Nautilus Geologic Consulting, PLLC

2019 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

EPA CCR RULE COMPLIANCE

DOMINION ENERGY SOUTH CAROLINA
Cope Station: Class Three Landfill

January 2020

Prepared by:

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Nautilus Geologic Consulting, PLLC

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1.0 INTRODUCTION

This document presents the *2019 Annual Groundwater Monitoring and Corrective Action* report for the Class 3 landfill at Dominion Energy South Carolina (DESC) Cope Generating Station in Cope, Orangeburg County, South Carolina in accordance with 40 CFR Part 257.90 (e). The Class 3 landfill is a coal combustion residuals (CCR) handling facility as defined by the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Part 257.93).

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 from 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

Six Type II groundwater monitoring wells (designated MW-LF-01 through MW-LF-06) were installed and developed at Cope Station Class Three Landfill in March 2016 to serve as EPA CCR Rule Compliance monitoring wells. In addition, two existing monitoring wells which are also used for NPDES and South Carolina Department of Health and Environmental Control (SCDHEC) landfill groundwater monitoring compliance, were incorporated in the system network. The existing wells (MW-06 and MW-16) are designated MW-BG-06 and MW-BG-16 in the CCR groundwater monitoring network. In addition, two Alternate Source Demonstration (ASD) monitoring wells were installed in November 2017 to determine if a source other than the Class 3 Landfill was responsible for statistically significant increases (SSIs) observed for certain EPA CCR Rule Appendix III constituents in groundwater at the compliance monitoring wells based on the results of Detection Monitoring conducted in September and October 2017. The ASD monitoring wells are designated AS-LF-01 and AS-LF-02. The results of the ASD are presented in the August 2018 *Alternate Source Demonstration Report, Cope Station Class 3 Landfill*. The results of the ASD support the position that the SSIs in groundwater evident from statistical analysis of groundwater quality data collected during the September and October 2017 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 has remained in detection monitoring. A site location map for Cope Station is presented as **Figure 1** and the locations and designations of the EPA CCR Rule Compliance monitoring wells and other relevant site features are presented in **Figure 2**.

The eight 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 Parts 257.93 and 257.94(e)(2)). The locations and designations of the monitoring wells are shown in **Figure 2**. Monitoring wells MW-LF-01, AS-LF-01 and AS-LF-02 serve as up-gradient wells to monitor the quality of background groundwater in the surficial aquifer entering the area of the Class Three landfill (existing wells MW-BG-6 and MW-BG-16 are also used as background monitoring locations). The remaining monitoring wells (MW-LF-02 through MWLF-06) serve as down gradient wells to monitor the quality of groundwater down gradient of the Class Three landfill. In addition, existing groundwater monitoring

well MW-40 served as an additional ASD monitoring well to provide groundwater quality data in support of the ASD evaluation referenced above.

3.0 GROUNDWATER MONITORING

3.1 Groundwater Sampling

In accordance with 40 CFR Part 257.94, the fourth round of Detection Monitoring was conducted in March 2019 and included groundwater sampling from monitoring wells MW-LF-01 through MW-LF-06, MW-BG-06, MW-BG-16, AS-LF-01 and AS-LF-02. 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 in March 2019 were analyzed by South Carolina Certified laboratories (DESC Central Laboratory (Certification Number 32006) and GEL Laboratories, LLC (Certification Numbers 10120001 and 10120002) for the constituents listed in Appendix III of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107). In addition, all groundwater samples were analyzed for total alkalinity, iron, magnesium, potassium and sodium.

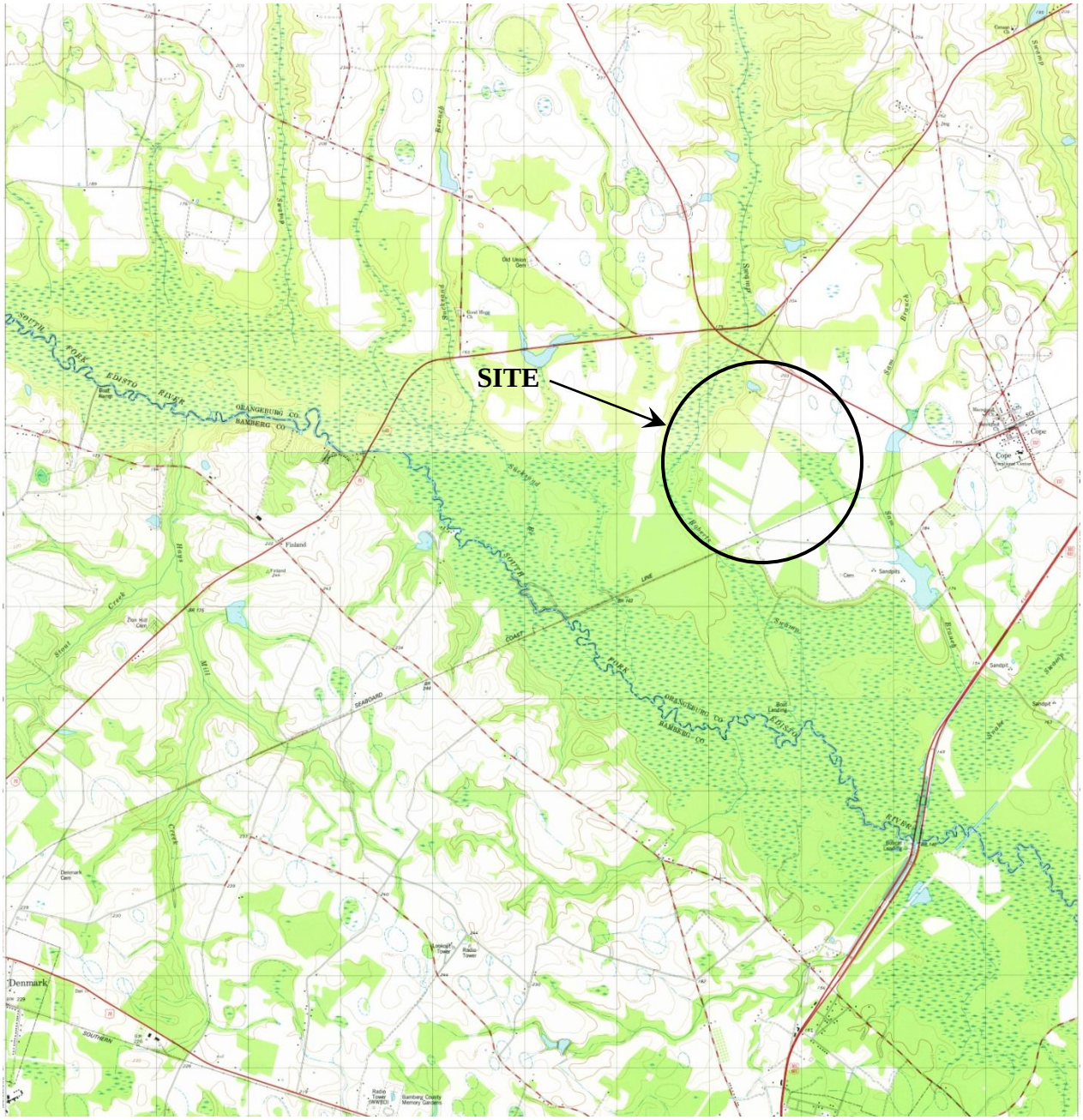
In accordance with 40 CFR Part 257.94, the fifth round of Detection Monitoring was conducted in September 2019 and included groundwater sampling from monitoring wells MW-LF-01 through MW-LF-06, MW-BG-06, MW-BG-16, AS-LF-01 and AS-LF-02. One groundwater sample was collected from each of the monitoring wells during the Detection Monitoring event. All groundwater samples collected from the monitoring wells for Detection Monitoring in September 2019 were analyzed by South Carolina Certified laboratories (DESC Central Laboratory and GEL Laboratories, LLC) for the constituents listed in Appendix III of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107).

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 Detection Monitoring events conducted in March and September 2019 are presented **in Appendix A**. The results of the statistical analyses of data from the Detection Monitoring events conducted in March and September 2019 indicate that the concentrations of the monitoring parameters detected in groundwater were all within acceptable statistical limits (i.e., no statistically significant increases over background concentrations were observed) for each constituent and no exceedances of applicable EPA Maximum Contaminant Levels (MCLs) were observed. The results of the statistical analyses of groundwater quality data from the March and September 2019 Detection Monitoring events are presented in **Appendix B**.

4.0 KEY PROJECT ACTIVITIES FOR 2020

Detection monitoring will continue in 2020. Two rounds of detection monitoring are anticipated to be completed during March and September 2020 with groundwater samples being collected from monitoring wells MW-LF-01 through MW-LF-06, MW-BG-06, MW-BG-16, AS-LF-01, AS-LF-02 and MW-40.



