



ANNUAL GROUNDWATER MONITORING REPORT FOR 2019

COLORADO SPRINGS UTILITIES' CLEAR SPRING RANCH Coal Combustion Residuals Landfill El Paso County, Colorado

January 31, 2020

Prepared For:

40 CFR Part 257.90(e)

and

Colorado Department of Public Health & Environment

Hazardous Materials & Waste Management Division

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Groundwater Classification and Management.....	1
2.0	GROUNDWATER FLOW ANALYSIS & GEOLOGIC PROFILE.....	2
3.0	GROUNDWATER QUALITY SAMPLING & ANALYSIS.....	2
3.1	Detection Monitoring.....	3
3.2	Assessment Monitoring	3
3.3	Quality Assurance / Quality Control.....	3
3.4	Monitoring Well Installation, Repair and Abandonment.....	4
4.0	STATISTICAL ANALYSIS RESULTS SUMMARY.....	4
5.0	GROUNDWATER PROTECTION STANDARDS	4
6.0	SUMMARY OF FINDINGS	6
6.1	Risk	6
6.2	Activities for 2020.....	6

APPENDIX A Site Plan & Groundwater Elevation Contours

APPENDIX B Statistical Analysis Reports

APPENDIX C Analytical Results of Groundwater Samples

APPENDIX D Laboratory Analytical Reports

1.0 INTRODUCTION

This annual report summarizes the groundwater monitoring activities performed during 2019 in association with the Coal Combustion Residuals (CCR) Landfill at Colorado Springs Utilities' (Utilities') Clear Spring Ranch (CSR), located west-southwest of the intersection of Interstate 25 and Ray Nixon Road (Exit 125) in El Paso County, Colorado.

The CCR Landfill is regulated by the U.S. Environmental Protection Agency (EPA), the Colorado Department of Public Health & Environment (CDPHE), and El Paso County. The land-use is authorized via a Certificate of Designation (CD) obtained from El Paso County (CD #004-001).

The groundwater monitoring activities were performed for compliance with the EPA's Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments (40 CFR §257.50 through §257.107) (EPA CCR Rule) and the CDPHE's Regulations Pertaining to Solid Waste Sites & Facilities (6 CCR 1007-2, Part 1, Section 2.2 - Ground Water Monitoring).

The groundwater monitoring activities were conducted in general accordance with the Professional Engineer certified and CDPHE approved¹ Coal Combustion Residuals Landfill Groundwater Detection Monitoring Plan.²

This report fulfills the EPA's, CDPHE's, and El Paso County's annual reporting requirements.

1.1 Groundwater Classification and Management

From its inception in the late 1970's, the CCR Landfill has been designed and operated to protect the Fountain Creek Alluvial Aquifer, which is the closest aquifer to the site used for drinking water purposes. The CCR Landfill is located ~0.5 mile upgradient of a Retention Dam, described below. The Fountain Creek Alluvial Aquifer is located ~0.5 mile downgradient of the Retention Dam. There are no drinking water or agricultural wells within the CD Area, in which the CCR Landfill is located. There is no reasonable potential for future domestic or agricultural uses of groundwater within this area, as it is owned and controlled by Utilities.

Previously evaluated groundwater quality data indicates that groundwater upgradient of and underlying the CSR CD Area, in which the CCR Landfill is located, has a total dissolved solids (TDS) concentration exceeding 10,000 mg/l. The EPA, in their Guidelines for Groundwater Classification Under the EPA Groundwater Protection Strategy³ (Guidelines), classifies groundwater with TDS concentrations greater than or equal to 10,000 mg/l as Class III water. Class III is defined as "groundwater not a potential source of drinking water and/or limited beneficial use."

To protect the Fountain Creek Alluvial Aquifer, groundwater associated with the CCR Landfill is managed via a Retention Dam and pump back system. The Retention Dam was constructed downgradient of the CCR Landfill in 1978 to inhibit the off-site migration of surface water and groundwater. The dam has a

¹ E-Mail from Jill Parisi / CDPHE to Patti Zietlow / Colorado Springs Utilities Re: Clear Spring Ranch CCR Landfill Groundwater Detection Monitoring Plan. November 14, 2017.

² AECOM. Coal Combustion Residuals Landfill Groundwater Detection Monitoring Plan, Clear Spring Ranch, El Paso County, Colorado. Revision 0. October 2017.

³ U.S. EPA. Guidelines for Groundwater Classification Under the EPA Groundwater Protection Strategy. Office of Groundwater Protection. June 1988.

bentonite core and is keyed into the underlying Pierre Shale bedrock. To improve the dam's performance, in the 1990s, Utilities installed a bentonite barrier wall along the upgradient toe of the dam, and a french drain & pump back system downgradient of the dam. The french drain captures water seepage through the dam. The drain extends for ~525 feet along the southern portion of the dam. The french drain's collection trench is gravel filled and slopes towards a sump located at the northern end of the trench. An extraction well and pump remove water collected in the sump and pump it back to the upgradient Retention Dam pond. The dam is registered with and inspected by the Office of the State Engineer - Division of Water Resources - Dam Safety Branch (Dam I.D. #100401). A site plan is presented in Appendix A.

2.0 GROUNDWATER FLOW ANALYSIS & GEOLOGIC PROFILE

The CCR Landfill is located within a small, west-east trending topographic depression that is underlain with, and bounded to the north and south, by Pierre Shale. An investigation of CSR involving laboratory hydraulic conductivity tests on cores of un-weathered Pierre Shale indicated that the Pierre Shale is essentially impermeable⁴. The surficial geology consists of ~4 to ~50 feet of alluvial sediments⁵ deposited on top of the Pierre Shale.

A figure of the site showing the potentiometric groundwater surface, interpolated elevations of the underlying Pierre Shale bedrock, and the estimated boundary of the Fountain Creek Alluvial Aquifer is presented in Appendix A.

The groundwater surface was prepared using September and November 2019 groundwater elevation measurements. The bedrock elevations were obtained from historical on-site exploratory and monitoring well boring logs. To aid in the *visualization* of the aquifer boundary, wherever a groundwater contour intersects a bedrock contour at the same elevation, the groundwater contour was cut at that theoretical intersection. For example, where the groundwater contour with an elevation of 5,400 feet intersects the bedrock contour with the same elevation, the water level generally would not be higher on the ridge than 5,400 feet.

The groundwater surface data suggests that groundwater beneath the CCR Landfill generally flows in a southeasterly direction towards the Retention Dam.

3.0 GROUNDWATER QUALITY SAMPLING & ANALYSIS

As detailed in the CCR Landfill Groundwater Detection Monitoring Plan, the current groundwater quality monitoring well network for the CCR Landfill is comprised of five background wells (CC-1, FC-1, FC-2, FC-3A, & FC-3B), four downgradient wells (SC-10, SC-11, SC-12, & SC-13) along the eastern edge of the landfill, and one cross gradient well (SC-14) on the south side of the landfill. The locations of the monitoring wells are depicted on the figure presented in Appendix A.

Utilities' CCR Landfill migrated from Detection Monitoring to Assessment Monitoring in 2017. Assessment Monitoring is required by the EPA CCR Rule whenever a statistically significant increase over background levels has been detected for one or more of the Detection Monitoring constituents.⁶ Assessment Monitoring

⁴ Haley & Aldrich. Hannah Ranch Dam Seepage Analysis Preliminary Engineering Report. April 1994.

⁵ Layne Western. Ash Disposal Site, R.D. Nixon Power Plant. Carl Nuzman, Bruce Maxwell & Carl Larson. August 1977.

⁶ EPA CCR Rule §257.95(a) "Assessment monitoring is required whenever a statistically significant increase over background levels has been detected for one or more of the constituents listed in appendix III to this part."

must continue until concentrations of all Detection and Assessment Monitoring constituents are determined to be at or below background values using statistical procedures for two consecutive sampling events⁷.

Prior to 2019, the following constituents have been measured at concentrations estimated statistically as being significantly higher than background and have not been determined to be at or below background values using statistical procedures for two consecutive sampling events:

- ▼ Boron within monitoring wells SC-11 & SC-12.
- ▼ Fluoride within monitoring well SC-12, SC-13, & SC-14.

Therefore, both Detection Monitoring and Assessment Monitoring continued throughout 2019.

3.1 Detection Monitoring

During 2019, Utilities collected groundwater samples semi-annually from the monitoring wells listed in Section 3.0 above, and analyzed the samples using EPA and/or industry accepted methods for the Detection Monitoring constituents listed in Appendix III of the EPA CCR Rule (boron, calcium, chloride, fluoride, pH, sulfate, & total dissolved solids).

The laboratory analytical results and sampling dates are summarized in the table presented in Appendix C. Copies of the analytical reports and chain of custody documentation are presented in Appendix D. The analytical reports specify the analytical method used for each constituent.

3.2 Assessment Monitoring

During 2019, Utilities collected groundwater samples semi-annually from the monitoring wells listed in Section 3.0 above, and analyzed the samples using EPA and/or industry accepted methods for the Assessment Monitoring constituents listed in Appendix IV of the EPA CCR Rule (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, radium 226, radium 228, selenium, and thallium).

The laboratory analytical results and sampling dates are summarized in the table presented in Appendix C. Copies of the analytical reports and chain of custody documentation are presented in Appendix D. The analytical reports specify the analytical method used for each constituent.

3.3 Quality Assurance / Quality Control

Quality assurance and quality control (QA / QC) measures were implemented to ensure the reliability and validity of field and analytical data. Appendix D contains copies of the laboratory analytical reports along with QA / QC data. The QA / QC data includes duplicate samples (identified as Well ID_Dup), equipment / decontamination blanks (identified by Equip-Blk), method blanks (identified as LRB – Lab Reagent Blank) and laboratory control sample results. The sample duplicates show consistency in the lab work performed. No significant anomalies were reported within the laboratory's QA / QC reports.

Review of the groundwater monitoring program data, however, did indicate that the groundwater samples collected and analyzed for radium 226 & radium 228 during the September 2018 and May 2019 monitoring

⁷ EPA CCR Rule §257.95(e) "If the concentrations of all constituents listed in appendices III and IV to this part are shown to be at or below background values, using the statistical procedures in § 257.93(g), for two consecutive sampling events, the owner or operator may return to detection monitoring of the CCR unit."

events were inadvertently field-filtered. Within the 2018 Annual Report, the September 2018 data was incorrectly reported as being “total” concentrations (i.e., instead of “dissolved” concentrations).

The finding is considered de minimis, as the highest “total” concentration of Radium 226 & 228 Combined measured in groundwater collected from the downgradient monitoring wells listed in Section 3.0 during the preceding (February 2018) and subsequent (September 2019) semi-annual monitoring events was 4.1 pCi/l, which is below the Groundwater Protection Standard (GWPS) for Radium 226 & 228 Combined of 5 pCi/l (see Section 4.0).

The radium 226 & radium 228 concentrations reported for the September 2018 and May 2019 monitoring events were not used for statistical analysis purpose in association with this annual report; nor will be henceforth. Procedures have been reviewed and adjusted to minimize the potential for recurrence of this finding.

3.4 Monitoring Well Installation, Repair and Abandonment

No CCR Landfill groundwater monitoring wells were installed or decommissioned during 2019.

4.0 STATISTICAL ANALYSIS RESULTS SUMMARY

The methods used to statistically analyze the Detection and Assessment Monitoring groundwater data, the rationale for the analytical methods, and the results of the statistical analysis are presented in Appendix B.

The 2019 groundwater sampling results suggest that the following constituents continued to be present at concentrations estimated statistically as being significantly higher than background:

- ▼ Boron within monitoring wells SC-11 and SC-12.
- ▼ Fluoride within monitoring well SC-12, SC-13, & SC-14.

5.0 GROUNDWATER PROTECTION STANDARDS

Groundwater Protection Standards (GWPS) were generated in accordance with §257.95(d)(2)⁸ of the EPA CCR Rule. The Rule states in §257.95(h) that the GWPS shall be:

- (1) *For constituents for which a maximum contaminant level (MCL) has been established under §141.62 and §141.66 of this title, the MCL for that constituent;*
- (2) *For the following constituents:*
 - (i) Cobalt 6 micrograms per liter (ug/l);
 - (ii) Lead 15 ug/l;
 - (iii) Lithium 40 ug/l;
 - (iv) Molybdenum 100 ug/l.
- (3) *For constituents for which the background level is higher than the levels identified under paragraphs (h)(1) and (h)(2) of this section, the background concentration.*

⁸ 40 CFR § 257.95(d)(2) states that facilities must “establish groundwater protection standards for all constituents detected pursuant to paragraph (b) or (d) of this section.”

To create the GWPS, an upper tolerance limit (UTL) was calculated for each of the EPA CCR Rule Appendix IV constituents to establish their background concentration. Each UTL was then compared to the corresponding MCL or EPA CCR Rule standard. If a UTL was greater than the MCL or standard, then the UTL was used as the GWPS.

GWPS were calculated after each of the 2019 semi-annual sampling events and are provided in Appendix B. The GWPS resulting from the second semi-annual sampling event are presented in yellow highlight in the table below:

GROUNDWATER PROTECTION STANDARDS

Appendix IV Constituent	MCL (mg/l)	EPA CCR Rule Standard (mg/l)	Background Higher than MCL or Standard *	Upper Tolerance Limit
Antimony	0.006	-	Yes	0.008
Arsenic	0.01	-	Yes	0.01171
Barium	2	-	Yes	2.833
Beryllium	0.004	-	No	0.0002
Cadmium	0.005	-	No	0.005
Chromium	0.1	-	No	0.01
Cobalt	-	0.006	Yes	0.0139
Fluoride	4	-	No	0.985
Lead	-	0.015	No	0.009
Lithium	-	0.040	Yes	1.16
Mercury	0.002	-	No	0.000024
Molybdenum	-	0.100	No	0.0201
Selenium	0.05	-	Yes	0.1985
Thallium	0.002	-	Yes	0.0063
Radium 226 & 228 Combined	5 pCi/l	-	No	4.825

* Upper tolerance limit calculated for the constituents and compared to the MCL or the EPA CCR Rule standard. If the UTL was greater than the MCL or standard, then the UTL was used as the GWPS.

Once GWPS have been calculated, §257.95(g)(3)⁹ requires that the owner / operator determine if any of the Appendix IV constituents are present at a statistically significant level exceeding the GWPS. To determine such, a confidence interval was calculated for each constituent and compared to the GWPS. The confidence interval calculations for each of the 2019 semi-annual sampling events are provided in Appendix B and indicate that no GWPS were exceeded at a statistically significant level.

⁹ 40 CFR § 257.95(g)(3) Within 90 days of finding that any of the constituents listed in appendix IV to this part have been detected at a statistically significant level exceeding the groundwater protection standards, the owner or operator must either..."

6.0 SUMMARY OF FINDINGS

Comparison of the groundwater flow to those historically measured shows de minimis differences in the groundwater flow regime beneath the site. Groundwater associated with the CCR Landfill continues to flow to the southeast towards the Retention Dam, which inhibits its migration off-site.

Statistical analysis suggests that boron concentrations at downgradient groundwater monitoring wells SC-11 and SC-12 and fluoride concentrations at downgradient ground monitoring wells SC-12, SC-13, and SC-14 exhibit a statistically significant increase over background concentrations; therefore, the CCR Landfill shall continue with Assessment Monitoring¹⁰.

