved Solids
Units: mg/L
Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope:	15.780	mg/L per year
Lower Confidence Limit of Slope, M1:	6.387	mg/L per year
Upper Confidence Limit of Slope, M2+1:	21.937	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.504
Z test:	1.645
At the 95% Confidence Level (One-Sided Test):	Upward