N

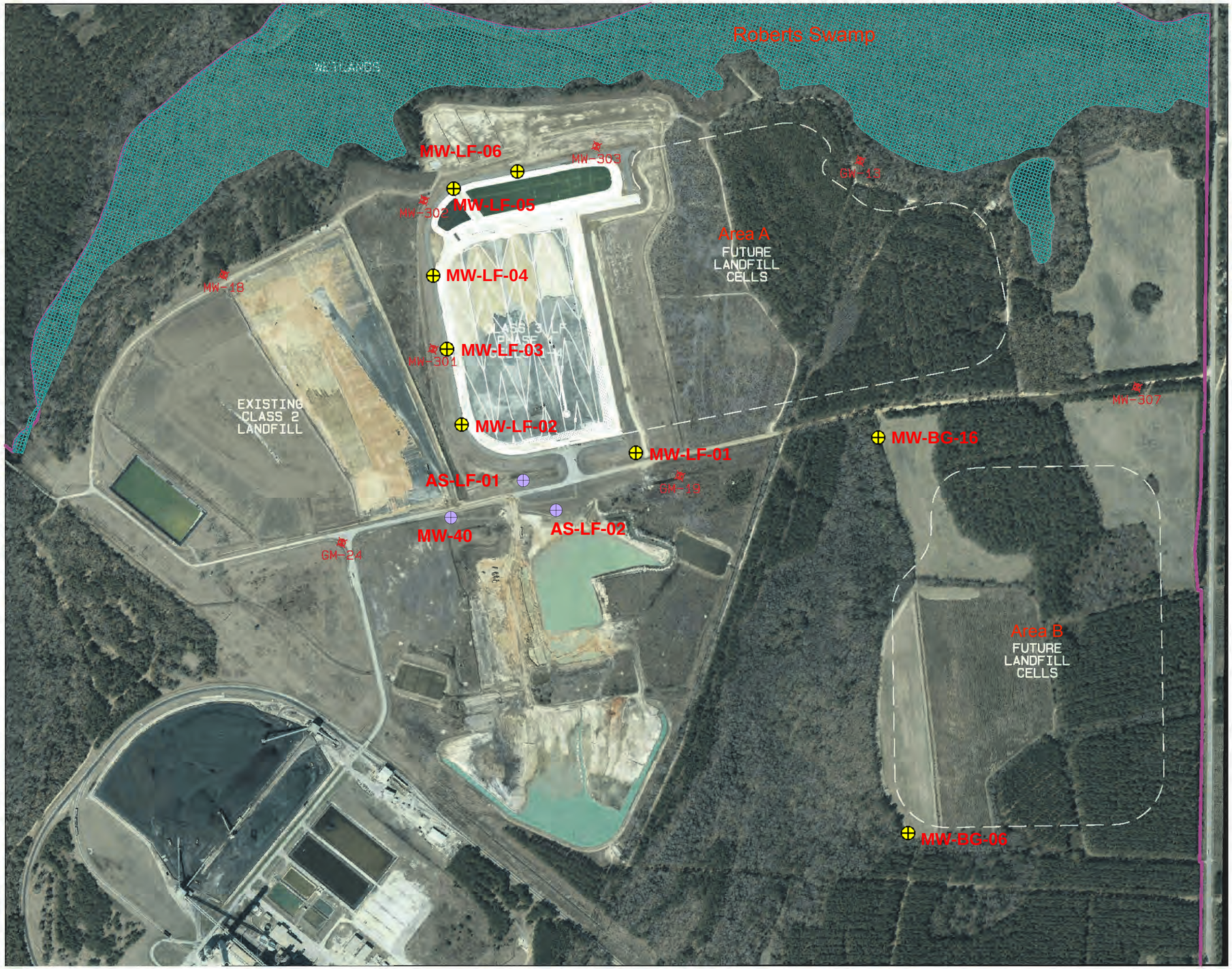
Source: USGS 7.5' Topographic Quadrangle Series
Bamberg and Norway East, SC 1979

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Place
Wendell, NC 27591
Office: (919) 366-3663
Cell: (919) 995-0363

SITE LOCATION MAP

SCE&G Cope Generating Station
Orangeburg County, South Carolina

Drawn by:	Reviewed by	Project #:	Drawing #:	Figure No.
USGS		Scale: 1:24,000	Drawing Date: 10/7/11	1



1. PHASE 1 LANDFILL GRADES SHOWN THIS SHEET REPRESENT TOP OF LINER GRADES
2. ORTHOPHOTOGRAPH DATED MARCH 2015

⊕ LF-1 **Class Three Landfill Monitoring Well for EPA CCR Rule Compliance**

⊕ AS-LF-01 **Alternate Source Demonstration Monitoring Well**

GRAPHIC SCALE 1"=600'

0 600 1200

REVISION	DATE
1)	
2)	
3)	
4)	

Nautilus Geologic Consulting, PLLC

COPE STATION CLASS THREE LANDFILL

EPA CCR Rule Compliance Monitoring Wells

JOB NUMBER

SHEET 2

V:\SCE&G\Cope\Class 3 LF PH1 Construction\Groundwater Monitoring\Cope Class 3 LF - GWMP.pro Tue Aug 4, 2015 5:11:55PM

Nautilus Geologic Consulting, PLLC

APPENDIX A

Results of Field and Laboratory Analyses of Groundwater Samples

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

March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05321**

Cope Well LF-01 CCR

Date & Time Sampled: March 20, 2019 12:47
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF1TDS

LF-1

Login Record File: 190321003

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	13.2	0.50	0.038	mg/L	3/21/19 23:50	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/21/19 23:50	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.60			S.U.	3/21/19 16:21	PRC
Sulfates by IC EPA 300.0	Less than PQL	.50	0.129	mg/L	3/21/19 23:50	BB
Total Alkalinity by SM2320B	8.96	0.50	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	46	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: 

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Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
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March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05323**

Cope Well Field Blank CCR

Date & Time Sampled: March 20, 2019 13:15
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COFBTDS

Login Record File: 190321003

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	3/21/19 23:50	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/21/19 23:50	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	7.40			S.U.	3/21/19 16:21	PRC
Sulfates by IC EPA 300.0	Less than PQL	.50	0.129	mg/L	3/21/19 23:50	BB
Total Alkalinity by SM2320B	1.99	0.50	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	7	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

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

March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05325**

Cope Well LF-02 CCR

Date & Time Sampled: March 20, 2019 13:24
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF2TDS

LF-2

Login Record File: 190321003

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	28.6	0.50	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.22			S.U.	3/21/19 16:21	PRC
Sulfates by IC EPA 300.0	4.07	.50	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	3.98	0.50	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	98	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: 

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

March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05327**

Cope Well LF-3 CCR

Date & Time Sampled: March 20, 2019 14:08
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF3TDS

LF-3 Login Record File: 190321003

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	3.53	0.50	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.59			S.U.	3/21/19 16:21	PRC
Sulfates by IC EPA 300.0	0.76	.50	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	11.9	0.50	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	25	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: _____

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March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05329**

Cope Well LF-4 CCR

Date & Time Sampled: March 20, 2019 14:57
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF4TDS

LF-4

Login Record File: 190321003

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	3.78	0.50	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.50			S.U.	3/21/19 16:21	PRC
Sulfates by IC EPA 300.0	Less than PQL	.50	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	5.97	0.50	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	28	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

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March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05331**

Cope Well LF-5 CCR

Date & Time Sampled: March 20, 2019 15:41
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF5TDS

LF-5 Login Record File: 190321003

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	7.96	0.50	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.95			S.U.	3/21/19 16:21	PRC
Sulfates by IC EPA 300.0	Less than PQL	.50	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	6.97	0.50	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	36	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

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March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05333**

Cope Well LF-6 CCR

Date & Time Sampled: March 20, 2019 16:28
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF6TDS

LF-6

Login Record File: 190321003

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	7.63	0.50	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.91			S.U.	3/22/19 11:16	PRC
Sulfates by IC EPA 300.0	Less than PQL	.50	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	13.9	0.50	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	29	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

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March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05335**

Cope GW Well MW-40 Anion

Date & Time Sampled: March 21, 2019 08:05
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COG40ANS

MW-40 Login Record File: 190321003

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	117	1.50	0.114	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than PQL	0.30	0.024	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	4.67			S.U.	3/22/19 11:16	PRC
Sulfates by IC EPA 300.0	220	1.50	0.387	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	Less than PQL	0.50	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	527	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

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March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05337**

Cope Well AS-LF-1 CCR

Date & Time Sampled: March 21, 2019 08:51
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COASLF1TDS

LF-1 Login Record File: 190321003

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	4.50	0.50	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.52			S.U.	3/22/19 11:16	PRC
Sulfates by IC EPA 300.0	8.86	.50	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	7.96	0.50	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	28	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: _____

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Columbia, SC 29212
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March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05339**

Cope Well AS-LF-2 CCR

Date & Time Sampled: March 21, 2019 09:39
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COASLF2TDS

LF-2

Login Record File: 190321003

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	14.4	0.50	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.55			S.U.	3/22/19 11:16	PRC
Sulfates by IC EPA 300.0	14.5	.50	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	12.9	0.50	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	76	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: _____

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

March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05341**

Cope Well AS-LF 2 Duplicate CCR

Date & Time Sampled: March 21, 2019 09:45
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: CODUPTDS

Login Record File: 190321003

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	14.5	0.50	0.038	mg/L	3/26/19 03:05	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/26/19 03:05	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.57			S.U.	3/22/19 11:16	PRC
Sulfates by IC EPA 300.0	14.5	.50	0.129	mg/L	3/26/19 03:05	BB
Total Alkalinity by SM2320B	14.9	0.50	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	63	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: 

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A SCANA COMPANY

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2102 North Lake Drive
Columbia, SC 29212
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March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05343**

Cope Well MW-16 TDS CCR

Date & Time Sampled: March 21, 2019 10:56
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COMW16TDS

MW-6

Login Record File: 190321003

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	4.12	0.50	0.038	mg/L	3/26/19 03:05	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/26/19 03:05	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	6.11			S.U.	3/22/19 11:16	PRC
Sulfates by IC EPA 300.0	1.48	.50	0.129	mg/L	3/26/19 03:05	BB
Total Alkalinity by SM2320B	8.96	0.50	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	12	2.0	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: 

SCE&G®
A SCANA COMPANY

Central Laboratory (P-08)
2102 North Lake Drive
Columbia, SC 29212
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March 26, 2019

REPORT TO:

Mike Moore C221
Rashida Marlowe

Sample ID: **BA05345**

Cope Well MW-06 TDS CCR

Date & Time Sampled: March 21, 2019 11:53
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COMW06TDS

MW16

Login Record File: 190321003

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	18.7	0.50	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than PQL	0.10	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been exceeded.	5.20			S.U.	3/22/19 11:16	PRC
Sulfates by IC EPA 300.0	Less than PQL	.50	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	2.99	0.50	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	101	2.0	2.0	mg/L	3/26/19 09:28	JGR

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 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05321**

Cope Well LF-01 CCR

Date & Time Sampled: March 20, 2019 12:47
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF1TDS