No EPA CCR Rule Appendix IV constituents were measured at a statistically significant level exceeding the GWPS; therefore, initiating an assessment of corrective measures is not required at this time.

The overall CCR Landfill groundwater monitoring program was reviewed, and in consideration of the complex geology and other constraints, Utilities believes that the current Professional Engineer certified and CDPHE approved¹¹ Coal Combustion Residuals Landfill Groundwater Detection Monitoring Plan.¹² continues to be appropriate for the site and compliant with the EPA CCR Rule.

6.1 Risk

Utilities believes that the risk posed by the CCR Landfill to human health and the environment via the groundwater exposure pathway continues to be low for the following reasons:

- ▼ Groundwater underlying the CSR CD Area (which includes the CCR Landfill) is not used for domestic or agricultural purposes. There are no drinking water or agricultural wells within the CD Area and is no reasonable potential for future domestic or agricultural uses of groundwater within this area, as it is owned and controlled by Utilities. The high TDS of groundwater upgradient of and beneath the CD Area also discourages its use for domestic or agricultural purposes.
- ▼ The CSR Retention Dam inhibits the off-site migration of stormwater and groundwater associated with the CCR Landfill; therefore, limiting the potential for exposure. The Retention Dam largely hydrologically disconnects the CCR Landfill associated groundwater from the downgradient Fountain Creek Alluvial Aquifer (i.e., the closest drinking water source).
- ▼ No EPA CCR Rule Appendix IV constituents were measured at a statistically significant level exceeding the GWPS.

6.2 Activities for 2020

For 2020, Utilities plans to continue with Detection Monitoring and Assessment Monitoring.

¹⁰ EPA CCR's Rule §257.95 (f) "If the concentrations of any constituent in appendices III and IV to this part are above background values, but all concentrations are below the groundwater protection standard established under paragraph (h) of this section, using the statistical procedures in § 257.93(g), the owner or operator must continue assessment monitoring in accordance with this section".

¹¹ E-Mail from Jill Parisi / CDPHE to Patti Zietlow / Colorado Springs Utilities Re: Clear Spring Ranch CCR Landfill Groundwater Detection Monitoring Plan. November 14, 2017.

¹² AECOM. Coal Combustion Residuals Landfill Groundwater Detection Monitoring Plan, Clear Spring Ranch, El Paso County, Colorado. Revision 0. October 2017.



Report Distribution List:

- ▼ Jill Parisi / Colorado Department of Public Health & Environment
- ▼ Mark Gebhart / El Paso County Planning Department
- ▼ Ian Gavin / Colorado Springs Utilities - Nixon Power Plant
- ▼ Utilities CCR Landfill Website
- ▼ EVS File: 550-688-7

APPENDIX A

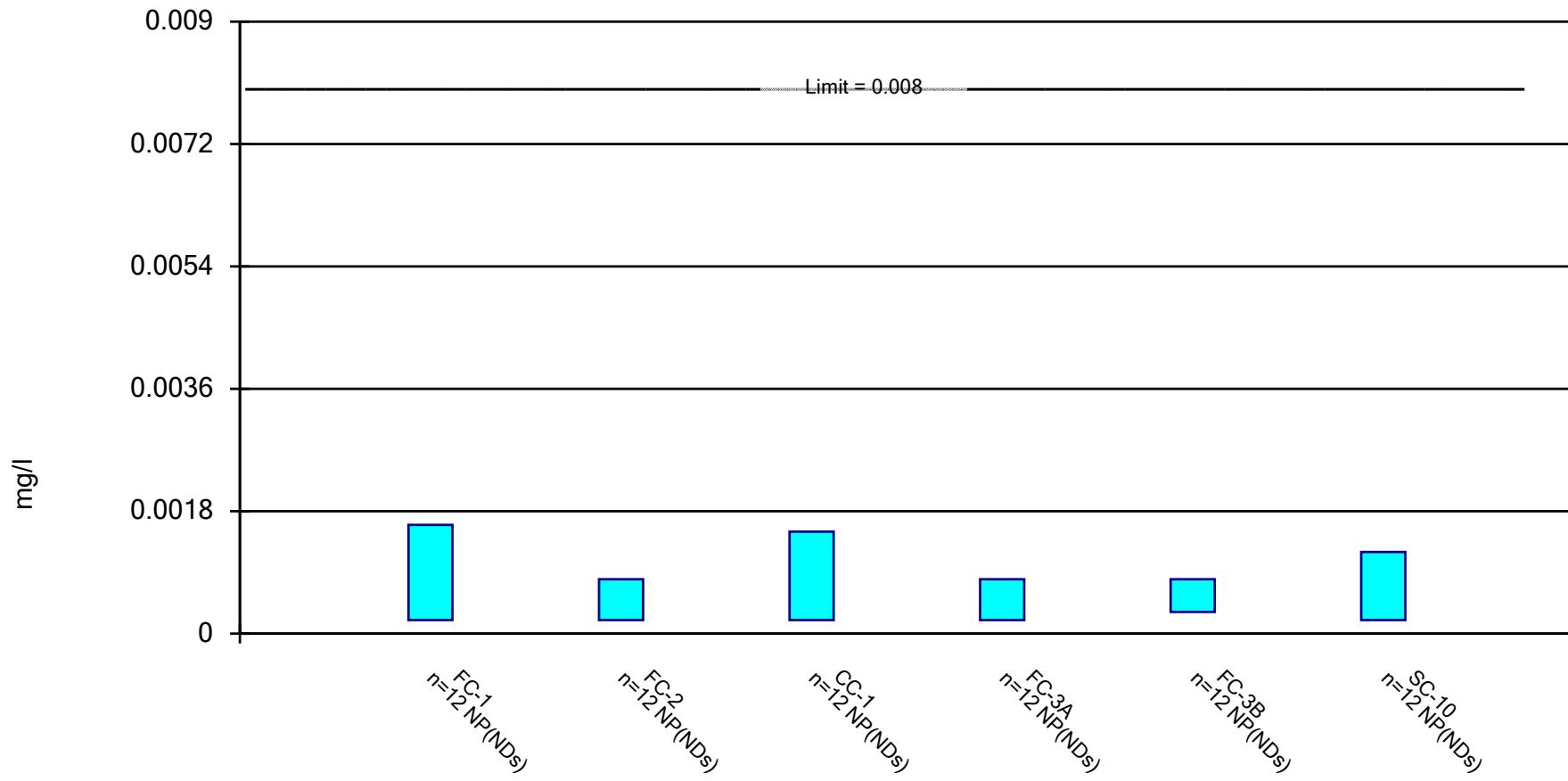
Site Plan & Groundwater Elevation Contours

APPENDIX B

Statistical Analysis Reports

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony, Total Analysis Run 9/10/2019 11:05 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

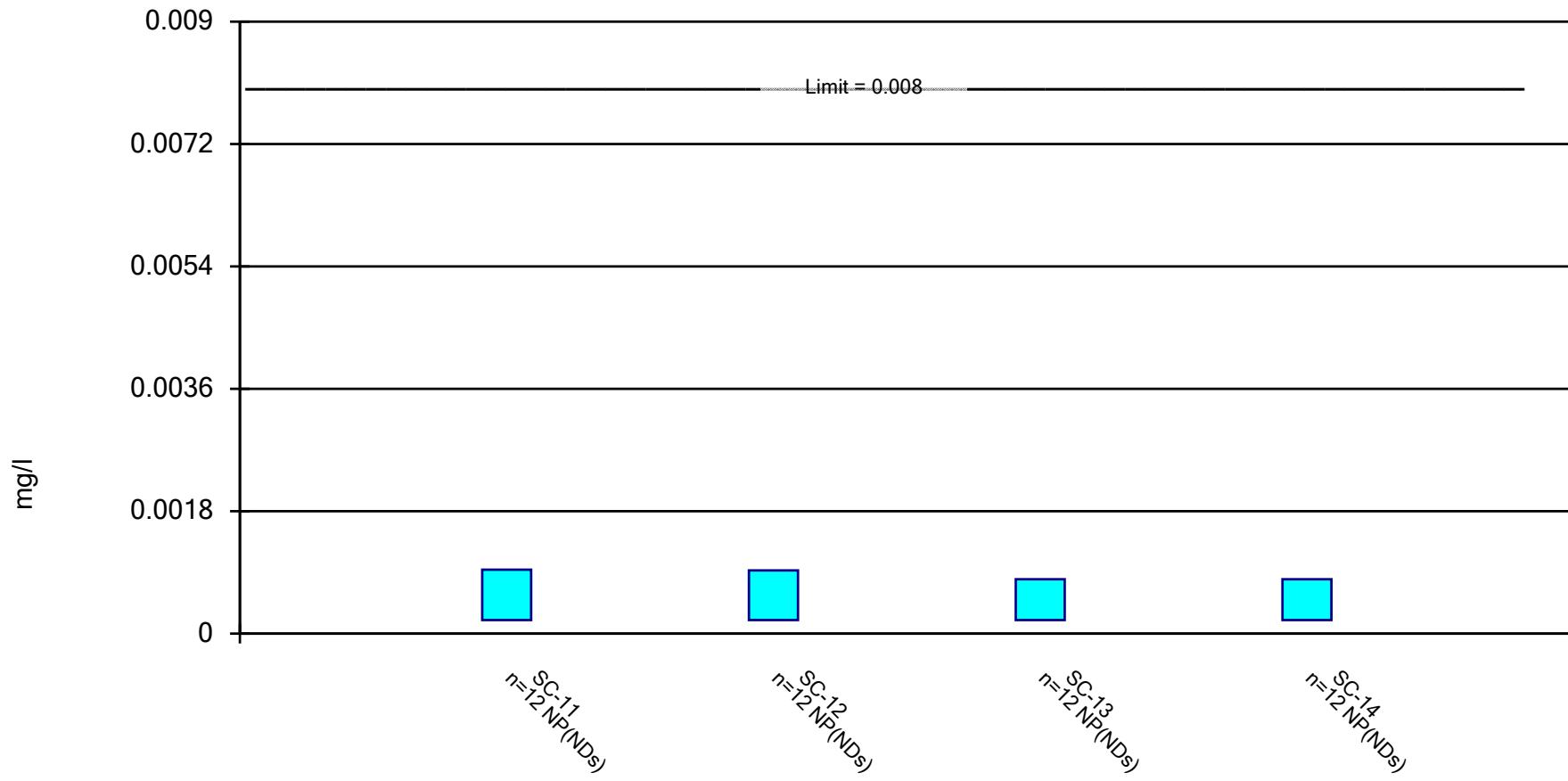
Confidence Interval

Constituent: Antimony, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.0002	<0.0002	<0.0002 (D)			<0.0002
6/23/2016				0.00021		
6/27/2016					0.00065	
8/2/2016	<0.0002 (D)	<0.0002	<0.0002	<0.0002	0.00061	
8/3/2016						<0.0002 (D)
9/19/2016	<0.0002 (D1)					
9/20/2016						<0.0002 (D1)
10/12/2016	<0.0002 (D1)	<0.0002 (D1)	0.0004 (D)	0.00026 (D)	0.00032 (D)	
10/13/2016						0.00025 (D)
11/15/2016	0.0016 (D)	<0.0002 (D1)	0.0015 (D)	0.0015 (D)	0.0015 (D)	
11/16/2016						0.0012 (D)
1/18/2017	<0.0005 (D1P)	<0.0005 (D1P)	<0.0005 (D1)	0.00055 (D)	<0.0005 (D1)	
1/19/2017						<0.0005 (D1)
2/14/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	0.00066 (D)	
2/15/2017						0.00054 (D)
2/28/2017	<0.0005 (D1)					
3/1/2017						<0.0005 (D1)
11/13/2017	<0.0005 (D1)					
11/14/2017						<0.0005 (D1)
2/14/2018	<0.008	<0.0008	<0.008	<0.0008 (D)	<0.0008	
2/15/2018						<0.008
9/25/2018	<0.0005 (D)	<0.0005	<0.0005	<0.0005	<0.0005	
9/26/2018						<0.0005
5/14/2019	<0.0005 (D1D)					
5/15/2019						<0.0005 (D1D)
Mean	0.001117	0.0004	0.001125	0.0005183	0.0006033	0.001091
Std. Dev.	0.0022	0.0001954	0.002192	0.000358	0.0003226	0.002193
Upper Lim.	0.0016	0.0008	0.0015	0.0008	0.0008	0.0012
Lower Lim.	0.0002	0.0002	0.0002	0.0002	0.00032	0.0002

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony, Total Analysis Run 9/10/2019 11:05 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

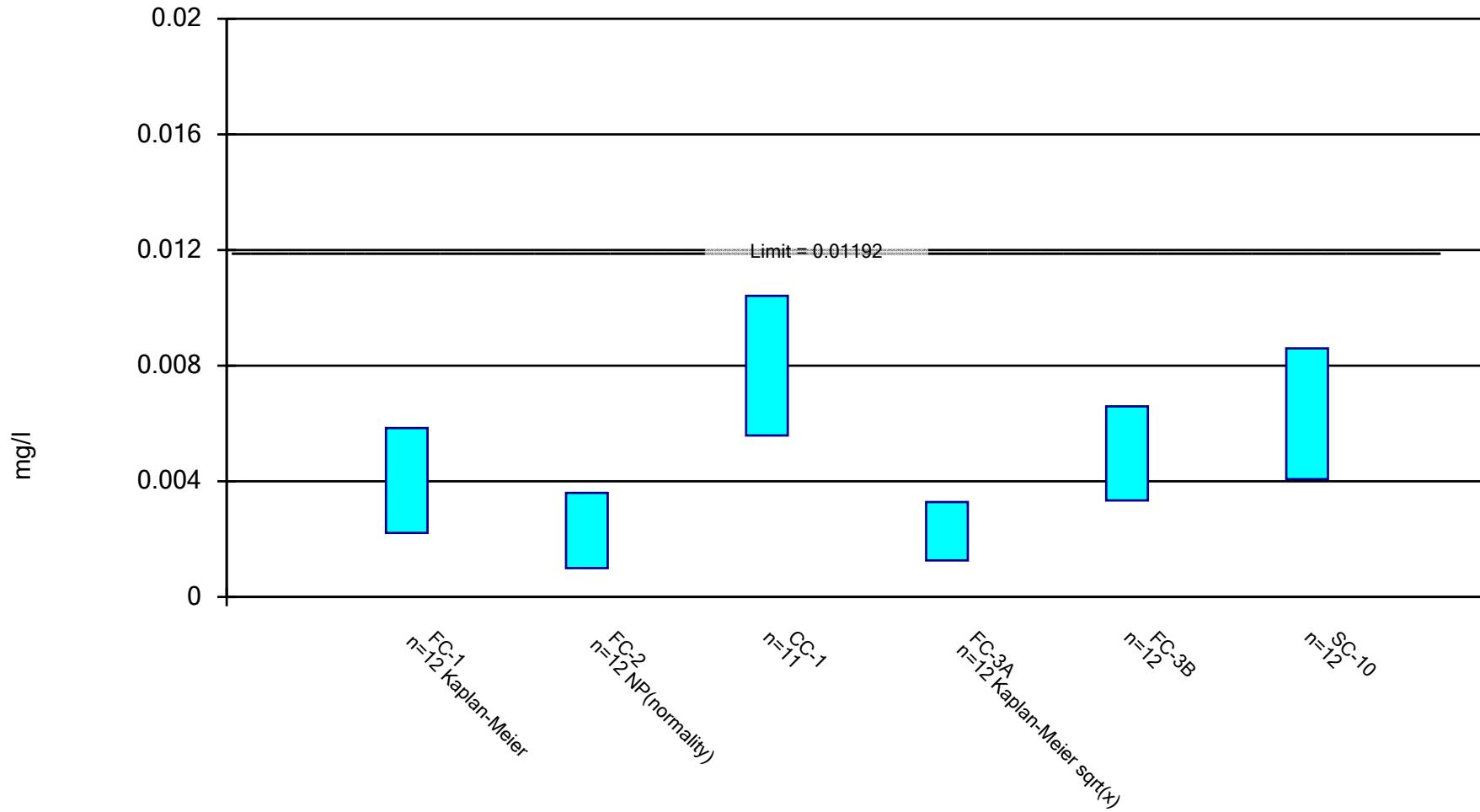
Constituent: Antimony, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.0002	<0.0002	<0.0002	0.00021
8/3/2016	<0.0002	<0.0002	<0.0002	<0.0002
9/20/2016	<0.0002 (D1)	<0.0002 (D1)	0.0002 (D)	0.00022 (D)
10/13/2016	0.0002 (D)	0.00023 (D)	<0.0002 (D1)	<0.0002 (D1)
11/16/2016	0.00094 (D)	0.00093 (D)	0.00059 (D)	<0.0002 (D1)
1/19/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
2/15/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
3/1/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
11/14/2017	<0.0005 (D1)	<0.0005 (D1)	0.0071 (DT)	<0.0005 (D1)
2/15/2018	<0.008	<0.008	<0.0008	<0.0008
9/26/2018	<0.0005	<0.0005	<0.0005 (D)	<0.0005
5/15/2019	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
Mean	0.001062	0.001063	0.0009825	0.0004025
Std. Dev.	0.002195	0.002194	0.001936	0.0001927
Upper Lim.	0.00094	0.00093	0.0008	0.0008
Lower Lim.	0.0002	0.0002	0.0002	0.0002

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, Total Analysis Run 9/10/2019 11:05 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

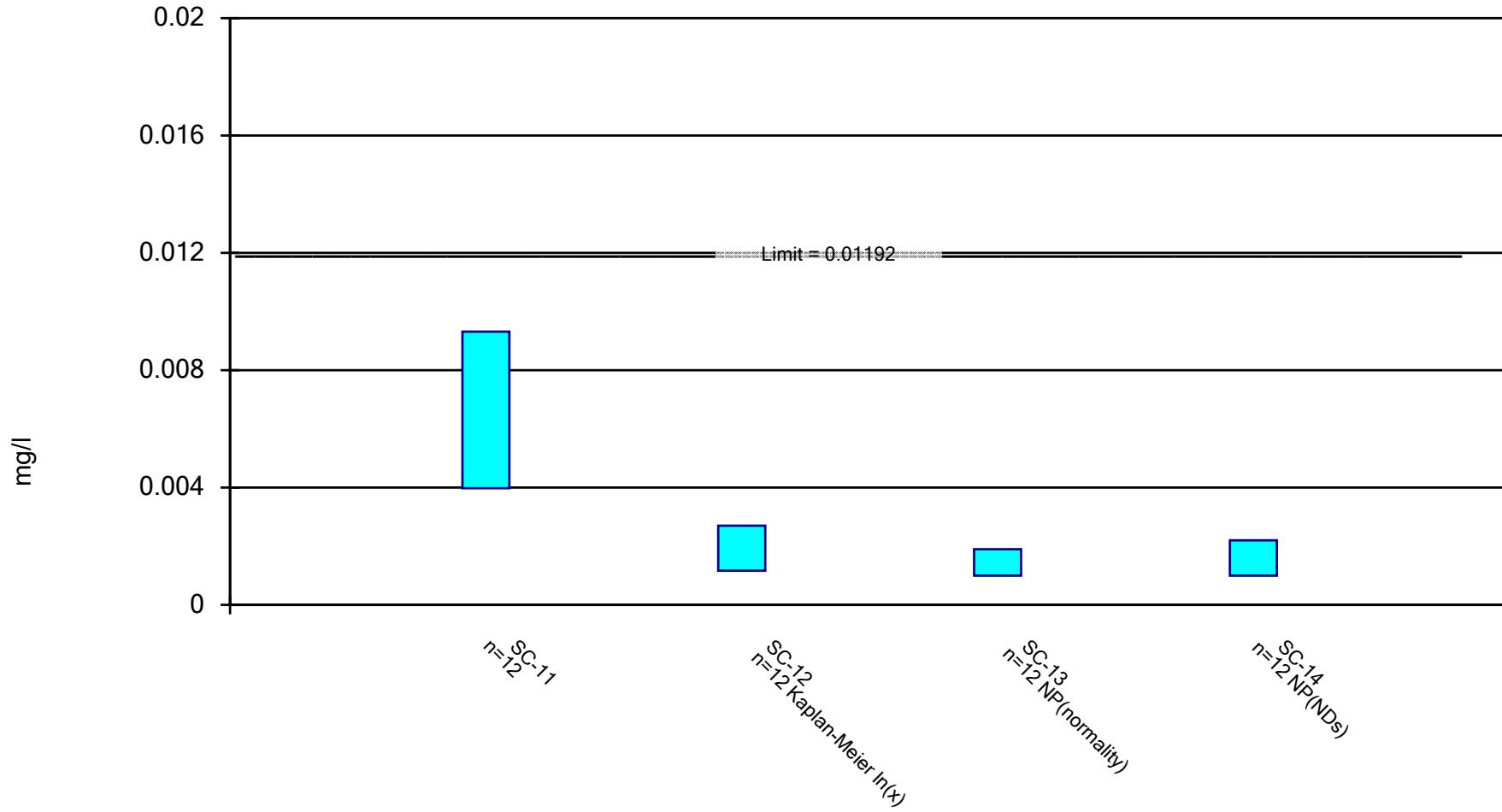
Confidence Interval

Constituent: Arsenic, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.0042	0.0025	0.0109 (D)			0.0083
6/23/2016				0.0031		
6/27/2016					0.0026	
8/2/2016	0.0025 (D)	0.0016	0.0105	0.0021	0.0031	
8/3/2016						0.00625 (D)
9/19/2016	0.0094 (D)	0.0036 (D)	0.0089 (D)	0.0029 (D)	0.0051 (D)	
9/20/2016						0.0073 (D)
10/12/2016	0.0023 (D)	<0.001 (D1)	0.0071 (D)	0.001325 (D)	0.0056 (D)	
10/13/2016						0.0051 (D)
11/15/2016	0.0036 (D)	<0.001 (D1)	0.0054 (D)	0.0018 (D)	0.007 (D)	
11/16/2016						0.003 (D)
1/18/2017	0.0061 (D)	0.0011 (D)	0.00255 (D)	<0.001 (D1)	0.0057 (D)	
1/19/2017						0.0039 (D)
2/14/2017	<0.001 (D1)	<0.001 (D1)	0.00495 (D)	<0.001 (D1)	0.004 (D)	
2/15/2017						0.0054 (D)
2/28/2017	0.00625 (D)	0.0076 (D)	0.011 (D)	0.0069 (D)	0.0081 (D)	
3/1/2017						0.0126 (D)
11/13/2017	0.0041 (D)	0.0025 (D)	0.008 (D)	0.0022 (D)	0.0064 (D)	
11/14/2017						0.0095 (D)
2/14/2018	<0.002	<0.001		0.00115 (D)	0.0026	
2/15/2018						0.0022
9/25/2018	0.005 (D)	0.0014	0.0115	0.003	0.0074	
9/26/2018						0.0068
5/14/2019	0.0029	0.0013 (D)	0.0072 (D)	0.0017 (D)	0.002 (D)	
5/15/2019						0.0057 (D)
Mean	0.004113	0.002133	0.008	0.002348	0.004967	0.006338
Std. Dev.	0.002317	0.001908	0.002897	0.001622	0.002074	0.00288
Upper Lim.	0.005844	0.0036	0.01041	0.003282	0.006594	0.008597
Lower Lim.	0.002215	0.001	0.005586	0.001267	0.003339	0.004078

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, Total Analysis Run 9/10/2019 11:05 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

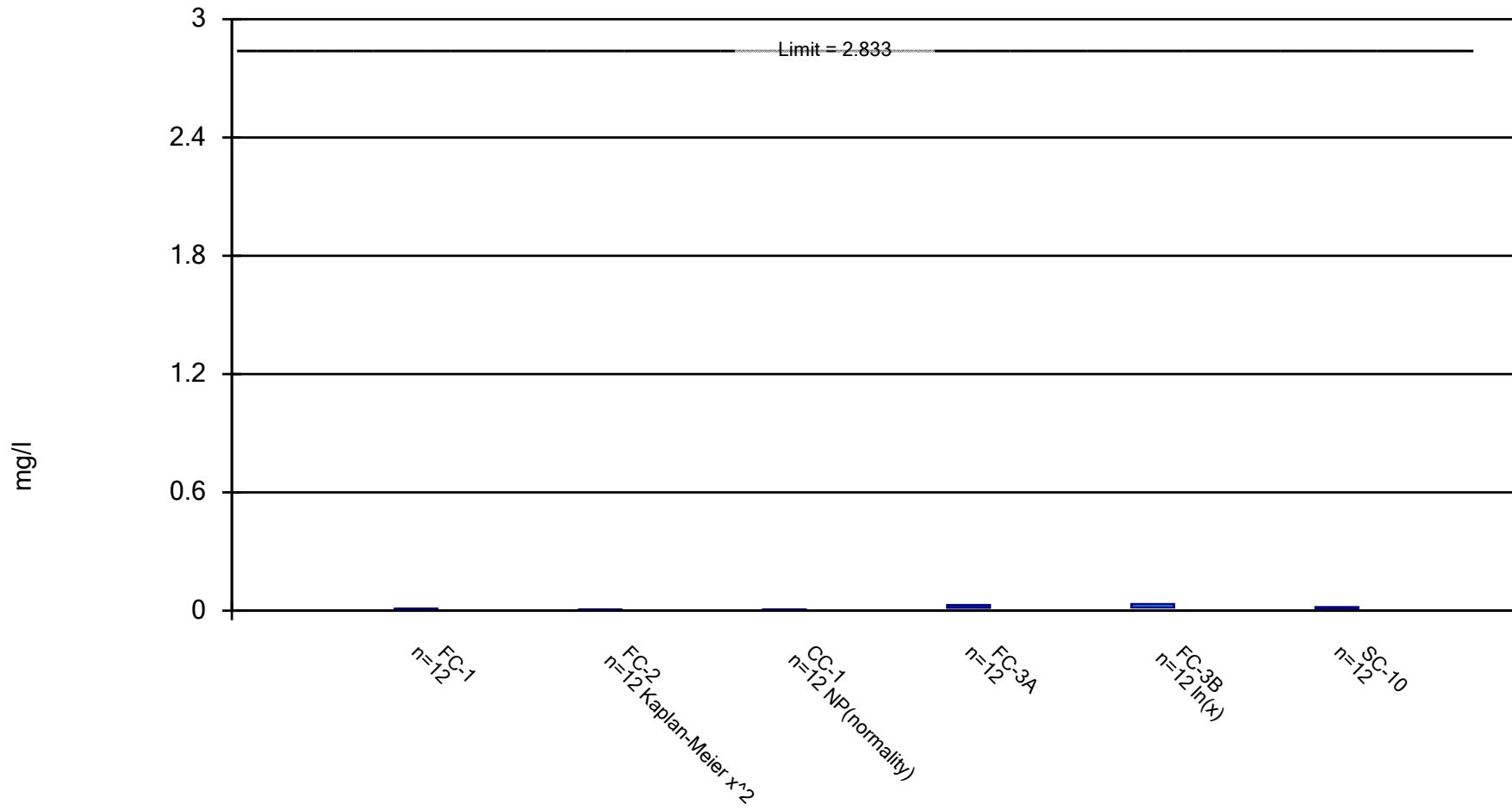
Constituent: Arsenic, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.0093	0.0017	0.0019	0.0022
8/3/2016	0.0095	0.0014	<0.001	<0.001
9/20/2016	0.00825 (D)	0.0026 (D)	0.0013 (D)	<0.001 (D1)
10/13/2016	0.0062 (D)	0.00285 (D)	0.0015 (D)	<0.001 (D1)
11/16/2016	<0.001 (D1)	0.0016 (D)	<0.001 (D)	<0.001 (D1)
1/19/2017	0.0033 (D)	<0.001 (D1)	<0.001 (D1)	<0.001 (D1)
2/15/2017	0.0046 (D)	<0.001 (D1)	<0.001 (D1)	<0.001 (D)
3/1/2017	0.0111 (D)	0.0067 (D)	0.0057 (D)	0.003 (D)
11/14/2017	0.0089 (D)	0.0027 (D)	0.0018 (D)	0.0011 (D)
2/15/2018	0.0021	0.0011	<0.001	<0.001
9/26/2018	0.0104	0.0013	<0.001 (D)	<0.001
5/15/2019	0.0051 (D)	0.00135 (D)	0.001 (D)	<0.001 (D)
Mean	0.006646	0.002108	0.0016	0.001275
Std. Dev.	0.003402	0.001591	0.001333	0.0006426
Upper Lim.	0.009315	0.002703	0.0019	0.0022
Lower Lim.	0.003977	0.001167	0.001	0.001

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium, Total Analysis Run 9/10/2019 11:05 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