LF-1 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	13.2	0.038	mg/L	3/21/19 23:50	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/21/19 23:50	BB
pH by SM4500HB(2011)	5.60		S.U.	3/21/19 16:21	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	Less than	0.129	mg/L	3/21/19 23:50	BB
Total Alkalinity by SM2320B	8.96	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	46	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05322**

Cope Well LF-01 TMetal CCR

Date & Time Sampled: March 20, 2019 12:47
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF1TM

LF-1 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	2750	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	1200	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	664	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	4340	143	ppb	3/26/19 09:41	MC

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

April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05323**

Cope Well Field Blank CCR

Date & Time Sampled: March 20, 2019 13:15
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COFBTDS

Login Record File: 190321003

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	3/21/19 23:50	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/21/19 23:50	BB
pH by SM4500HB(2011)	7.40		S.U.	3/21/19 16:21	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	Less than	0.129	mg/L	3/21/19 23:50	BB
Total Alkalinity by SM2320B	1.99	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	7	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05324**

Cope Well Field Blank T Metal CCR

Date & Time Sampled: March 20, 2019 13:15
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COFBTM

Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	Less than	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	Less than	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	Less than	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	Less than	143	ppb	3/26/19 09:41	MC

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

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05325**

Cope Well LF-02 CCR

Date & Time Sampled: March 20, 2019 13:24
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF2TDS

LF-2 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	28.6	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011)	5.22		S.U.	3/21/19 16:21	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	4.07	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	3.98	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	98	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05326**

Cope Well LF-02 TMetal CCR

Date & Time Sampled: March 20, 2019 13:24
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF2TM

LF-2 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	3670	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	1.0	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	2980	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	4290	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	7240	143	ppb	3/26/19 09:41	MC

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05327**

Cope Well LF-3 CCR

Date & Time Sampled: March 20, 2019 14:08
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF3TDS

LF-3 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	3.53	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011)	5.59		S.U.	3/21/19 16:21	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	0.76	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	11.9	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	25	2.0	mg/L	3/26/19 09:28	JGR

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

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05328**

Cope Well LF-3 T Metal CCR

Date & Time Sampled: March 20, 2019 14:08
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF3TM

LF-3 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	1030	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	2.4	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	544	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	2670	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	1600	143	ppb	3/26/19 09:41	MC

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

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05329**

Cope Well LF-4 CCR

Date & Time Sampled: March 20, 2019 14:57
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF4TDS

LF-4 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	3.78	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011)	5.50		S.U.	3/21/19 16:21	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	Less than	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	5.97	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	28	2.0	mg/L	3/26/19 09:28	JGR

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

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05330**

Cope Well LF-4 T Metal CCR

Date & Time Sampled: March 20, 2019 14:57
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF4TM

LF-4 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	1300	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	1300	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	405	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	1690	143	ppb	3/26/19 09:41	MC

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

April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05331**

Cope Well LF-5 CCR

Date & Time Sampled: March 20, 2019 15:41
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF5TDS

LF-5 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	7.96	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011)	5.95		S.U.	3/21/19 16:21	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	Less than	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	6.97	0.50	mg/L	3/22/19 16:21	PRC
Total Dissolved Solid-SM2540C	36	2.0	mg/L	3/26/19 09:28	JGR

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

April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05332**

Cope Well LF-5 T Metal CCR

Date & Time Sampled: March 20, 2019 15:41
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF5TM

LF-5 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	2420	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	1890	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	884	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	2780	143	ppb	3/26/19 09:41	MC

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05333**

Cope Well LF-6 CCR

Date & Time Sampled: March 20, 2019 16:28
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF6TDS

LF-6 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	7.63	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011)	5.91		S.U.	3/22/19 11:16	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	Less than	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	13.9	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	29	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05334**

Cope Well LF-6 T Metal CCR

Date & Time Sampled: March 20, 2019 16:28
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COLF6TM

LF-6 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	2110	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	1750	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	420	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	2650	143	ppb	3/26/19 09:41	MC

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05335**

Cope GW Well MW-40 Anion

Date & Time Sampled: March 21, 2019 08:05
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COG40ANS

MW-40 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	117	0.114	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than	0.024	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011)	4.67		S.U.	3/22/19 11:16	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	220	0.387	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	Less than	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	527	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05336**

Cope GW Well MW-40 Tota1 Metal

Date & Time Sampled: March 21, 2019 08:05
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COG40TM

MW-40 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	154	38.458	ppb	3/26/19 09:41	MC
Calcium EPA 200.7	66100	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	1.6	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	15300	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	18000	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	36400	143	ppb	3/26/19 09:41	MC

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

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05337**

Cope Well AS-LF-1 CCR

Date & Time Sampled: March 21, 2019 08:51
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COASLF1TDS

LF-1 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	4.50	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011)	5.52		S.U.	3/22/19 11:16	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	8.86	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	7.96	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	28	2.0	mg/L	3/26/19 09:28	JGR

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05338**

Cope Well AS-LF-1 T Metal CCR

Date & Time Sampled: March 21, 2019 08:51
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COASLF1TM

LF-1 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	3120	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	1180	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	1060	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	2170	143	ppb	3/26/19 09:41	MC

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

Approved By: _____

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April 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05339**

Cope Well AS-LF-2 CCR

Date & Time Sampled: March 21, 2019 09:39
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COASLF2TDS

LF-2 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	14.4	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011)	5.55		S.U.	3/22/19 11:16	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	14.5	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	12.9	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	76	2.0	mg/L	3/26/19 09:28	JGR

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 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05340**

Cope Well AS- LF-2 T Metal CCR

Date & Time Sampled: March 21, 2019 09:39
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COASLF2TM

LF-2 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	5740	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	4060	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	1520	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	3600	143	ppb	3/26/19 09:41	MC

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 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05341**

Cope Well AS-LF 2 Duplicate CCR

Date & Time Sampled: March 21, 2019 09:45
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: CODUPTDS

Login Record File: 190321003

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	3/26/19 03:05	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/26/19 03:05	BB
pH by SM4500HB(2011)	5.57		S.U.	3/22/19 11:16	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	14.5	0.129	mg/L	3/26/19 03:05	BB
Total Alkalinity by SM2320B	14.9	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	63	2.0	mg/L	3/26/19 09:28	JGR

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 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05342**

Cope Well AS-LF 2 Duplicate CCR

Date & Time Sampled: March 21, 2019 09:45
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: CODUPTM

Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	5660	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	4030	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	1470	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	3590	143	ppb	3/26/19 09:41	MC

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 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05343**

Cope Well MW-16 TDS CCR

Date & Time Sampled: March 21, 2019 10:56
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COMW16TDS

MW-6 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	4.12	0.038	mg/L	3/26/19 03:05	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/26/19 03:05	BB
pH by SM4500HB(2011)	6.11		S.U.	3/22/19 11:16	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	1.48	0.129	mg/L	3/26/19 03:05	BB
Total Alkalinity by SM2320B	8.96	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	12	2.0	mg/L	3/26/19 09:28	JGR

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 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05344**

Cope Well MW-16 T Metal CCR

Date & Time Sampled: March 21, 2019 10:56
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COMW16TM

MW-06 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	1700	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	Less than	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	1110	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	1330	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	1250	143	ppb	3/26/19 09:41	MC

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 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05345**

Cope Well MW-06 TDS CCR

Date & Time Sampled: March 21, 2019 11:53
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COMW06TDS

MW16 Login Record File: 190321003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	18.7	0.038	mg/L	3/25/19 20:55	BB
Fluoride by IC EPA 300.0	Less than	0.008	mg/L	3/25/19 20:55	BB
pH by SM4500HB(2011)	5.20		S.U.	3/22/19 11:16	PRC
Holding Time of 15 minutes has been exceeded.					
Sulfates by IC EPA 300.0	Less than	0.129	mg/L	3/25/19 20:55	BB
Total Alkalinity by SM2320B	2.99	0.50	mg/L	3/22/19 11:16	PRC
Total Dissolved Solid-SM2540C	101	2.0	mg/L	3/26/19 09:28	JGR

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 12, 2019

REPORT TO:

Mike Moore C221

Rashida Marlowe

Sample ID: **BA05346**

Cope Well MW-06 T Metal CCR

Date & Time Sampled: March 21, 2019 11:53
Date & Time Submitted: March 21, 2019 13:30
Collected by: SANDEL,C Location Code: COMW06TM

MW-16 Login Record File: 190321003

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	3/26/19 09:41	MC
Calcium EPA 200.7	8840	182	ppb	3/26/19 09:41	MC
Lithium (CWA) 200.7	0.783	0.758	ppb	3/26/19 09:41	MC
Magnesium EPA 200.7	7430	18.7	ppb	3/26/19 09:41	MC
Potassium EPA 200.7	1200	310	ppb	3/26/19 09:41	MC
Sodium EPA 200.7	2530	143	ppb	3/26/19 09:41	MC

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

September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07389**

Cope Well BG-16 T Metal CCR

Date & Time Sampled: September 19, 2019 10:47
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COMW16TM

MW-16

Login Record File: 190923001

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	9/25/19 11:59	MC
Calcium EPA 200.7	1580	500	83.8	ppb	9/25/19 11:59	MC
Magnesium EPA 200.7	1020	50	18.7	ppb	9/25/19 11:59	MC
Potassium EPA 200.7	1360	1000	310	ppb	9/25/19 11:59	MC
Sodium EPA 200.7	1070	1000	254	ppb	9/25/19 11:59	MC

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: Michelle Coker

Dominion Energy

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

September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07390**

Cope Well BG-06 T Metal CCR

Date & Time Sampled: September 19, 2019 11:23
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COMW06TM

MW-06 Login Record File: 190923001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	176.00 (J)	200	38.458	ppb	9/25/19 09:37	MC
Calcium EPA 200.7	9420	500	83.8	ppb	9/25/19 09:37	MC
Magnesium EPA 200.7	7890	50	18.7	ppb	9/25/19 09:37	MC
Potassium EPA 200.7	1310	1000	310	ppb	9/25/19 09:37	MC
Sodium EPA 200.7	3040	1000	254	ppb	9/25/19 09:37	MC

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: Michelle Cohen

Dominion Energy

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

September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07391**

Cope Well Field Blank T Metal CCR

Date & Time Sampled: September 19, 2019 12:15
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COFBTM

Login Record File: 190923001

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	9/25/19 12:00	MC
Calcium EPA 200.7	Less than MDL	500	83.8	ppb	9/25/19 12:00	MC
Magnesium EPA 200.7	Less than MDL	50	18.7	ppb	9/25/19 12:00	MC
Potassium EPA 200.7	Less than MDL	1000	310	ppb	9/25/19 12:00	MC
Sodium EPA 200.7	Less than MDL	1000	254	ppb	9/25/19 12:00	MC

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: Michelle Cahn

Dominion Energy

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

September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07392**

Cope Well LF-6 T Metal CCR

Date & Time Sampled: September 19, 2019 12:22
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COLF6TM

LF-6 Login Record File: 190923001

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	9/26/19 09:54	MC
Calcium EPA 200.7	1870	500	83.8	ppb	9/26/19 09:54	MC
Magnesium EPA 200.7	1600	50	18.7	ppb	9/26/19 09:54	MC
Potassium EPA 200.7	394.00 (J)	1000	310	ppb	9/26/19 09:54	MC
Sodium EPA 200.7	2640	1000	254	ppb	9/26/19 09:54	MC

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: Michelle Coker

Dominion Energy

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

September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07393**

Cope Well LF-5 T Metal CCR

Date & Time Sampled: September 19, 2019 13:12
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COLF5TM

LF-5

Login Record File: 190923001

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	9/26/19 09:54	MC
Calcium EPA 200.7	2520	500	83.8	ppb	9/26/19 09:54	MC
Magnesium EPA 200.7	1870	50	18.7	ppb	9/26/19 09:54	MC
Potassium EPA 200.7	1070	1000	310	ppb	9/26/19 09:54	MC
Sodium EPA 200.7	3080	1000	254	ppb	9/26/19 09:54	MC

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: Michelle Cohn

Dominion Energy

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September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07394**

Cope Well LF-4 T Metal CCR

Date & Time Sampled: September 19, 2019 14:22
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COLF4TM

LF-4 Login Record File: 190923001

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	9/26/19 09:54	MC
Calcium EPA 200.7	1210	500	83.8	ppb	9/26/19 09:54	MC
Magnesium EPA 200.7	1070	50	18.7	ppb	9/26/19 09:54	MC
Potassium EPA 200.7	426.00 (J)	1000	310	ppb	9/26/19 09:54	MC
Sodium EPA 200.7	1470	1000	254	ppb	9/26/19 09:54	MC

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: Michelle Cahn

Dominion Energy

Central Laboratory (P-08)
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September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07395**

Cope Well LF-3 T Metal CCR

Date & Time Sampled: September 19, 2019 15:11
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COLF3TM

LF-3

Login Record File: 190923001

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	9/26/19 09:54	MC
Calcium EPA 200.7	799	500	83.8	ppb	9/26/19 09:54	MC
Magnesium EPA 200.7	537	50	18.7	ppb	9/26/19 09:54	MC
Potassium EPA 200.7	1110	1000	310	ppb	9/26/19 09:54	MC
Sodium EPA 200.7	1300	1000	254	ppb	9/26/19 09:54	MC

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: Michelle Cahn

Dominion Energy

Central Laboratory (P-08)
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September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07396**

Cope Well LF-02 TMetal CCR

Date & Time Sampled: September 19, 2019 16:01
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COLF2TM

LF-2 Login Record File: 190923001

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	9/26/19 09:59	MC
Calcium EPA 200.7	3260	500	83.8	ppb	9/26/19 09:59	MC
Magnesium EPA 200.7	2930	50	18.7	ppb	9/26/19 09:59	MC
Potassium EPA 200.7	3800	1000	310	ppb	9/26/19 09:59	MC
Sodium EPA 200.7	7390	1000	254	ppb	9/26/19 09:59	MC

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: Michelle Cahn

Dominion Energy

Central Laboratory (P-08)
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Tel: (803)217-9384
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September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07397**

Cope Well LF-01 TMetal CCR

Date & Time Sampled: September 20, 2019 08:49
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COLF1TM

LF-1 Login Record File: 190923001

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	9/26/19 09:59	MC
Calcium EPA 200.7	2680	500	83.8	ppb	9/26/19 09:59	MC
Magnesium EPA 200.7	1200	50	18.7	ppb	9/26/19 09:59	MC
Potassium EPA 200.7	770.00 (J)	1000	310	ppb	9/26/19 09:59	MC
Sodium EPA 200.7	7250	1000	254	ppb	9/26/19 09:59	MC

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: Michelle Cohen

Dominion Energy

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

September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07398**

Cope Well AS-02 TMetal CCR

Date & Time Sampled: September 20, 2019 09:25
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COAS02TM

AS-02 Login Record File: 190923001

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	9/26/19 09:59	MC
Calcium EPA 200.7	6980	500	83.8	ppb	9/26/19 09:59	MC
Magnesium EPA 200.7	4230	50	18.7	ppb	9/26/19 09:59	MC
Potassium EPA 200.7	1620	1000	310	ppb	9/26/19 09:59	MC
Sodium EPA 200.7	2720	1000	254	ppb	9/26/19 09:59	MC

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: Michelle Cook

Dominion Energy

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

September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07399**

Cope Well Duplicate T Metal CCR

Date & Time Sampled: September 20, 2019 09:30
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: CODUPTM

Login Record File: 190923001

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	9/26/19 09:59	MC
Calcium EPA 200.7	7180	500	83.8	ppb	9/26/19 09:59	MC
Magnesium EPA 200.7	4250	50	18.7	ppb	9/26/19 09:59	MC
Potassium EPA 200.7	1620	1000	310	ppb	9/26/19 09:59	MC
Sodium EPA 200.7	2830	1000	254	ppb	9/26/19 09:59	MC

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: Michelle Cohn

Dominion Energy

Central Laboratory (P-08)
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Columbia, SC 29212
Tel: (803)217-9384
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September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07400**

Cope Well AS-01 TMetal CCR

Date & Time Sampled: September 20, 2019 10:10
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COAS01TM

AS-01 Login Record File: 190923001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	74.50 (J)	200	38.458	ppb	9/25/19 11:53	MC
Calcium EPA 200.7	2090	500	83.8	ppb	9/25/19 11:53	MC
Magnesium EPA 200.7	862	50	18.7	ppb	9/25/19 11:53	MC
Potassium EPA 200.7	1030	1000	310	ppb	9/25/19 11:53	MC
Sodium EPA 200.7	2010	1000	254	ppb	9/25/19 11:53	MC

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: Michelle Cohn

Dominion Energy

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

September 30, 2019

REPORT TO:

Rashida Marlowe
Rocky Archer

Sample ID: **BA07401**

Cope GW Well MW-40 Tota1 Metal (RCRA)

Date & Time Sampled: September 20, 2019 11:11
Date & Time Submitted: September 22, 2019 13:30
Collected by: C.SANDEL Location Code: COG40TM

MW-40 Login Record File: 190923001

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(PQL)	Detection Limit(MDL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	118.00 (J)	200	38.458	ppb	9/26/19 09:59	MC
Calcium EPA 200.7	53900	500	83.8	ppb	9/26/19 09:59	MC
Magnesium EPA 200.7	12900	50	18.7	ppb	9/26/19 09:59	MC
Potassium EPA 200.7	14700	1000	310	ppb	9/26/19 09:59	MC
Sodium EPA 200.7	29800	1000	254	ppb	9/26/19 09:59	MC

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: Michelle Cook

Nautilus Geologic Consulting, PLLC

APPENDIX B

Statistical Analysis of Detection Monitoring Groundwater Quality Results

DOMINION ENERGY
SOUTH CAROLINA

COPE STATION
CLASS III LANDFILL

ORANGEBURG COUNTY, SOUTH CAROLINA

CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS REPORT

for the

March 2019 Sampling Event

Prepared on
APRIL 11, 2019

Dominion Energy®

STATISTICAL ANALYSIS REPORT

Groundwater Sampling

In accordance with 40 CFR Part 257.94, the 2019 first semi-annual groundwater sampling event for Detection Monitoring at the Cope Station Class III Landfill occurred on March 21, 2019. This event included groundwater sampling from background monitoring wells MW-BG-06, MW-BG-16, MW-LF-01, MW-AS-01, MW-AS-02, and MW-AS-40; and the downgradient compliance monitoring wells MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF06. 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 presents no statistically significant increases above/below background concentrations for the CCR Rule Appendix III constituents in the groundwater samples collected from the Landfill monitoring wells during the March 2019 Detection Monitoring event.

Cope Station

Detection Monitoring Summary

Run Id: 1

Location Id: **MW-LF-02**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	03/20/2019	BA05326	--	--	< 200.000	n		--

Run Id: 2

Location Id: **MW-LF-02**

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
Calcium, Total ug/L	03/20/2019	BA05326	1 of 2	95400.000	< 500.000	n		--

Run Id: 3

Location Id: **MW-LF-02**

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
Chloride, tot mg/L	03/20/2019	BA05325	1 of 2	140.00	28.60	n		--

Run Id: 4

Location Id: **MW-LF-02**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/20/2019	FLD20190320	1 of 2	5.631	4.300	n/n		--

Run Id: 5

Location Id: **MW-LF-02**

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.