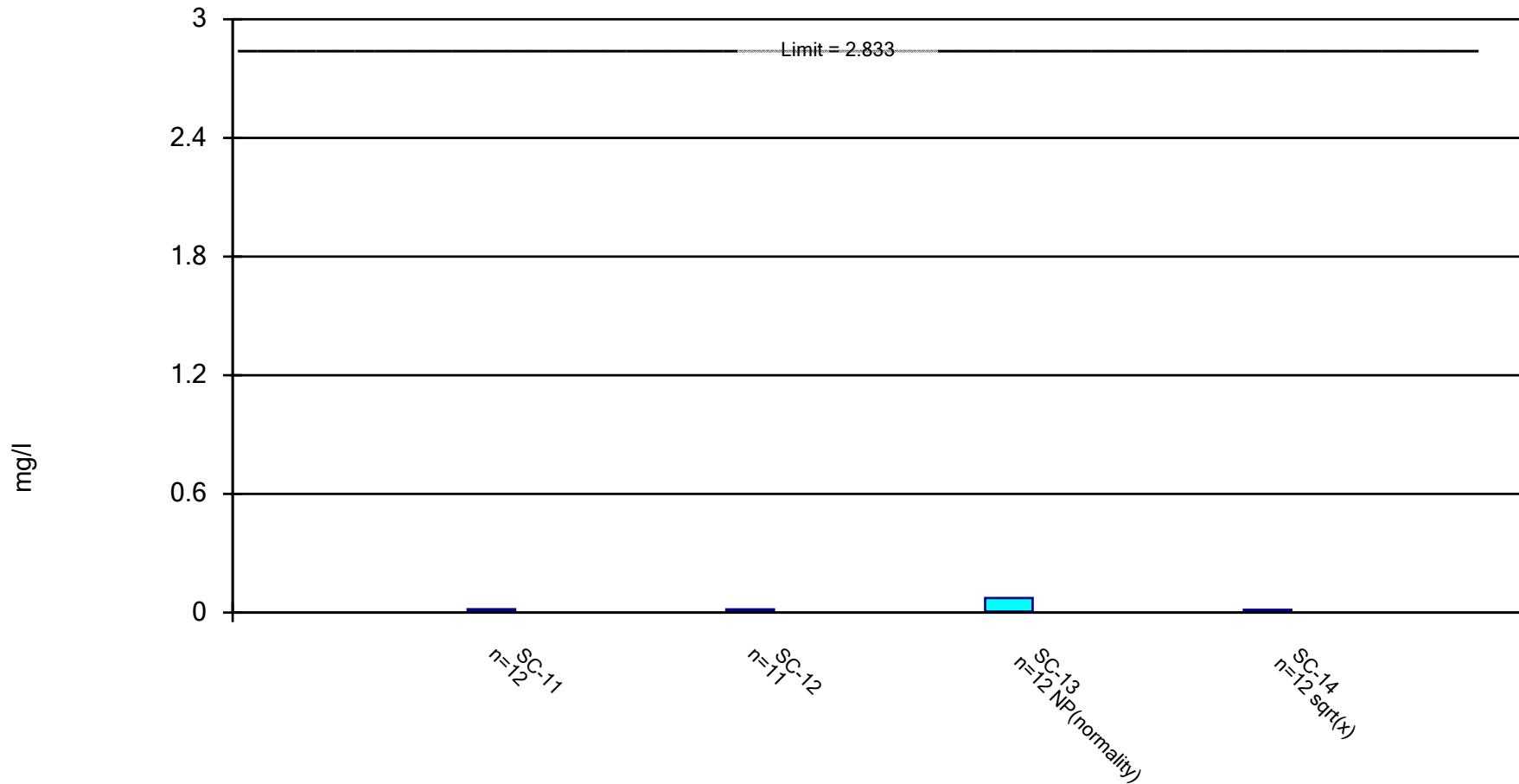
Constituent: Barium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.00954	0.00503	2.83285 (D)			0.0184
6/23/2016				0.034		
6/27/2016					0.0336	
8/2/2016	0.008725 (D)	<0.005	0.00512	0.0202	0.0253	
8/3/2016						0.0138 (D)
9/19/2016	0.00928	0.00525 (D)	0.00542	0.0218	0.0183	
9/20/2016						0.013
10/12/2016	0.00905	0.00536	0.00593	0.03735 (D)	0.0184	
10/13/2016						0.0141
11/15/2016	0.0102	0.00516	0.00608	0.01735 (D)	0.0652	
11/16/2016						0.0178
1/18/2017	0.00929	0.00539	0.005675 (D)	0.0164	0.0244	
1/19/2017						0.0216
2/14/2017	0.01	0.00566	0.006005 (D)	0.0167	0.023	
2/15/2017						0.0145 (D)
2/28/2017	0.009 (D)	0.0054	<0.005	0.0148	0.0208	
3/1/2017						0.0105
11/13/2017	0.0082 (D)	0.00435 (D)	0.004 (D)	0.0259 (D)	0.0154 (D)	
11/14/2017						0.014 (D)
2/14/2018	0.0105	<0.01	<0.01	0.01205 (D)	0.0196	
2/15/2018						0.0124
9/25/2018	0.00665 (D)	0.004	0.0039	0.021	0.037	
9/26/2018						0.0165
5/14/2019	0.0073	0.0043 (D)	0.0044 (D)	0.0265 (D)	0.0146 (D)	
5/15/2019						0.0168 (D)
Mean	0.008978	0.004783	0.2406	0.022	0.0263	0.01528
Std. Dev.	0.001139	0.0008824	0.8164	0.007695	0.01399	0.003045
Upper Lim.	0.009872	0.00536	0.00608	0.02804	0.03333	0.01767
Lower Lim.	0.008084	0.004506	0.0039	0.01597	0.0172	0.01289

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium, Total Analysis Run 9/10/2019 11:05 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

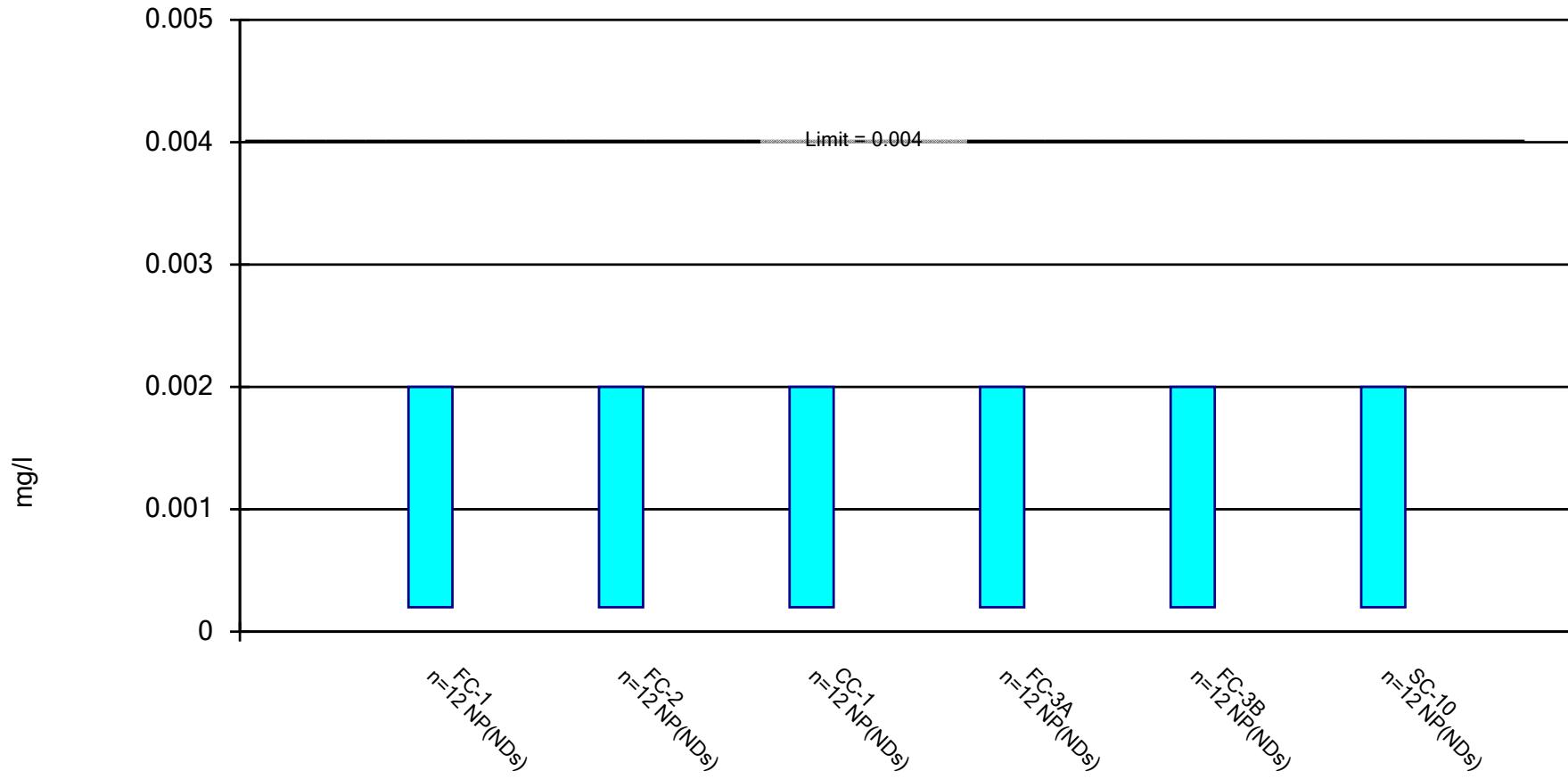
Constituent: Barium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.017	0.0112	0.00979	0.024
8/3/2016	0.0165	0.0133	0.00703	0.0131
9/20/2016	0.009275 (D)		0.0736	0.0109
10/13/2016	0.0225	0.01415 (D)	0.00797	0.0163
11/16/2016	0.016	0.0178	4.629645 (D)	0.0136
1/19/2017	0.0117	0.0108	0.0075	0.00905
2/15/2017	0.0156	0.0127	0.00742	0.00766
3/1/2017	0.00732	0.00781 (D)	0.00603	0.0063
11/14/2017	0.01395 (D)	0.0063 (D)	0.006 (D)	0.0052 (D)
2/15/2018	0.0089	0.0079	<0.01	<0.01
9/26/2018	0.0099	0.0245	0.00575 (D)	0.0057
5/15/2019	0.0086 (D)	0.00755 (D)	0.0046 (D)	0.005 (D)
Mean	0.0131	0.01218	0.3975	0.01015
Std. Dev.	0.004559	0.005339	1.333	0.005803
Upper Lim.	0.01668	0.01663	0.0736	0.01403
Lower Lim.	0.009526	0.007734	0.005	0.005836

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium, Total Analysis Run 9/10/2019 11:05 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

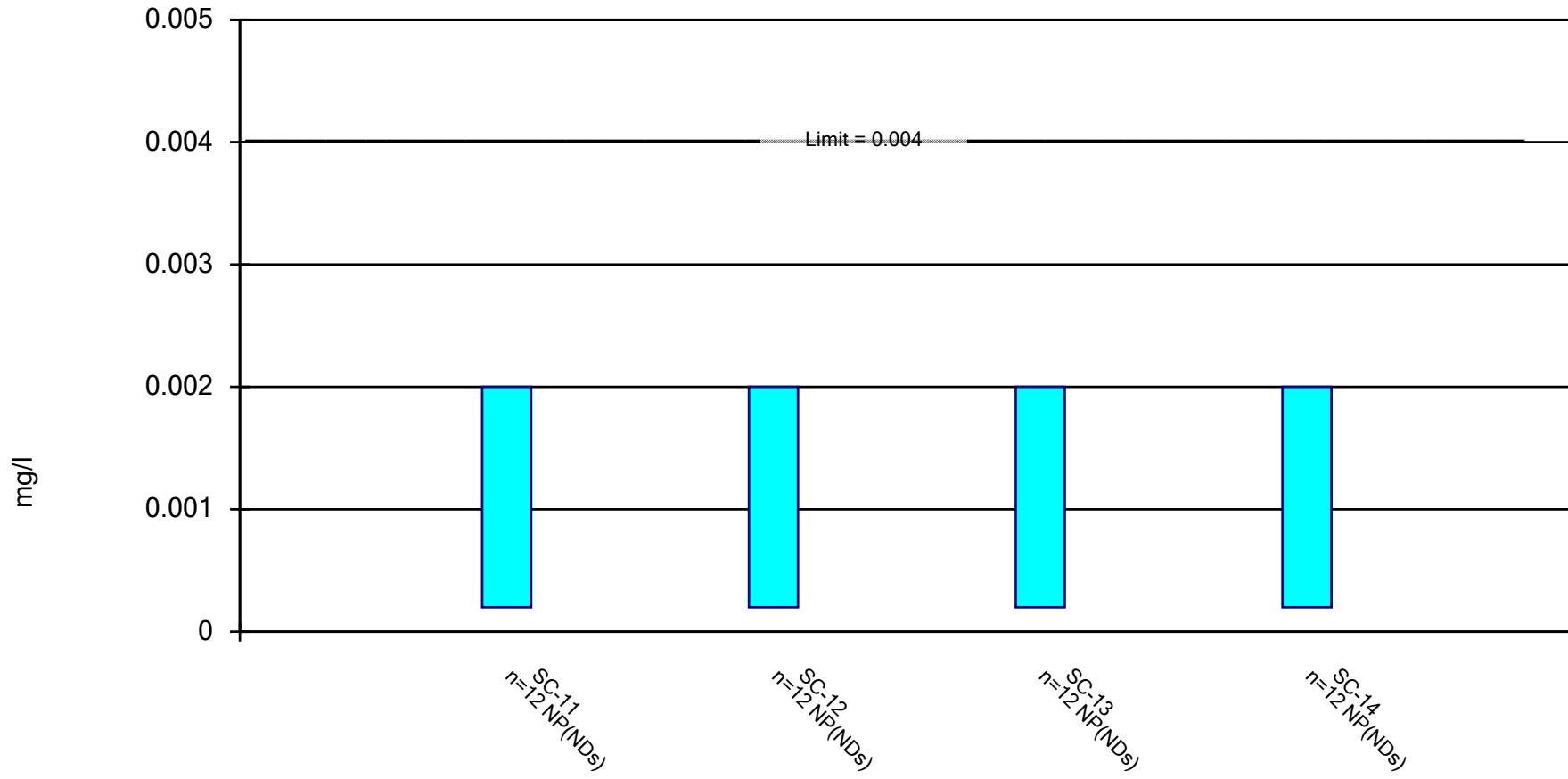
Confidence Interval

Constituent: Beryllium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium, Total Analysis Run 9/10/2019 11:05 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