Cope Station

Detection Monitoring Summary

Run Id: 5

Location Id: **MW-LF-02**

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
Fluoride, total mg/L	03/20/2019	BA05325	1 of 2	0.140	< 0.100	n		--

Run Id: 6

Location Id: **MW-LF-02**

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
Sulfate, tot mg/L	03/20/2019	BA05325	1 of 2	337.000	4.070	n		--

Run Id: 7

Location Id: **MW-LF-02**

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/I	03/20/2019	BA05325	1 of 2	737.000	98.000	n		--

Run Id: 8

Location Id: **MW-LF-03**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	03/20/2019	BA05328	--	--	< 200.000	n		--

Run Id: 9

Location Id: **MW-LF-03**

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.

Cope Station

Detection Monitoring Summary

Run Id: 9

Location Id: **MW-LF-03**

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
Calcium, Total ug/L	03/20/2019	BA05328	1 of 2	95400.000	< 500.000	n		--

Run Id: 10

Location Id: **MW-LF-03**

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
Chloride, tot mg/L	03/20/2019	BA05327	1 of 2	140.00	3.53	n		--

Run Id: 11

Location Id: **MW-LF-03**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/20/2019	FLD20190320	1 of 2	5.631	4.800	n/n		--

Run Id: 12

Location Id: **MW-LF-03**

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
Fluoride, total mg/L	03/20/2019	BA05327	1 of 2	0.140	< 0.100	n		--

Run Id: 13

Location Id: **MW-LF-03**

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.

Cope Station

Detection Monitoring Summary

Run Id: 13

Location Id: **MW-LF-03**

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
Sulfate, tot mg/L	03/20/2019	BA05327	1 of 2	337.000	0.760	n		--

Run Id: 14

Location Id: **MW-LF-03**

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	03/20/2019	BA05327	1 of 2	737.000	25.000	n		--

Run Id: 15

Location Id: **MW-LF-04**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	03/20/2019	BA05330	--	--	< 200.000	n		--

Run Id: 16

Location Id: **MW-LF-04**

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
Calcium, Total ug/L	03/20/2019	BA05330	1 of 2	95400.000	< 500.000	n		--

Run Id: 17

Location Id: **MW-LF-04**

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.

Cope Station

Detection Monitoring Summary

Run Id: 17

Location Id: **MW-LF-04**

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
Chloride, tot mg/L	03/20/2019	BA05329	1 of 2	140.00	3.78	n		--

Run Id: 18

Location Id: **MW-LF-04**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/20/2019	FLD20190320	1 of 2	5.631	4.700	n/n		--

Run Id: 19

Location Id: **MW-LF-04**

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
Fluoride, total mg/L	03/20/2019	BA05329	1 of 2	0.140	< 0.100	n		--

Run Id: 20

Location Id: **MW-LF-04**

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
Sulfate, tot mg/L	03/20/2019	BA05329	1 of 2	337.000	< 0.500	n		--

Run Id: 21

Location Id: **MW-LF-04**

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.

Cope Station

Detection Monitoring Summary

Run Id: 21

Location Id: **MW-LF-04**

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	03/20/2019	BA05329	1 of 2	737.000	28.000	n		--

Run Id: 22

Location Id: **MW-LF-05**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	03/20/2019	BA05332	--	--	< 200.000	n		--

Run Id: 23

Location Id: **MW-LF-05**

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
Calcium, Total ug/L	03/20/2019	BA05332	1 of 2	95400.000	< 500.000	n		--

Run Id: 24

Location Id: **MW-LF-05**

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
Chloride, tot mg/L	03/20/2019	BA05331	1 of 2	140.00	7.96	n		--

Run Id: 25

Location Id: **MW-LF-05**

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.

Cope Station

Detection Monitoring Summary

Run Id: 25

Location Id: **MW-LF-05**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/20/2019	FLD20190320	1 of 2	5.631	4.600	n/n		--

Run Id: 26

Location Id: **MW-LF-05**

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
Fluoride, total mg/L	03/20/2019	BA05331	1 of 2	0.140	< 0.100	n		--

Run Id: 27

Location Id: **MW-LF-05**

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
Sulfate, tot mg/L	03/20/2019	BA05331	1 of 2	337.000	< 0.500	n		--

Run Id: 28

Location Id: **MW-LF-05**

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	03/20/2019	BA05331	1 of 2	737.000	36.000	n		--

Run Id: 29

Location Id: **MW-LF-06**

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.

Cope Station

Detection Monitoring Summary

Run Id: 29

Location Id: **MW-LF-06**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	03/20/2019	BA05334	--	--	< 200.000	n		--

Run Id: 30

Location Id: **MW-LF-06**

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
Calcium, Total ug/L	03/20/2019	BA05334	1 of 2	95400.000	< 500.000	n		--

Run Id: 31

Location Id: **MW-LF-06**

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
Chloride, tot mg/L	03/20/2019	BA05333	1 of 2	140.00	7.63	n		--

Run Id: 32

Location Id: **MW-LF-06**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	03/20/2019	FLD20190320	1 of 2	5.631	4.600	n/n		--

Run Id: 33

Location Id: **MW-LF-06**

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.

Cope Station

Detection Monitoring Summary

Run Id: 33

Location Id: **MW-LF-06**

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
Fluoride, total mg/L	03/20/2019	BA05333	1 of 2	0.140	< 0.100	n		--

Run Id: 34

Location Id: **MW-LF-06**

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
Sulfate, tot mg/L	03/20/2019	BA05333	1 of 2	337.000	< 0.500	n		--

Run Id: 35

Location Id: **MW-LF-06**

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	03/20/2019	BA05333	1 of 2	737.000	29.000	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.

Cope Station
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	5	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-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

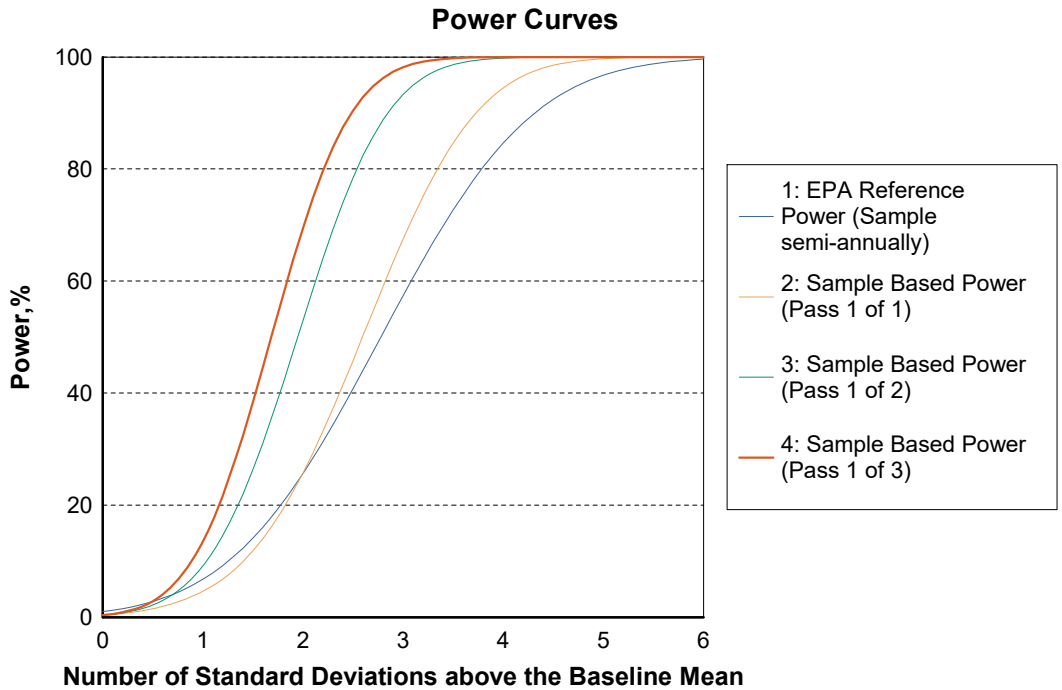
Insufficient Background: 0
DQR Tests: 1

Parameter Name:	**Field pH, S.U.**	Background Date Range:	05/01/2016 to 03/21/2019
Alpha Per Test FPR:	0.00174	Option for LT Pts:	0% to <= 15% Substitute ½ PQL
Total Pts	44	Kappa for Selected Verification Plan:	1.957
LT Pts	0	Mean	4.6102
%LT Pts	0	StdDev	0.5215
Normal/Log Normal	y/y	ln Mean	1.5223
Log Transformed:	n	ln StdDev	0.1095

Cope Station
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	5	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-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,M\



Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 3/31/2019
No. of Verification Resamples: 1

Run Id: 2

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-02	03/20/2019	<500.000	n

Run Id: 3

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-02	03/20/2019	28.60	n

Run Id: 5

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	45	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.54	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 03/21/2019**
Compliance Date Range: **03/01/2019 to 3/31/2019**
No. of Verification Resamples: **1**

MW-LF-02	03/20/2019	<0.100	n

Run Id: 6

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	**Sulfate, tot**	**mg/L**	**48**	**> 15% to <= 50% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**337.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-02	03/20/2019	4.070	n

Run Id: 7

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	**Total Dissolved Solids**	**mg/L**	**48**	**0% to <= 15% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**737.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-02	03/20/2019	98.000	n

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 3/31/2019
No. of Verification Resamples: 1

Run Id: 9

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-03	03/20/2019	<500.000	n

Run Id: 10

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-03	03/20/2019	3.53	n

Run Id: 12

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	45	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.54	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 03/21/2019**
Compliance Date Range: **03/01/2019 to 3/31/2019**
No. of Verification Resamples: **1**

MW-LF-03	03/20/2019	<0.100	n

Run Id: 13

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	**Sulfate, tot**	**mg/L**	**48**	**> 15% to <= 50% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**337.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-03	03/20/2019	0.760	n

Run Id: 14

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	**Total Dissolved Solids**	**mg/L**	**48**	**0% to <= 15% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**737.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-03	03/20/2019	25.000	n

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 3/31/2019
No. of Verification Resamples: 1

Run Id: 16

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-04	03/20/2019	<500.000	n

Run Id: 17

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-04	03/20/2019	3.78	n

Run Id: 19

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	45	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.54	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 03/21/2019**
Compliance Date Range: **03/01/2019 to 3/31/2019**
No. of Verification Resamples: **1**