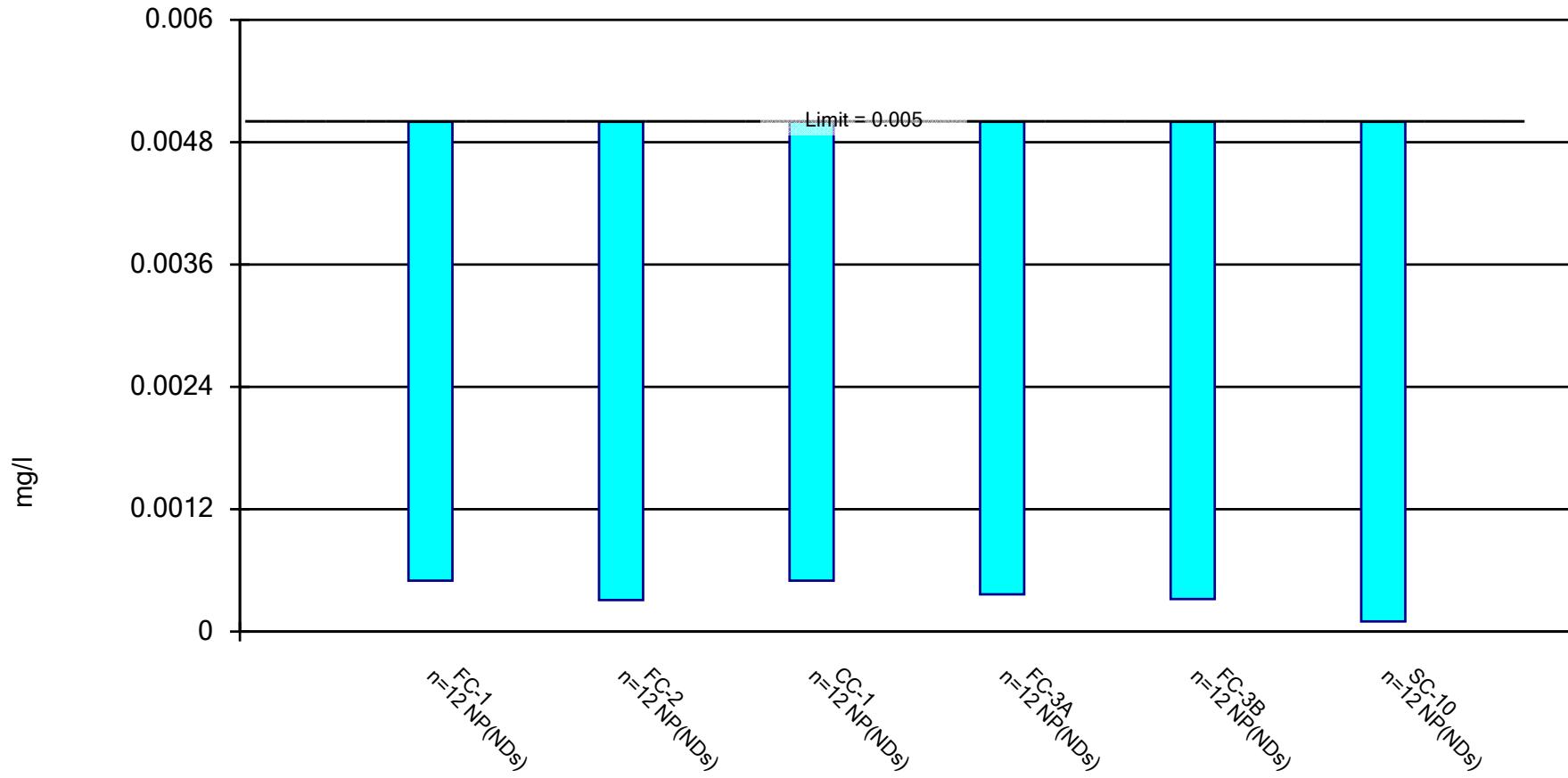
Confidence Interval

Constituent: Beryllium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.002	<0.002	<0.002	<0.002
8/3/2016	<0.002	<0.002	<0.002	<0.002
9/20/2016	<0.002 (D)	<0.002	<0.002	<0.002
10/13/2016	<0.002	<0.002 (D)	<0.002	<0.002
11/16/2016	<0.002	<0.002	<0.002 (D)	<0.002
1/19/2017	<0.002	<0.002	<0.002	<0.002
2/15/2017	<0.002	<0.002	<0.002	<0.002
3/1/2017	<0.002	<0.002 (D)	<0.002	<0.002
11/14/2017	<0.0002 (D1)	<0.0002 (D1)	0.00021 (D)	<0.0002 (D1)
2/15/2018	<0.002	<0.002	<0.001 (T)	<0.001 (T)
9/26/2018	<0.0002	<0.0002	<0.0002 (D)	<0.0002
5/15/2019	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)
Mean	0.00155	0.00155	0.001468	0.001467
Std. Dev.	0.0008141	0.0008141	0.0008136	0.000815
Upper Lim.	0.002	0.002	0.002	0.002
Lower Lim.	0.0002	0.0002	0.0002	0.0002

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cadmium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

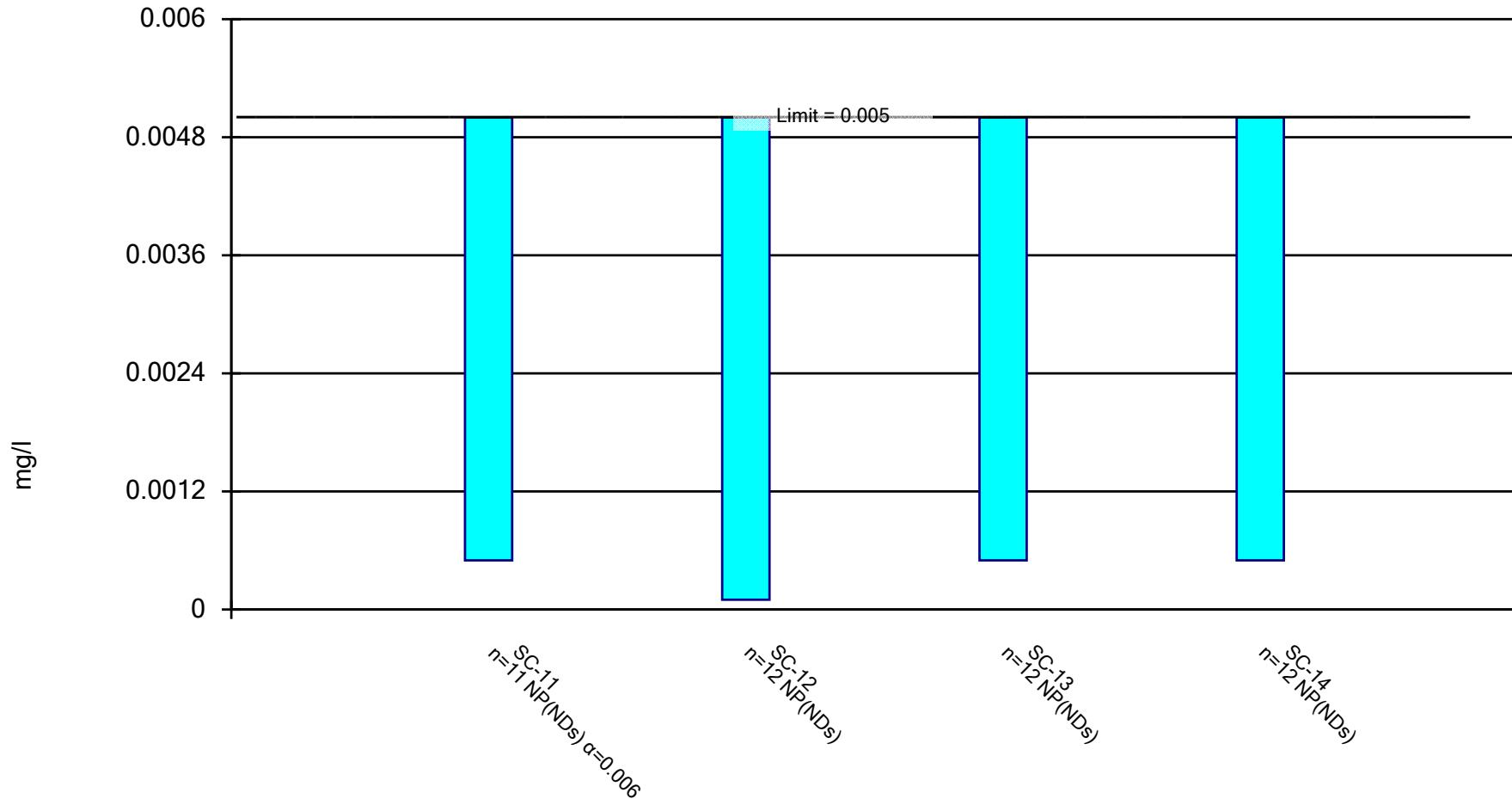
Constituent: Cadmium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.005	<0.005	<0.005 (D)			<0.005
6/23/2016				<0.005		
6/27/2016					<0.005	
8/2/2016	<0.005 (D)	<0.005	<0.005	<0.005	<0.005	
8/3/2016						<0.005 (D)
9/19/2016	<0.005	<0.005	<0.005	<0.005	<0.005	
9/20/2016						<0.005
10/12/2016	<0.005	<0.005	<0.005	<0.005 (D)	<0.005	
10/13/2016						<0.005
11/15/2016	<0.005	<0.005	<0.005	<0.005 (D)	<0.005	
11/16/2016						<0.005
1/18/2017	<0.005	<0.005	<0.005 (D)	<0.005	<0.005	
1/19/2017						<0.005
2/14/2017	<0.005	<0.005	<0.005 (D)	<0.005	<0.005	
2/15/2017						<0.005 (D)
2/28/2017	<0.005 (D)	<0.005	<0.005	<0.005	<0.005	
3/1/2017						<0.005
11/13/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	
11/14/2017						<0.0005 (D1)
2/14/2018	<0.001	0.00031	<0.001	0.000365 (D)	0.00032	
2/15/2018						<0.0001
9/25/2018	<0.0005 (D)	<0.0005	<0.0005	<0.0005	<0.0005	
9/26/2018						<0.0005
5/14/2019	<0.0005	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	
5/15/2019						<0.0005 (D1D)
Mean	0.003542	0.003484	0.003542	0.003489	0.003485	0.003467
Std. Dev.	0.002158	0.00224	0.002158	0.002233	0.002238	0.002267
Upper Lim.	0.005	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.0005	0.00031	0.0005	0.000365	0.00032	0.0001

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Cadmium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

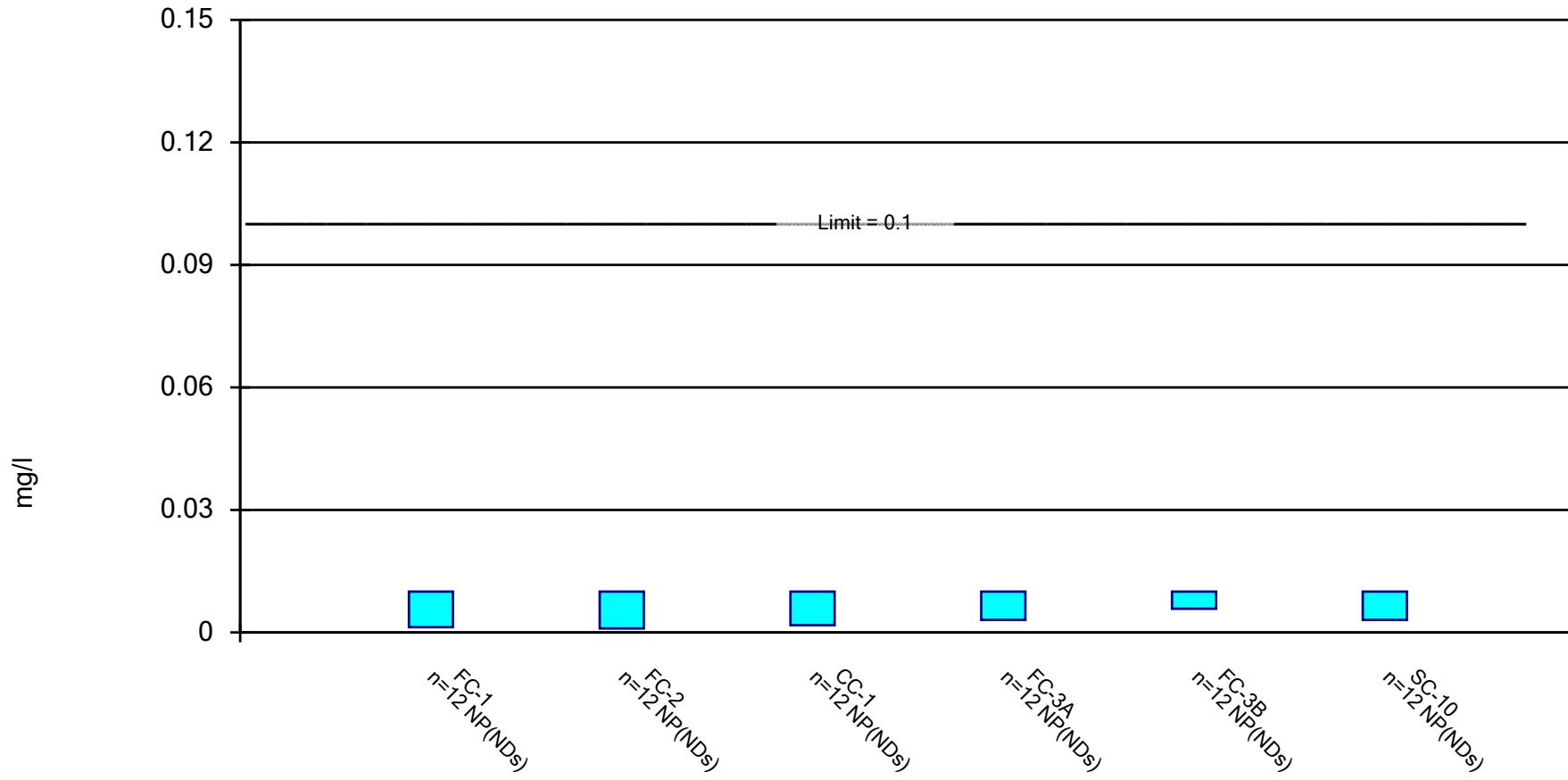
Constituent: Cadmium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.005	<0.005	<0.005	<0.005
8/3/2016		<0.005	<0.005	<0.005
9/20/2016	<0.005 (D)	<0.005	<0.005	<0.005
10/13/2016	<0.005	<0.005 (D)	<0.005	<0.005
11/16/2016	<0.005	<0.005	<0.005 (D)	<0.005
1/19/2017	<0.005	<0.005	<0.005	<0.005
2/15/2017	<0.005	<0.005	<0.005	<0.005
3/1/2017	<0.005	<0.005 (D)	<0.005	<0.005
11/14/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
2/15/2018	<0.0001	<0.0001	<0.001	<0.001
9/26/2018	<0.0005	<0.0005	<0.0005 (D)	<0.0005
5/15/2019	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
Mean	0.003327	0.003467	0.003542	0.003542
Std. Dev.	0.002323	0.002267	0.002158	0.002158
Upper Lim.	0.005	0.005	0.005	0.005
Lower Lim.	0.0005	0.0001	0.0005	0.0005