MW-LF-04	03/20/2019	<0.100	n

Run Id: 20

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	**Sulfate, tot**	**mg/L**	**48**	**> 15% to <= 50% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**337.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-04	03/20/2019	<0.500	n

Run Id: 21

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	**Total Dissolved Solids**	**mg/L**	**48**	**0% to <= 15% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**737.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-04	03/20/2019	28.000	n

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 3/31/2019
No. of Verification Resamples: 1

Run Id: 23

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-05	03/20/2019	<500.000	n

Run Id: 24

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-05	03/20/2019	7.96	n

Run Id: 26

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	45	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.54	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 03/21/2019**
Compliance Date Range: **03/01/2019 to 3/31/2019**
No. of Verification Resamples: **1**

MW-LF-05	03/20/2019	<0.100	n

Run Id: 27

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	**Sulfate, tot**	**mg/L**	**48**	**> 15% to <= 50% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**337.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-05	03/20/2019	<0.500	n

Run Id: 28

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	**Total Dissolved Solids**	**mg/L**	**48**	**0% to <= 15% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**737.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-05	03/20/2019	36.000	n

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 3/31/2019
No. of Verification Resamples: 1

Run Id: 30

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-06	03/20/2019	<500.000	n

Run Id: 31

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	48	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-06	03/20/2019	7.63	n

Run Id: 33

Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	45	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.54	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 03/21/2019**
Compliance Date Range: **03/01/2019 to 3/31/2019**
No. of Verification Resamples: **1**

MW-LF-06	03/20/2019	<0.100	n

Run Id: 34

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	**Sulfate, tot**	**mg/L**	**48**	**> 15% to <= 50% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**337.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-06	03/20/2019	<0.500	n

Run Id: 35

Background Locations: **MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	**Total Dissolved Solids**	**mg/L**	**48**	**0% to <= 15% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.60	**737.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-06	03/20/2019	29.000	n

Cope Station

All Backgound Results Non-Detect

Location Id: **MW-LF-02** Run Id: 1
Parameter: **Boron, total**

Method: Double Quantification Rule
Percent ND: 100
ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
03/20/2019	200.000	200.000	38.458	200.000	0.000	Y	N

All Backgound Results Non-Detect

Location Id: **MW-LF-03** Run Id: 8

Parameter: **Boron, total**

Method: Double Quantification Rule

Percent ND: 100

ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
03/20/2019	200.000	200.000	38.458	200.000	0.000	Y	N

All Backgound Results Non-Detect

Location Id: **MW-LF-04** Run Id: 15

Parameter: **Boron, total**

Method: Double Quantification Rule

Percent ND: 100

ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
03/20/2019	200.000	200.000	38.458	200.000	0.000	Y	N

All Backgound Results Non-Detect

Location Id: **MW-LF-05** Run Id: 22

Parameter: **Boron, total**

Method: Double Quantification Rule
Percent ND: 100
ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
03/20/2019	200.000	200.000	38.458	200.000	0.000	Y	N

All Backgound Results Non-Detect

Location Id: **MW-LF-06** Run Id: 29

Parameter: **Boron, total**

Method: Double Quantification Rule

Percent ND: 100

ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
03/20/2019	200.000	200.000	38.458	200.000	0.000	Y	N

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 03/31/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-02

Run Id: 4

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
3/20/2019	4.300	5.631	n	3.589	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 03/31/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-03

Run Id: 11

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
3/20/2019	4.800	5.631	n	3.589	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 03/31/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-04

Run Id: 18

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
3/20/2019	4.700	5.631	n	3.589	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 03/31/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-05

Run Id: 25

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
3/20/2019	4.600	5.631	n	3.589	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 03/21/2019
Compliance Date Range: 03/01/2019 to 03/31/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-01,MW-AS-02,MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-06

Run Id: 32

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
3/20/2019	4.600	5.631	n	3.589	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 1

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

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

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.073
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 2

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 8

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

Median Slope:	-71.893	ug/L per year
Lower Confidence Limit of Slope, M1:	-1,074.642	ug/L per year
Upper Confidence Limit of Slope, M2+1:	388.856	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.793
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 3

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	-2.33	mg/L per year
Lower Confidence Limit of Slope, M1:	-4.26	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.64	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.92
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 4

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	-0.272	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.314	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.000
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 5

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 15% to <= 50% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 36

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:	-0.016	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.038	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.110
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 6

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	0.478	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.018	mg/L per year
Upper Confidence Limit of Slope, M2+1:	1.074	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.281
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 7

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	4.866	mg/L per year
Lower Confidence Limit of Slope, M1:	-8.740	mg/L per year
Upper Confidence Limit of Slope, M2+1:	15.447	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.793
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 8

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

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

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.041
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 9

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 8

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

Median Slope:	-251.165	ug/L per year
Lower Confidence Limit of Slope, M1:	-573.256	ug/L per year
Upper Confidence Limit of Slope, M2+1:	-72.966	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.811
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 10

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	0.08	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.14	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.23	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.75
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 11

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	0.111	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.334	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.261	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.552
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 12

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	1.159
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 13

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 75

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.637
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 14

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.735	mg/L per year
Upper Confidence Limit of Slope, M2+1:	4.047	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.140
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 15

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

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

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.041
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 16

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 8

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

Median Slope:	187.344	ug/L per year
Lower Confidence Limit of Slope, M1:	-220.709	ug/L per year
Upper Confidence Limit of Slope, M2+1:	447.861	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.754
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 17

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	0.57	mg/L per year
Lower Confidence Limit of Slope, M1:	0.12	mg/L per year
Upper Confidence Limit of Slope, M2+1:	1.12	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.06
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	Upward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 18

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	0.193	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.095	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.269	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.045
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 19

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	1.159
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 20

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 83

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	-1.922
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 21

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	7.247	mg/L per year
Lower Confidence Limit of Slope, M1:	1.036	mg/L per year
Upper Confidence Limit of Slope, M2+1:	16.922	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.998
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Upward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 22

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

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

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.041
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 23

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 8

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

Median Slope:	221.081	ug/L per year
Lower Confidence Limit of Slope, M1:	-157.153	ug/L per year
Upper Confidence Limit of Slope, M2+1:	384.285	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.166
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 24

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	1.07	mg/L per year
Lower Confidence Limit of Slope, M1:	0.81	mg/L per year
Upper Confidence Limit of Slope, M2+1:	1.36	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.32
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	Upward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 25

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	-0.558	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.267	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.000
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 26

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	1.159
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 27

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.000
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 28

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	6.537	mg/L per year
Lower Confidence Limit of Slope, M1:	3.011	mg/L per year
Upper Confidence Limit of Slope, M2+1:	10.325	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.612
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Upward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 29

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

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

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.041
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 30

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 8

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

Median Slope:	-322.463	ug/L per year
Lower Confidence Limit of Slope, M1:	-547.520	ug/L per year
Upper Confidence Limit of Slope, M2+1:	-125.913	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.811
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 31

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	-0.16	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.42	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-0.06	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.13
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 32

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	-0.204	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.139	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.070
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 33

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	1.159
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 34

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.000
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 35

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 03/20/2019
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:	-2.839	mg/L per year
Lower Confidence Limit of Slope, M1:	-7.598	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.997	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.033
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

DOMINION ENERGY
SOUTH CAROLINA

COPE STATION
CLASS III LANDFILL

ORANGEBURG COUNTY, SOUTH CAROLINA

CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS REPORT

for the

September 2019 Sampling Event

Prepared on
November 26, 2019

Dominion Energy®

STATISTICAL ANALYSIS REPORT

Groundwater Sampling

In accordance with 40 CFR Part 257.94, the 2019 second semi-annual groundwater sampling event for Detection Monitoring at the Cope Station Landfill occurred on September 19, 2019. This event included groundwater sampling from background monitoring wells MW-BG-06, MW-BG-16, MW-LF-01, MW-AS-01, MW-AS-02, and MW-AS-40; and the downgradient compliance monitoring wells MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF06. 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 presents no statistically significant increases above (above/below for pH) background concentrations for the CCR Rule Appendix III constituents in the groundwater samples collected from the Landfill monitoring wells during the September 2019 Detection Monitoring event.

Cope Station

Detection Monitoring Summary

Run Id: 1

Location Id: **MW-LF-02**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	09/19/2019	BA07396	--	--	< 200.000	n		--

Run Id: 2

Location Id: **MW-LF-02**

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
Calcium, Total ug/L	09/19/2019	BA07396	1 of 2	95400.000	3260.000	n		--

Run Id: 3

Location Id: **MW-LF-02**

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
Chloride, tot mg/L	09/19/2019	BA07383	1 of 2	140.00	31.10	n		--

Run Id: 4

Location Id: **MW-LF-02**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/19/2019	FLD20190919	1 of 2	5.314	4.000	n/n		--

Run Id: 5

Location Id: **MW-LF-02**

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.

Cope Station

Detection Monitoring Summary

Run Id: 5

Location Id: **MW-LF-02**

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
Fluoride, total mg/L	09/19/2019	BA07383	1 of 2	0.140	< 0.100	n		--

Run Id: 6

Location Id: **MW-LF-02**

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
Sulfate, tot mg/L	09/19/2019	BA07383	1 of 2	337.000	4.030	n		--

Run Id: 7

Location Id: **MW-LF-02**

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	09/19/2019	BA07383	1 of 2	737.000	66.000	n		--

Run Id: 8

Location Id: **MW-LF-03**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	09/19/2019	BA07395	--	--	< 200.000	n		--

Run Id: 9

Location Id: **MW-LF-03**

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.

Cope Station

Detection Monitoring Summary

Run Id: 9

Location Id: **MW-LF-03**

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
Calcium, Total ug/L	09/19/2019	BA07395	1 of 2	95400.000	799.000	n		--

Run Id: 10

Location Id: **MW-LF-03**

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
Chloride, tot mg/L	09/19/2019	BA07382	1 of 2	140.00	3.39	n		--

Run Id: 11

Location Id: **MW-LF-03**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/19/2019	FLD20190919	1 of 2	5.314	4.200	n/n		--

Run Id: 12

Location Id: **MW-LF-03**

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
Fluoride, total mg/L	09/19/2019	BA07382	1 of 2	0.140	< 0.100	n		--

Run Id: 13

Location Id: **MW-LF-03**

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.

Cope Station

Detection Monitoring Summary

Run Id: 13

Location Id: **MW-LF-03**

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
Sulfate, tot mg/L	09/19/2019	BA07382	1 of 2	337.000	< 0.500	n		--

Run Id: 14

Location Id: **MW-LF-03**

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	09/19/2019	BA07382	1 of 2	737.000	27.000	n		--

Run Id: 15

Location Id: **MW-LF-04**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	09/19/2019	BA07394	--	--	< 200.000	n		--

Run Id: 16

Location Id: **MW-LF-04**

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
Calcium, Total ug/L	09/19/2019	BA07394	1 of 2	95400.000	1210.000	n		--

Run Id: 17

Location Id: **MW-LF-04**

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.

Cope Station

Detection Monitoring Summary

Run Id: 17

Location Id: **MW-LF-04**

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
Chloride, tot mg/L	09/19/2019	BA07381	1 of 2	140.00	3.68	n		--

Run Id: 18

Location Id: **MW-LF-04**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/19/2019	FLD20190919	1 of 2	5.314	4.200	n/n		--

Run Id: 19

Location Id: **MW-LF-04**

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
Fluoride, total mg/L	09/19/2019	BA07381	1 of 2	0.140	< 0.100	n		--

Run Id: 20

Location Id: **MW-LF-04**

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
Sulfate, tot mg/L	09/19/2019	BA07381	1 of 2	337.000	< 0.500	n		--

Run Id: 21

Location Id: **MW-LF-04**

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.

Cope Station

Detection Monitoring Summary

Run Id: 21

Location Id: **MW-LF-04**

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	09/19/2019	BA07381	1 of 2	737.000	32.000	n		--

Run Id: 22

Location Id: **MW-LF-05**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	09/19/2019	BA07393	--	--	< 200.000	n		--

Run Id: 23

Location Id: **MW-LF-05**

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
Calcium, Total ug/L	09/19/2019	BA07393	1 of 2	95400.000	2520.000	n		--

Run Id: 24

Location Id: **MW-LF-05**

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
Chloride, tot mg/L	09/19/2019	BA07380	1 of 2	140.00	8.87	n		--

Run Id: 25

Location Id: **MW-LF-05**

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.

Cope Station

Detection Monitoring Summary

Run Id: 25

Location Id: **MW-LF-05**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/19/2019	FLD20190919	1 of 2	5.314	4.200	n/n		--

Run Id: 26

Location Id: **MW-LF-05**

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
Fluoride, total mg/L	09/19/2019	BA07380	1 of 2	0.140	< 0.100	n		--

Run Id: 27

Location Id: **MW-LF-05**

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
Sulfate, tot mg/L	09/19/2019	BA07380	1 of 2	337.000	< 0.500	n		--

Run Id: 28

Location Id: **MW-LF-05**

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	09/19/2019	BA07380	1 of 2	737.000	84.000	n		--

Run Id: 29

Location Id: **MW-LF-06**

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.

Cope Station

Detection Monitoring Summary

Run Id: 29

Location Id: **MW-LF-06**

Compliance Test: **Double Quantification Rule**

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Boron, total ug/L	09/19/2019	BA07392	--	--	< 200.000	n		--

Run Id: 30

Location Id: **MW-LF-06**

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
Calcium, Total ug/L	09/19/2019	BA07392	1 of 2	95400.000	1870.000	n		--

Run Id: 31

Location Id: **MW-LF-06**

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
Chloride, tot mg/L	09/19/2019	BA07379	1 of 2	140.00	7.39	n		--

Run Id: 32

Location Id: **MW-LF-06**

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

Parameter	Sample Date	Lab Id	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend
Field pH S.U.	09/19/2019	FLD20190919	1 of 2	5.314	4.400	n/n		--

Run Id: 33

Location Id: **MW-LF-06**

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.

Cope Station

Detection Monitoring Summary

Run Id: 33

Location Id: **MW-LF-06**

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
Fluoride, total mg/L	09/19/2019	BA07379	1 of 2	0.140	< 0.100	n		--

Run Id: 34

Location Id: **MW-LF-06**

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
Sulfate, tot mg/L	09/19/2019	BA07379	1 of 2	337.000	< 0.500	n		--

Run Id: 35

Location Id: **MW-LF-06**

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	09/19/2019	BA07379	1 of 2	737.000	7.000	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.

Cope Station
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	5	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-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

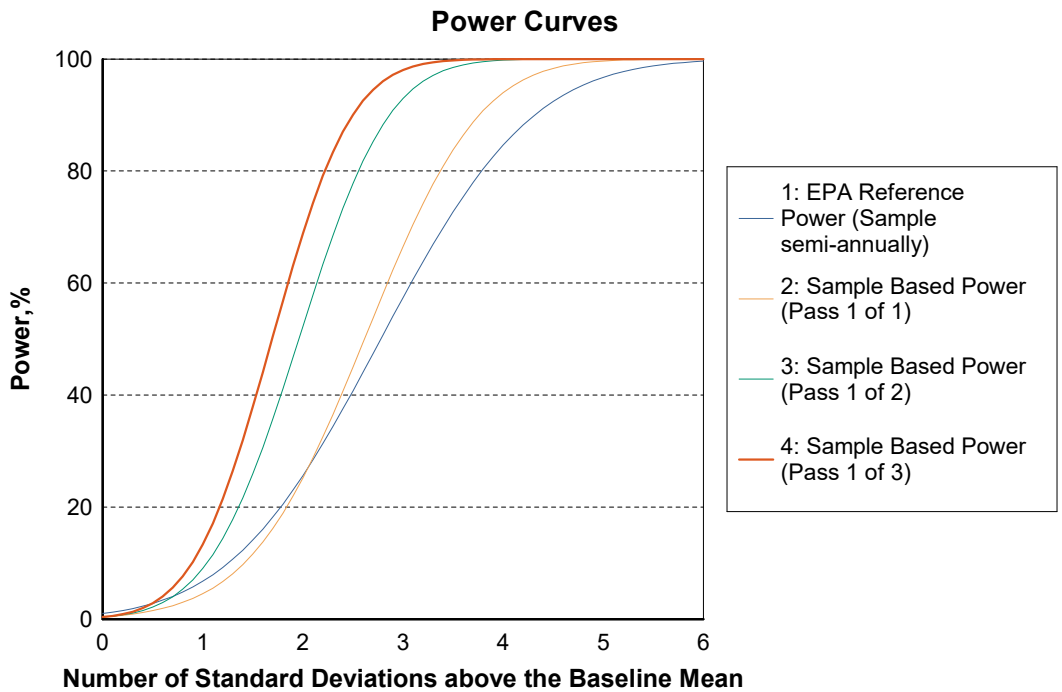
Insufficient Background: 0
DQR Tests: 1

Parameter Name:	**Field pH, S.U.**	Background Date Range:	05/01/2016 to 09/20/2019
Alpha Per Test FPR:	0.00174	Option for LT Pts:	0% to <= 15% Substitute ½ PQL
Total Pts	40	Kappa for Selected Verification Plan:	1.974
LT Pts	0	Mean	4.4745
%LT Pts	0	StdDev	0.4255
Normal/Log Normal	y/y	ln Mean	1.4942
Log Transformed:	n	ln StdDev	0.0914

Cope Station
Parametric Prediction Interval on Background - Background Data Calculation

Number Of Locations:	5	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-AS-40,MW-BG-06,MW-BG-16,MW-LF-01 - Field pH, S.U



Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 9/30/2019
No. of Verification Resamples: 1

Run Id: 2

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-02	09/19/2019	3,260.000	n

Run Id: 3

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-02	09/19/2019	31.10	n

Run Id: 5

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	41	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.45	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 09/20/2019**
Compliance Date Range: **09/01/2019 to 9/30/2019**
No. of Verification Resamples: **1**

MW-LF-02	09/19/2019	<0.100	n

Run Id: 6

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	Sulfate, tot	mg/L	42	> 15% to <= 50% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	337.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-02	09/19/2019	4.030	n

Run Id: 7

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	Total Dissolved Solids	mg/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	737.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-02	09/19/2019	66.000	n

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 9/30/2019
No. of Verification Resamples: 1

Run Id: 9

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-03	09/19/2019	799.000	n

Run Id: 10

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-03	09/19/2019	3.39	n

Run Id: 12

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	41	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.45	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 09/20/2019**
Compliance Date Range: **09/01/2019 to 9/30/2019**
No. of Verification Resamples: **1**

MW-LF-03	09/19/2019	<0.100	n

Run Id: 13

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	**Sulfate, tot**	**mg/L**	**42**	**> 15% to <= 50% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	**337.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-03	09/19/2019	<0.500	n

Run Id: 14

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	**Total Dissolved Solids**	**mg/L**	**42**	**0% to <= 15% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	**737.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-03	09/19/2019	27.000	n

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 9/30/2019
No. of Verification Resamples: 1

Run Id: 16

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-04	09/19/2019	1,210.000	n

Run Id: 17

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-04	09/19/2019	3.68	n

Run Id: 19

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	41	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.45	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 09/20/2019**
Compliance Date Range: **09/01/2019 to 9/30/2019**
No. of Verification Resamples: **1**

MW-LF-04	09/19/2019	<0.100	n

Run Id: 20

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	**Sulfate, tot**	**mg/L**	**42**	**> 15% to <= 50% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	**337.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-04	09/19/2019	<0.500	n

Run Id: 21

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	**Total Dissolved Solids**	**mg/L**	**42**	**0% to <= 15% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	**737.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-04	09/19/2019	32.000	n