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

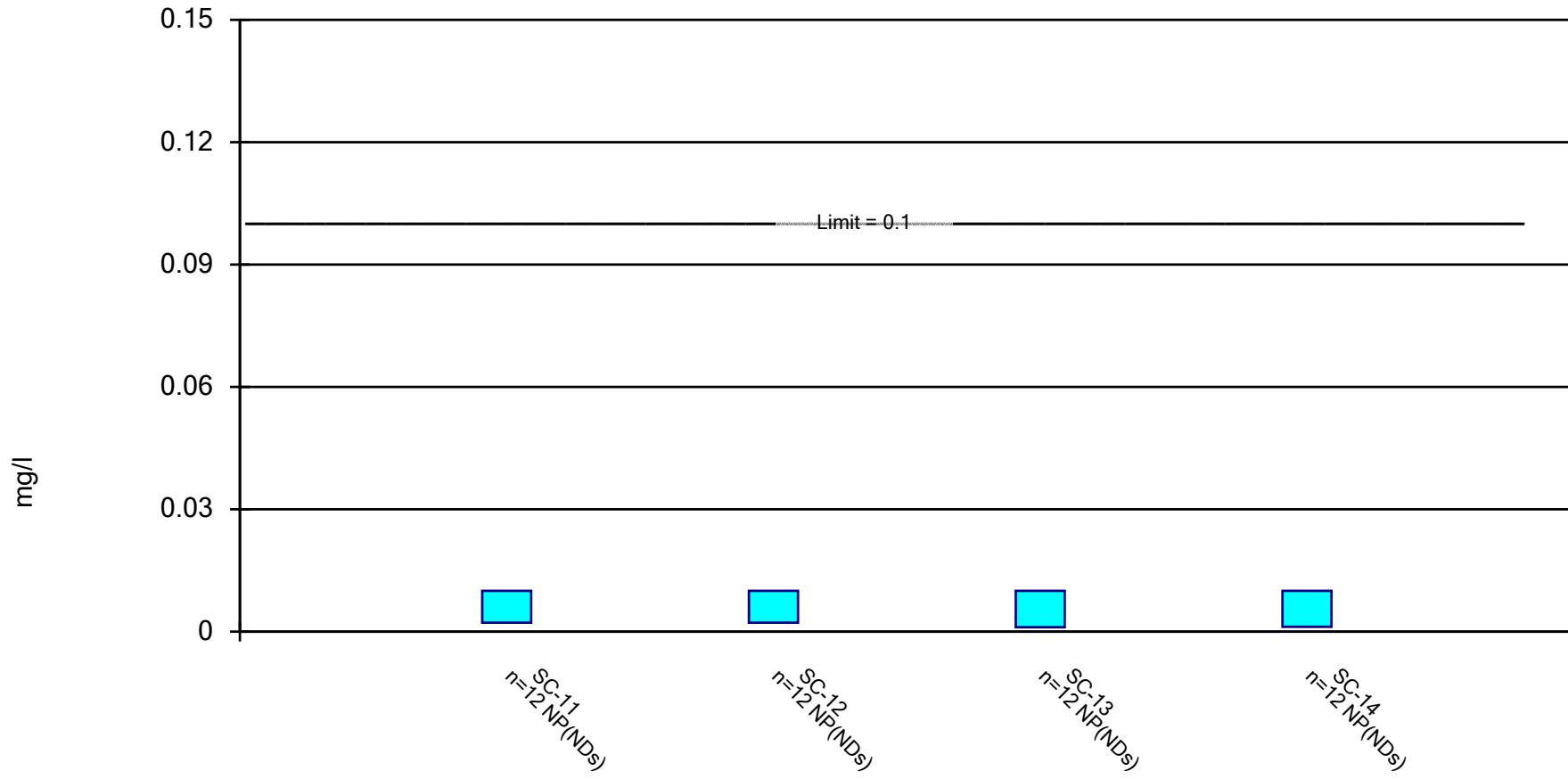
Confidence Interval

Constituent: Chromium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.01	<0.01	<0.01 (D)			<0.01
6/23/2016				<0.01		
6/27/2016					<0.01	
8/2/2016	<0.01 (D)	<0.01	<0.01	<0.01	<0.01	
8/3/2016						<0.01 (D)
9/19/2016	<0.01	<0.01 (D)	<0.01	<0.01	<0.01	
9/20/2016						<0.01
10/12/2016	<0.01	<0.01	<0.01	<0.01 (D)	<0.01	
10/13/2016						<0.01
11/15/2016	<0.01	<0.01	<0.01	<0.01 (D)	<0.01	
11/16/2016						<0.01
1/18/2017	<0.01	<0.01	<0.01 (D)	<0.01	<0.01	
1/19/2017						<0.01
2/14/2017	<0.01	<0.01	<0.01 (D)	<0.01	<0.01	
2/15/2017						<0.01 (D)
2/28/2017	<0.01 (D)	<0.01	<0.01	<0.01	<0.01	
3/1/2017						<0.01
11/13/2017	0.006 (D)	0.0051 (D)	0.0064 (D)	0.0062 (D)	0.0086 (D)	
11/14/2017						0.0061 (D)
2/14/2018	<0.004	<0.004	<0.004	<0.004 (D)	0.0058	
2/15/2018						<0.004
9/25/2018	0.001 (D)	0.001	0.0017	0.0025	0.0061	
9/26/2018						0.0019
5/14/2019	0.0013	<0.001 (D)	0.0018 (D)	0.0031 (D)	0.0049 (D)	
5/15/2019						0.0031 (D)
Mean	0.007692	0.007592	0.007825	0.007983	0.008783	0.007925
Std. Dev.	0.003628	0.003722	0.003416	0.003097	0.001978	0.003202
Upper Lim.	0.01	0.01	0.01	0.01	0.01	0.01
Lower Lim.	0.0013	0.001	0.0018	0.0031	0.0058	0.0031

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

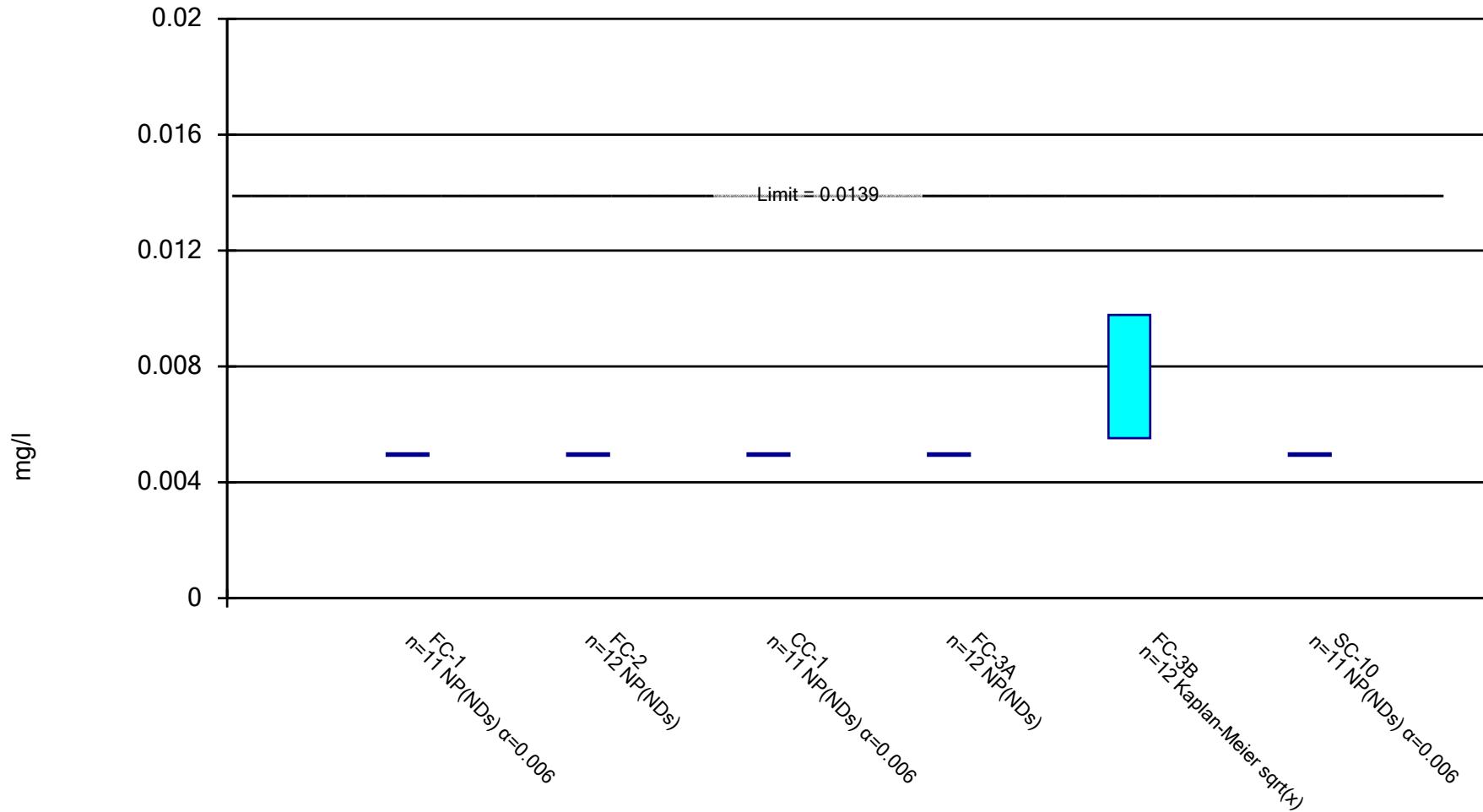
Constituent: Chromium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.01	<0.01	<0.01	<0.01
8/3/2016	<0.01	<0.01	<0.01	<0.01
9/20/2016	<0.01 (D)	<0.01	<0.01	<0.01
10/13/2016	<0.01	<0.01 (D)	<0.01	<0.01
11/16/2016	<0.01	<0.01	<0.01 (D)	<0.01
1/19/2017	<0.01	<0.01	<0.01	<0.01
2/15/2017	<0.01	<0.01	<0.01	<0.01
3/1/2017	<0.01	<0.01 (D)	<0.01	<0.01
11/14/2017	0.0075 (D)	0.0069 (D)	0.0029 (D)	0.0066 (D)
2/15/2018	<0.004	<0.004	<0.004	<0.004
9/26/2018	0.0012	0.0022	<0.001 (D)	<0.001
5/15/2019	0.0022 (D)	0.00185 (D)	0.0011 (D)	0.0012 (D)
Mean	0.007908	0.007912	0.007417	0.007733
Std. Dev.	0.003412	0.003311	0.003891	0.003622
Upper Lim.	0.01	0.01	0.01	0.01
Lower Lim.	0.0022	0.0022	0.0011	0.0012

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

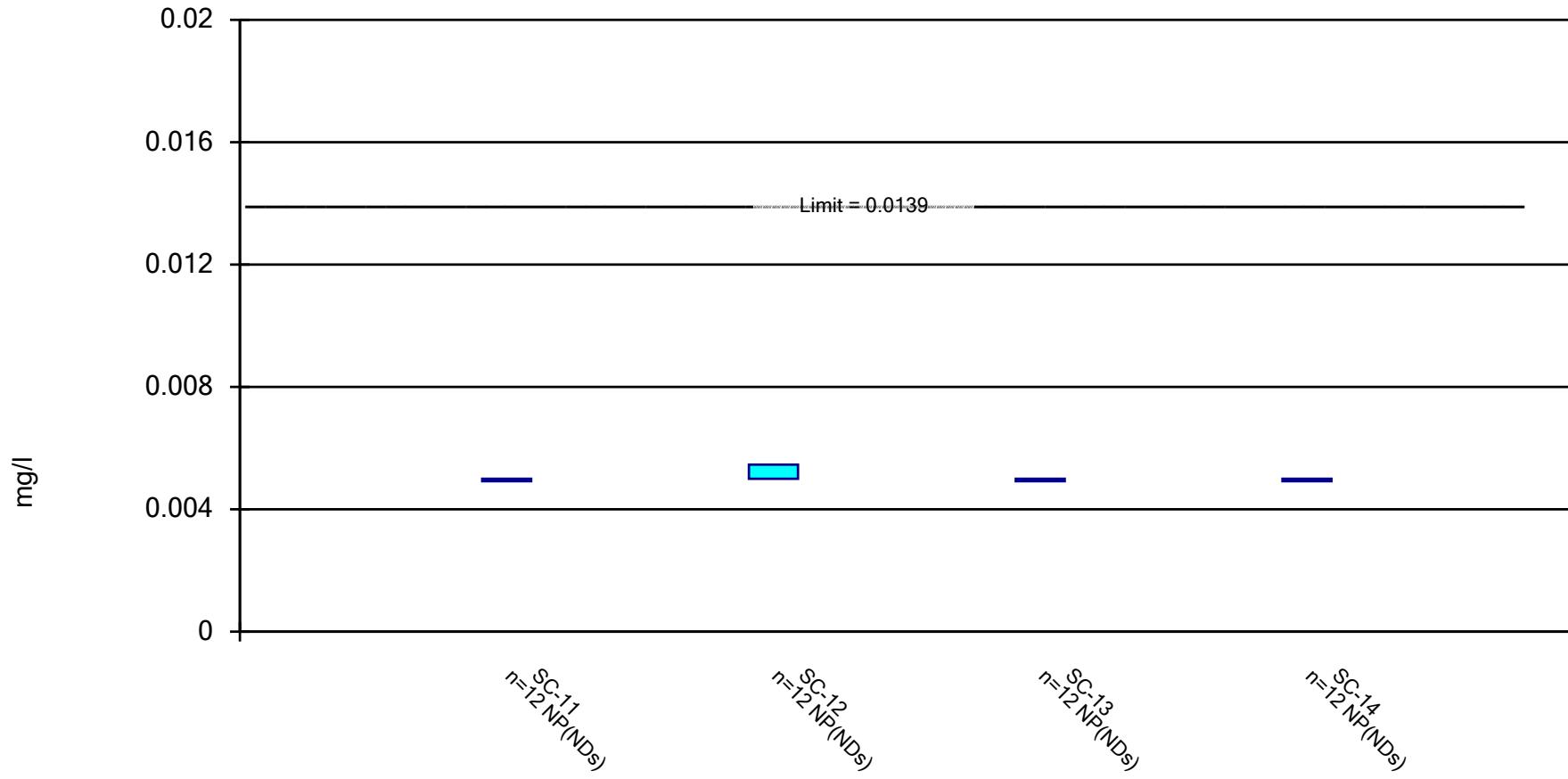
Confidence Interval

Constituent: Cobalt, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.005	<0.005	<0.005 (D)			<0.005
6/23/2016				<0.005		
6/27/2016					0.0078	
8/2/2016	<0.005 (D)	<0.005		<0.005	0.005	
8/3/2016						<0.005 (D)
9/19/2016	<0.005	<0.005 (D)	<0.005	<0.005	<0.005	
10/12/2016	<0.005	<0.005	<0.005	<0.005 (D)	<0.005	
10/13/2016						<0.005
11/15/2016	<0.005	<0.005	<0.005	<0.005 (D)	0.00736	
11/16/2016						<0.005
1/18/2017	<0.005	<0.005	<0.005 (D)	<0.005	0.00778	
1/19/2017						<0.005
2/14/2017	<0.005	<0.005	<0.005 (D)	<0.005	0.00796	
2/15/2017						<0.005 (D)
2/28/2017	<0.005 (D)	<0.005	<0.005	<0.005	0.00553	
3/1/2017						<0.005
11/13/2017	<0.005	<0.005 (D)	<0.005	<0.005	0.0118	
11/14/2017						<0.005
2/14/2018		<0.005	0.00636	<0.005 (D)	0.0139	
2/15/2018						0.0059
9/25/2018	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)	0.0108 (D)	
9/26/2018						<0.005 (DD1)
5/14/2019	<0.005	<0.005	<0.005	<0.005 (D)	<0.005	
5/15/2019						<0.005
Mean	0.005	0.005	0.005124	0.005	0.007744	0.005082
Std. Dev.	0	0	0.0004101	0	0.002999	0.0002714
Upper Lim.	0.005	0.005	0.005	0.005	0.009776	0.005
Lower Lim.	0.005	0.005	0.005	0.005	0.005524	0.005

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cobalt, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