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 9/30/2019
No. of Verification Resamples: 1

Run Id: 23

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-05	09/19/2019	2,520.000	n

Run Id: 24

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-05	09/19/2019	8.87	n

Run Id: 26

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	41	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.45	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 09/20/2019**
Compliance Date Range: **09/01/2019 to 9/30/2019**
No. of Verification Resamples: **1**

MW-LF-05	09/19/2019	<0.100	n

Run Id: 27

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	**Sulfate, tot**	**mg/L**	**42**	**> 15% to <= 50% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	**337.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-05	09/19/2019	<0.500	n

Run Id: 28

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	**Total Dissolved Solids**	**mg/L**	**42**	**0% to <= 15% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	**737.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-05	09/19/2019	84.000	n

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 9/30/2019
No. of Verification Resamples: 1

Run Id: 30

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00916	Calcium, Total	ug/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	95,400.000

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-06	09/19/2019	1,870.000	n

Run Id: 31

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00940	Chloride, tot	mg/L	42	0% to <= 15% Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	140.00

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-06	09/19/2019	7.39	n

Run Id: 33

Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00951	Fluoride, total	mg/L	41	> 50% to <= 100 % Substitute PQL

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.45	0.140

Location	Sample Date	Sample Result	Greater than PU (Upper)

Cope Station
Non-Parametric Prediction Interval on Background

User Supplied Information

Background Date Range: **05/01/2016 to 09/20/2019**
Compliance Date Range: **09/01/2019 to 9/30/2019**
No. of Verification Resamples: **1**

MW-LF-06	09/19/2019	<0.100	n

Run Id: 34

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00945	**Sulfate, tot**	**mg/L**	**42**	**> 15% to <= 50% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	**337.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-06	09/19/2019	<0.500	n

Run Id: 35

Background Locations: **MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Parameter Code	Parameter Name	Units	Background Sample Count	Option for LT Pts.
00515	**Total Dissolved Solids**	**mg/L**	**42**	**0% to <= 15% Substitute PQL**

One-Sided Upper Confidence Level, %	PU (Upper) Value:
99.48	**737.000**

Location	Sample Date	Sample Result	Greater than PU (Upper)
MW-LF-06	09/19/2019	7.000	n

Cope Station

All Backgound Results Non-Detect

Location Id: **MW-LF-02** Run Id: 1
Parameter: **Boron, total**

Method: Double Quantification Rule
Percent ND: 100
ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
09/19/2019	200.000	200.000	38.458	200.000	0.000	Y	N

All Backgound Results Non-Detect

Location Id: **MW-LF-03** Run Id: 8

Parameter: **Boron, total**

Method: Double Quantification Rule
Percent ND: 100
ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
09/19/2019	200.000	200.000	38.458	200.000	0.000	Y	N

All Backgound Results Non-Detect

Location Id: **MW-LF-04** Run Id: 15

Parameter: **Boron, total**

Method: Double Quantification Rule
Percent ND: 100
ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
09/19/2019	200.000	200.000	38.458	200.000	0.000	Y	N

All Backgound Results Non-Detect

Location Id: **MW-LF-05** Run Id: 22

Parameter: **Boron, total**

Method: Double Quantification Rule
Percent ND: 100
ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
09/19/2019	200.000	200.000	38.458	200.000	0.000	Y	N

All Backgound Results Non-Detect

Location Id: **MW-LF-06** Run Id: 29

Parameter: **Boron, total**

Method: Double Quantification Rule
Percent ND: 100
ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	PQL	RL	Non Detect	Exceedance
09/19/2019	200.000	200.000	38.458	200.000	0.000	Y	N

All Backgound Results Non-Detect

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 09/30/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-02

Run Id: 4

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
9/19/2019	4.000	5.314	n	3.635	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 09/30/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-03

Run Id: 11

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
9/19/2019	4.200	5.314	n	3.635	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 09/30/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-04

Run Id: 18

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
9/19/2019	4.200	5.314	n	3.635	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 09/30/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-05

Run Id: 25

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
9/19/2019	4.200	5.314	n	3.635	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided: 2
Background Date Range: 05/01/2016 to 09/20/2019
Compliance Date Range: 09/01/2019 to 09/30/2019
Compliance Locations: MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06
Background Locations: MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01

Location MW-LF-06

Run Id: 32

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Sample Date	Analysis Result	Upper Limit	Result > Upper Limit	Lower Limit	Result < Lower Limit
9/19/2019	4.400	5.314	n	3.635	n

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Parametric Prediction Interval on Background - Compliance Analysis

User Supplied Information

Sided:	**2**
Background Date Range:	**05/01/2016 to 09/20/2019**
Compliance Date Range:	**09/01/2019 to 09/30/2019**
Compliance Locations:	**MW-LF-02,MW-LF-03,MW-LF-04,MW-LF-05,MW-LF-06**
Background Locations:	**MW-AS-40,MW-BG-06,MW-BG-16,MW-LF-01**

Prediction Interval is based on Normal Distribution and the number of compliance periods (k).

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 1

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

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

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.491
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 2

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 7

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

Median Slope:	-65.296	ug/L per year
Lower Confidence Limit of Slope, M1:	-842.719	ug/L per year
Upper Confidence Limit of Slope, M2+1:	320.743	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.095
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 3

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	-1.00	mg/L per year
Lower Confidence Limit of Slope, M1:	-3.36	mg/L per year
Upper Confidence Limit of Slope, M2+1:	1.08	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.55
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 4

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	-0.221	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.198	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.277
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 5

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 15% to <= 50% Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 40

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:	-0.013	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.029	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.299
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 6

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	0.489	mg/L per year
Lower Confidence Limit of Slope, M1:	0.003	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.883	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.642
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 7

Location ID: MW-LF-02
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	3.569	mg/L per year
Lower Confidence Limit of Slope, M1:	-6.346	mg/L per year
Upper Confidence Limit of Slope, M2+1:	11.383	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.766
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 8

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

Median Slope:	0.000	ug/L per year
Lower Confidence Limit of Slope, M1:	-248.144	ug/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.451
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 9

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 8

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

Median Slope:	-157.552	ug/L per year
Lower Confidence Limit of Slope, M1:	-375.260	ug/L per year
Upper Confidence Limit of Slope, M2+1:	-35.276	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.867
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 10

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
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:	-0.13	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:	0.67
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 11

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	-0.229	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.211	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.123
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 12

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.935
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 13

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 77

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.334
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 14

Location ID: MW-LF-03
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	0.777	mg/L per year
Lower Confidence Limit of Slope, M1:	-2.001	mg/L per year
Upper Confidence Limit of Slope, M2+1:	4.004	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.620
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 15

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

Median Slope:	0.000	ug/L per year
Lower Confidence Limit of Slope, M1:	-248.144	ug/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.451
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 16

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 8

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

Median Slope:	55.729	ug/L per year
Lower Confidence Limit of Slope, M1:	-189.701	ug/L per year
Upper Confidence Limit of Slope, M2+1:	387.298	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.549
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 17

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	0.33	mg/L per year
Lower Confidence Limit of Slope, M1:	0.01	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:	1.71
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	Upward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 18

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	0.037	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.120	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.233	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.680
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 19

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.935
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 20

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 85

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	-1.964
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 21

Location ID: MW-LF-04
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	5.454	mg/L per year
Lower Confidence Limit of Slope, M1:	1.123	mg/L per year
Upper Confidence Limit of Slope, M2+1:	10.306	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.209
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Upward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 22

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

Median Slope:	0.000	ug/L per year
Lower Confidence Limit of Slope, M1:	-248.144	ug/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.451
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 23

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 8

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

Median Slope:	217.187	ug/L per year
Lower Confidence Limit of Slope, M1:	21.432	ug/L per year
Upper Confidence Limit of Slope, M2+1:	345.100	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.769
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Upward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 24

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	1.04	mg/L per year
Lower Confidence Limit of Slope, M1:	0.86	mg/L per year
Upper Confidence Limit of Slope, M2+1:	1.30	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.58
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	Upward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 25

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	-0.276	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.186	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.187
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 26

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.935
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 27

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.000
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 28

Location ID: MW-LF-05
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	7.953	mg/L per year
Lower Confidence Limit of Slope, M1:	4.861	mg/L per year
Upper Confidence Limit of Slope, M2+1:	16.428	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.056
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Upward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 29

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 01022
Parameter: Boron, total
Units: ug/L
Percent of ND: 100

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

Median Slope:	0.000	ug/L per year
Lower Confidence Limit of Slope, M1:	-248.144	ug/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.451
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 30

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00916
Parameter: Calcium, Total
Units: ug/L
Percent of ND: 8

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

Median Slope:	-261.983	ug/L per year
Lower Confidence Limit of Slope, M1:	-398.464	ug/L per year
Upper Confidence Limit of Slope, M2+1:	-147.618	ug/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.989
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 31

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: 0% to <= 15% Substitute PQL

Parameter Code: 00940
Parameter: Chloride, tot
Units: mg/L
Percent of ND: 0

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

Median Slope:	-0.14	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.35	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-0.06	mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.26
Z test:	1.64
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 32

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	-0.187	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.130	S.U. per year

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.000
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 33

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00951
Parameter: Fluoride, total
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.935
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 34

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
Option for LT Points: > 50% to <= 100 % Substitute PQL

Parameter Code: 00945
Parameter: Sulfate, tot
Units: mg/L
Percent of ND: 100

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

Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	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:	0.000
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	None

Cope Station
Theil Sen Mann-Kendall Trend Analysis

Post Hoc Trend Analysis

Run Id: 35

Location ID: MW-LF-06
Confidence Level: 0.95
Date Range: 05/12/2016 to 09/19/2019
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:	-4.457	mg/L per year
Lower Confidence Limit of Slope, M1:	-9.273	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:	-1.653
Z test:	1.645
At the 1.0 % Confidence Level (One-Sided Test):	Downward

Cope Station
Theil Sen Mann-Kendall Trend Analysis