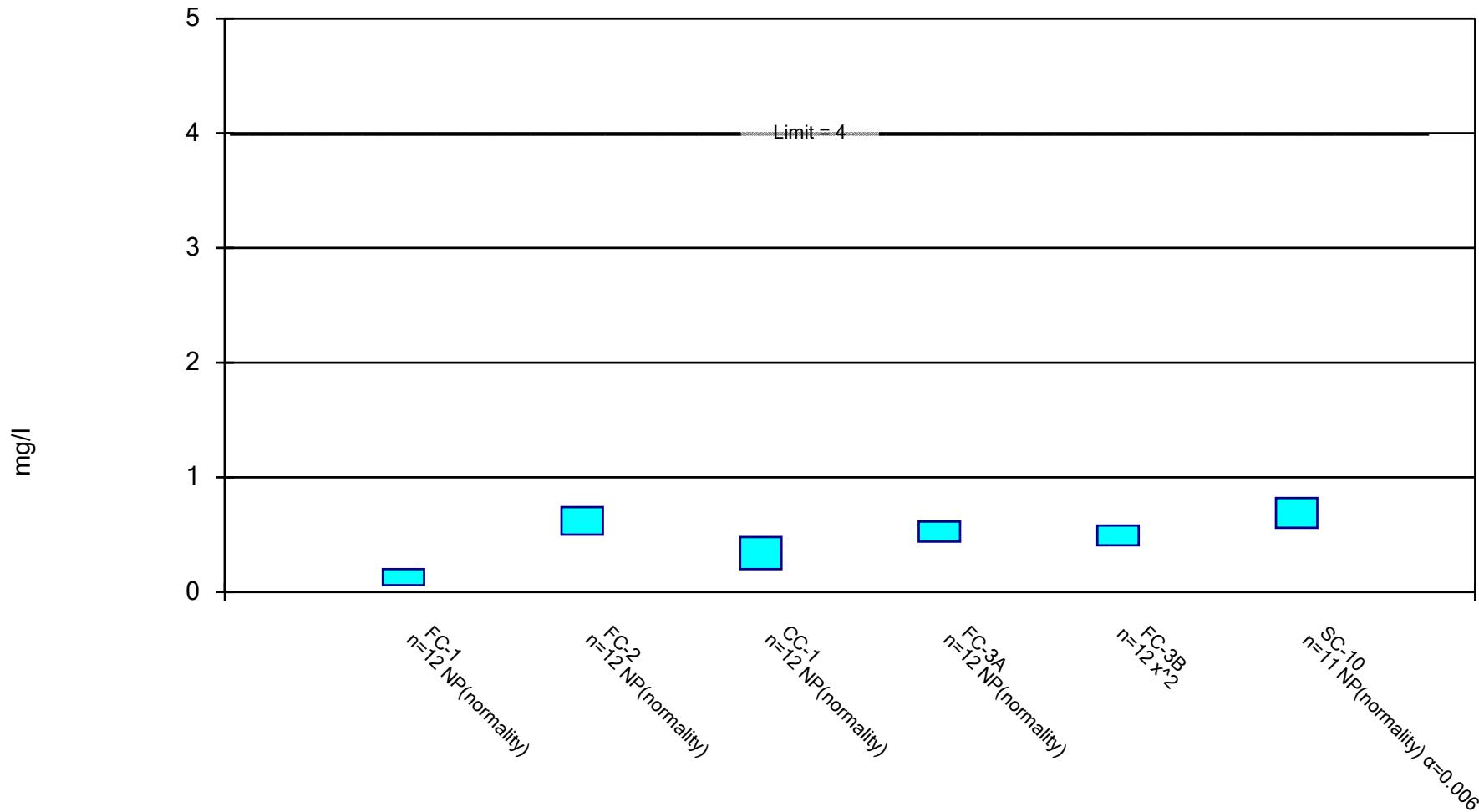
Constituent: Cobalt, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.005	<0.005	<0.005	<0.005
8/3/2016	0.005	<0.005	<0.005	<0.005
9/20/2016	<0.005 (D)	<0.005	<0.005	<0.005
10/13/2016	<0.005	<0.005 (D)	<0.005	<0.005
11/16/2016	<0.005	<0.005	<0.005 (D)	<0.005
1/19/2017	<0.005	<0.005	<0.005	<0.005
2/15/2017	<0.005	<0.005	<0.005	<0.005
3/1/2017	<0.005	<0.005 (D)	<0.005	<0.005
11/14/2017	<0.005 (D)	<0.005	<0.005	<0.005
2/15/2018	0.00525	0.00546	<0.005	<0.005
9/26/2018	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)
5/15/2019	<0.005	<0.005	<0.005	<0.005
Mean	0.005021	0.005038	0.005	0.005
Std. Dev.	7.217E-05	0.0001328	0	0
Upper Lim.	0.005	0.00546	0.005	0.005
Lower Lim.	0.005	0.005	0.005	0.005

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

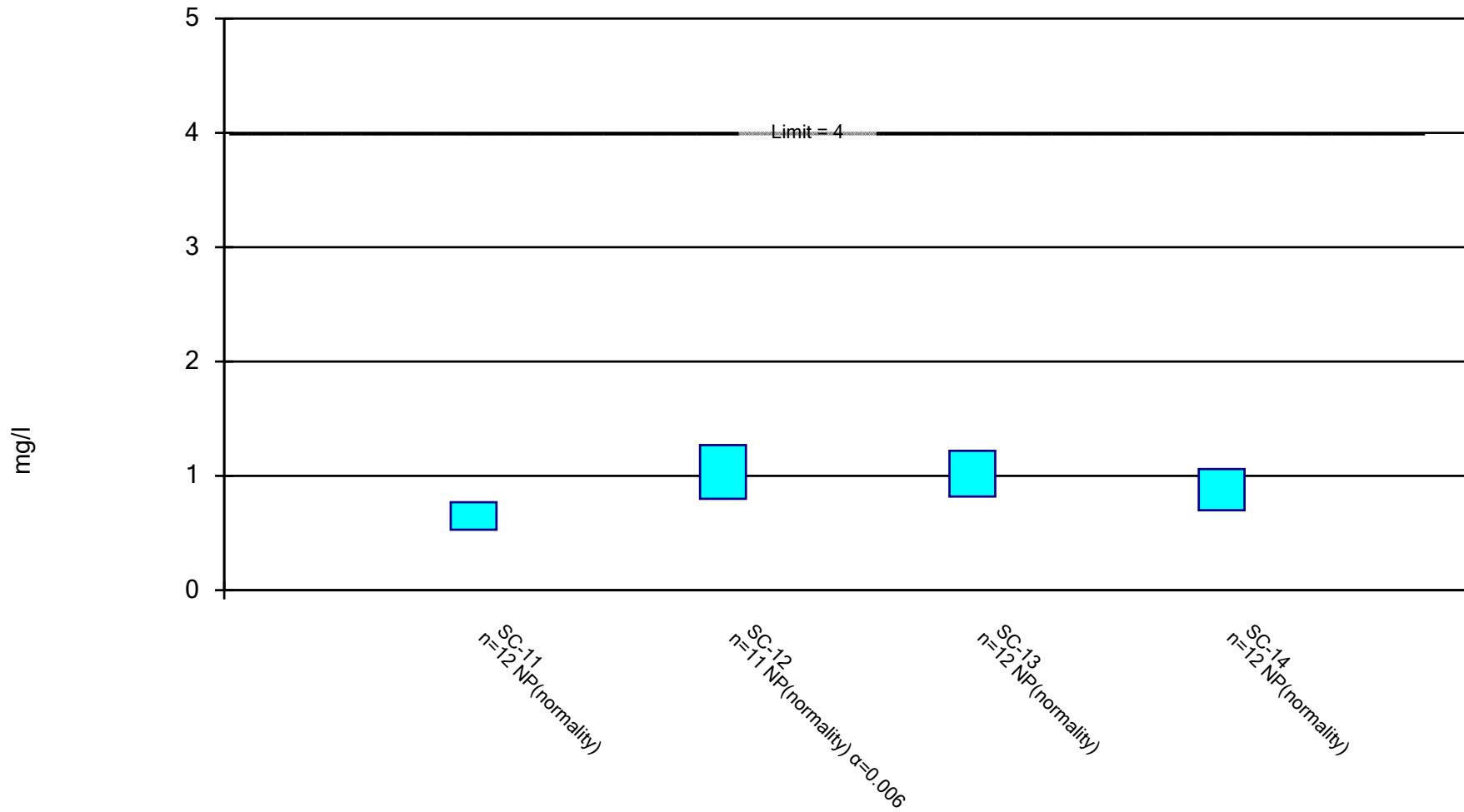
Constituent: Fluoride, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.12 (T)	0.51 (T)	0.215 (TD)			0.59 (T)
6/23/2016				0.46 (T)		
6/27/2016					0.55	
8/2/2016	0.06006 (TD)	0.5 (T)	0.21 (T)	0.46 (T)	0.00048 (T)	
8/3/2016						0.585 (TD)
9/19/2016	0.13	0.985 (D)	0.22	0.48	0.48	
9/20/2016						0.56
10/12/2016	0.12 (T)	0.52 (T)	0.21 (T)	0.465 (TD)	0.51 (T)	
10/13/2016						0.61 (T)
11/15/2016	0.12 (T)	0.51 (T)	0.2 (T)	0.46 (TD)	0.46 (T)	
11/16/2016						0.57 (T)
1/18/2017	0.13 (T)	0.52 (T)	0.2 (TD)	0.46 (T)	0.56 (T)	
1/19/2017						0.56 (T)
2/14/2017	0.13 (T)	0.55 (T)	0.22 (TD)	0.48 (T)	0.51 (T)	
2/15/2017						0.575 (TD)
2/28/2017	0.13 (TD)	0.53 (T)	0.22 (T)	0.47 (T)	0.42 (T)	
3/1/2017						0.57 (T)
11/13/2017	0.2	0.7 (D)	0.45	0.56	0.48	
11/14/2017						0.82
2/14/2018	0.21	0.74	0.5	0.615 (D)	0.53	
2/15/2018						0.84
9/25/2018	0.195 (D)	0.73	0.48	0.62	0.52	
5/14/2019	0.13	0.51	0.2	0.44 (D)	0.69	
5/15/2019						0.54
Mean	0.1396	0.6088	0.2771	0.4975	0.4759	0.62
Std. Dev.	0.04223	0.1502	0.1211	0.0633	0.1638	0.1055
Upper Lim.	0.2	0.74	0.48	0.615	0.5798	0.82
Lower Lim.	0.06006	0.5	0.2	0.44	0.4073	0.56

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Fluoride, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

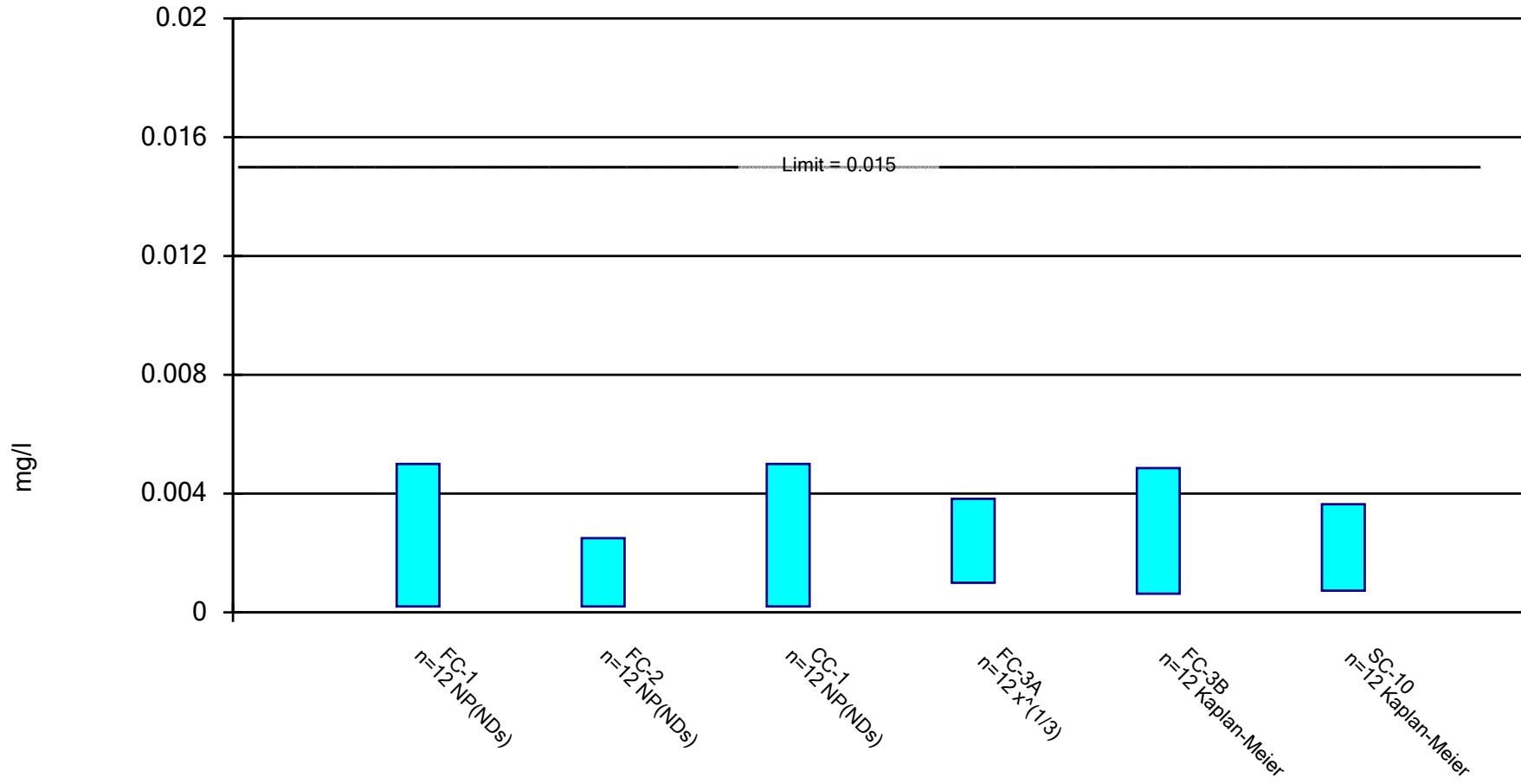
Constituent: Fluoride, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.56 (T)	0.79 (T)	0.83 (T)	0.73 (T)
8/3/2016	0.54 (T)	0.82 (T)	0.82 (T)	0.72 (T)
9/20/2016	0.53 (D)	0.82	1.22 (D)	0.7
10/13/2016	0.57 (T)	0.885 (TD)	0.9 (T)	0.77 (T)
11/16/2016	0.53 (T)	0.84 (T)	0.84 (D)	0.72 (T)
1/19/2017	0.53 (T)	0.84 (T)	0.86 (T)	0.74 (T)
2/15/2017	0.55 (T)		0.86 (T)	0.74 (T)
3/1/2017	0.54 (T)	0.84 (TD)	0.84 (T)	0.74 (T)
11/14/2017	0.765 (D)	1.27	1.21	1.06
2/15/2018	0.77	1.26	1.2	1.06
9/26/2018	0.8	1.31	1.275 (D)	1.11
5/15/2019	0.53	0.8 (D)	0.77	0.69
Mean	0.6013	0.9523	0.9688	0.815
Std. Dev.	0.1078	0.2122	0.1933	0.1596
Upper Lim.	0.77	1.27	1.22	1.06
Lower Lim.	0.53	0.8	0.82	0.7

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

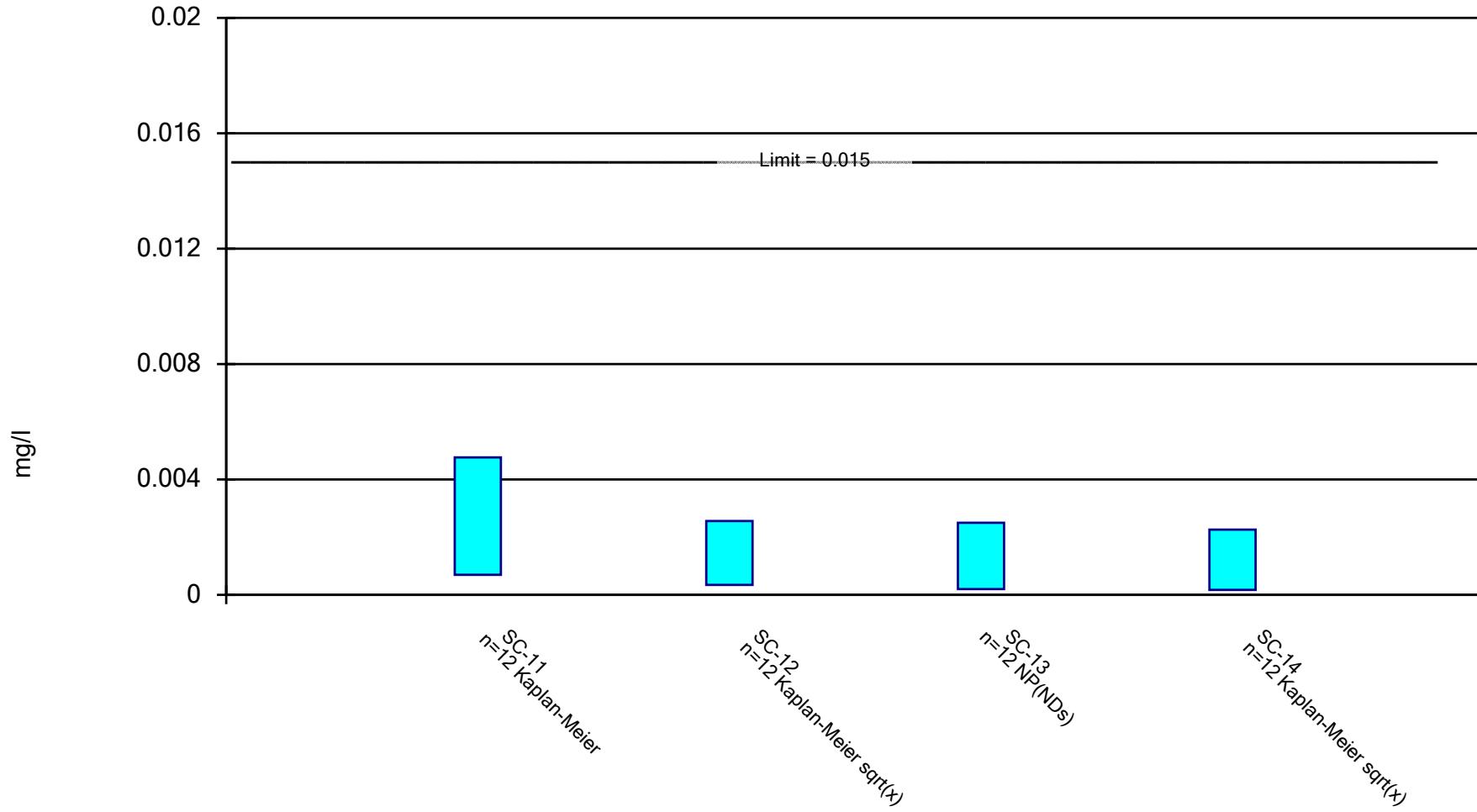
Confidence Interval

Constituent: Lead, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.0002	0.0002	<0.0002 (D)			0.0041
6/23/2016				0.0052		
6/27/2016					0.0039	
8/2/2016	<0.0002 (D)	<0.0002	<0.0002	0.0015	0.0021	
8/3/2016						0.0017 (D)
9/19/2016	0.00032 (D)	<0.0002 (D1)	<0.0002 (D1)	0.001 (D)	0.00042 (D)	
9/20/2016						0.00091 (D)
10/12/2016	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	0.000835 (D)	<0.0002 (D1)	
10/13/2016						0.00044 (D)
11/15/2016	0.0037 (D)	<0.0002 (D1)	0.0052 (D)	0.0031 (D)	0.0065 (D)	
11/16/2016						0.0063 (D)
1/18/2017	<0.0005 (D1)	<0.0005 (D1)	0.0035 (D)	0.0035 (D)	0.0035 (D)	
1/19/2017						0.0041 (D)
2/14/2017	0.0027 (D)	0.0018 (D)	0.0028 (D)	0.0017 (D)	0.00099 (D)	
2/15/2017						0.00275 (D)
2/28/2017	0.0081 (D)	0.0089 (D)	0.0049 (D)	0.009	0.0089 (D)	
3/1/2017						0.0046 (D)
11/13/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	0.00091 (D)	<0.0005 (D1)	
11/14/2017						0.0011 (D)
2/14/2018	<0.005	<0.0025	<0.005	<0.0025 (D)	<0.0025	
2/15/2018						<0.005
9/25/2018	<0.0005 (D)	<0.0005	<0.0005	0.00086	0.0046	
9/26/2018						<0.0005 (D1)
5/14/2019	<0.0005	<0.0005 (D1D)	<0.0005 (D1D)	0.0011 (D1D)	0.00073 (D1D)	
5/15/2019						0.00092 (D1D)
Mean	0.001868	0.00135	0.001975	0.0026	0.002903	0.002702
Std. Dev.	0.002539	0.002487	0.002137	0.002424	0.002723	0.002037
Upper Lim.	0.005	0.0025	0.005	0.003825	0.004857	0.003643
Lower Lim.	0.0002	0.0002	0.0002	0.0009976	0.0006332	0.0007327

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

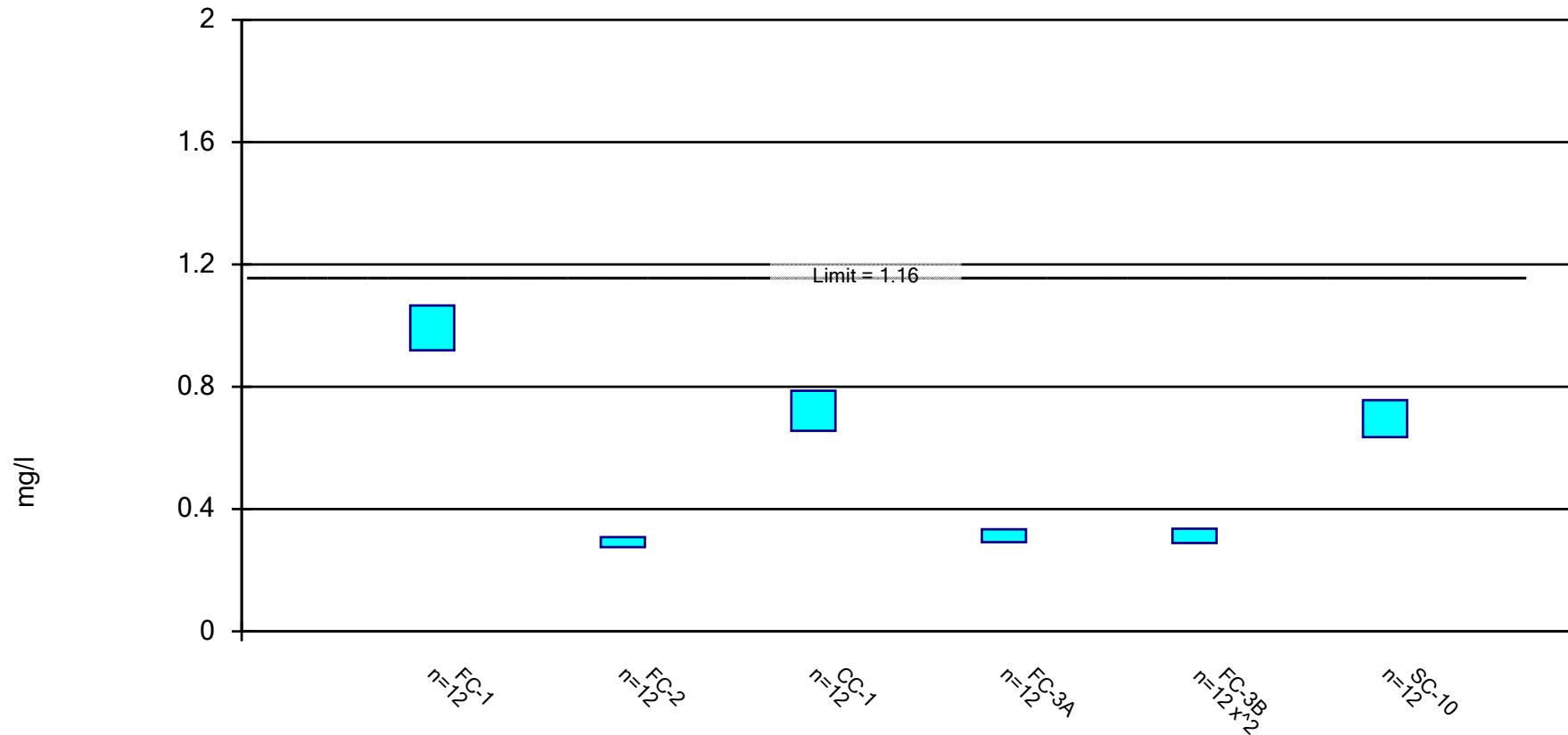
Confidence Interval

Constituent: Lead, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.0076	0.00043	0.00052	0.0046
8/3/2016	0.0043	0.0016	<0.0002	0.0007
9/20/2016	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)
10/13/2016	0.0006 (D)	<0.0002 (D)	<0.0002 (D1)	<0.0002 (D1)
11/16/2016	0.0063 (D)	0.0038 (D)	0.00145 (D)	0.0016 (D)
1/19/2017	0.0025 (D)	0.0017 (D)	0.0015 (D)	0.0016 (D)
2/15/2017	0.0028 (D)	0.0021 (D)	0.0015 (D)	0.0015 (D)
3/1/2017	0.0059 (D)	0.0064 (D)	0.0068 (D)	0.0064 (D)
11/14/2017	0.00073 (D)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
2/15/2018	<0.005	<0.005	<0.0025	<0.0025
9/26/2018	<0.0005 (D1)	0.0012	<0.0005 (D)	<0.0005
5/15/2019	<0.0005 (D1D)	<0.0005 (D)	<0.0005 (D1D)	<0.0005 (D1D)
Mean	0.003077	0.001969	0.001364	0.001733
Std. Dev.	0.002656	0.002043	0.001856	0.001931
Upper Lim.	0.004764	0.00256	0.0025	0.002264
Lower Lim.	0.000698	0.0003481	0.0002	0.000175

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

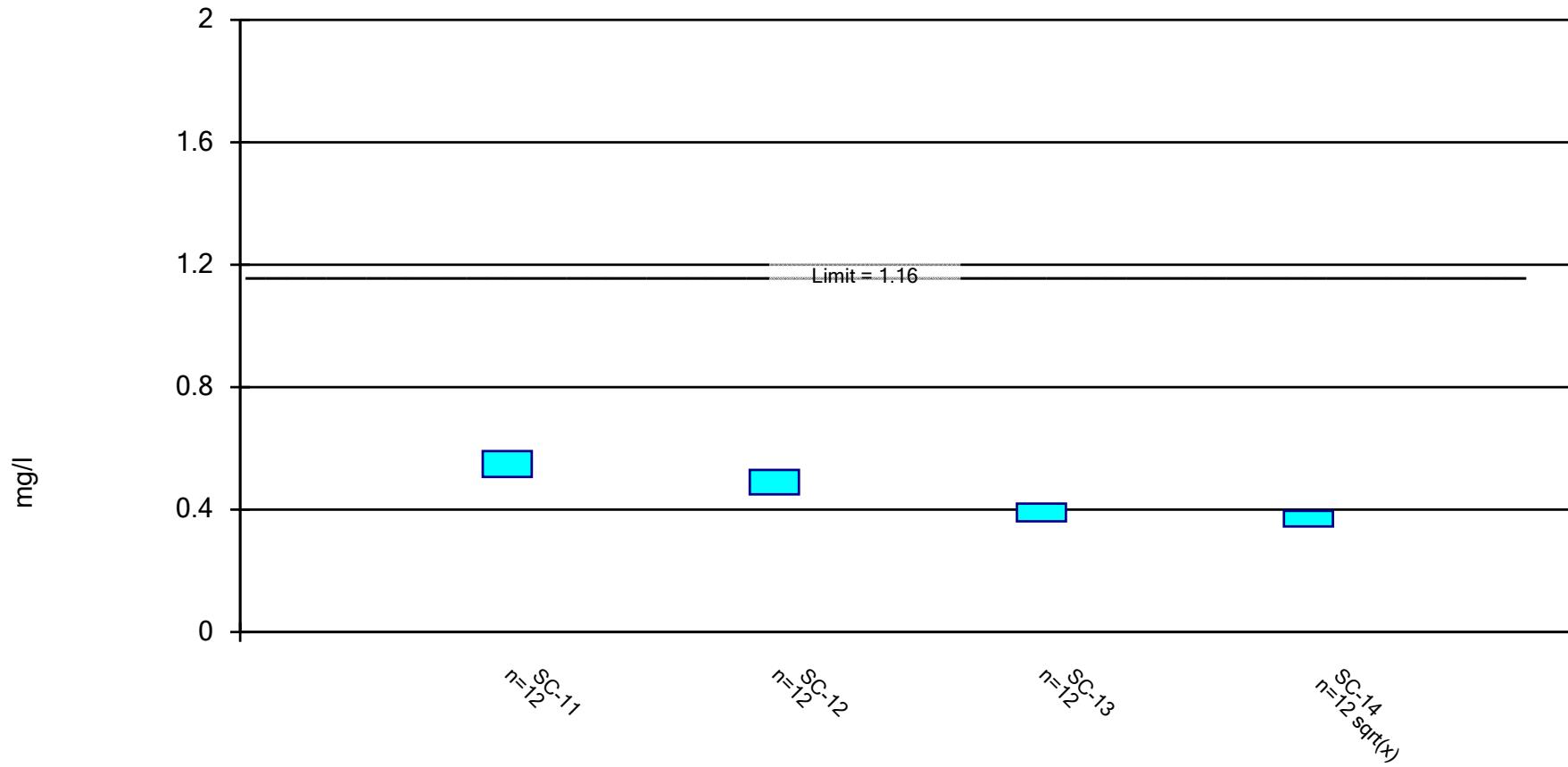
Constituent: Lithium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.904	0.269	0.671 (D)			0.601
6/23/2016				0.303		
6/27/2016					0.232	
8/2/2016	0.984 (D)	0.305	0.731	0.311	0.274	
8/3/2016						0.661 (D)
9/19/2016	1.01	0.306 (D)	0.779	0.343	0.295	
9/20/2016						0.728
10/12/2016	1.03	0.307	0.825	0.3455 (D)	0.315	
10/13/2016						0.761
11/15/2016	1.16	0.325 (T)	0.822	0.3375 (D)	0.344	
11/16/2016						0.786
1/18/2017	1.08	0.318	0.791 (D)	0.343 (D)	0.335	
1/19/2017						0.858 (D)
2/14/2017	1	0.298	0.73 (D)	0.312	0.334	
2/15/2017						0.671 (D)
2/28/2017	0.9125 (D)	0.275 (D)	0.641	0.283 (D)	0.326 (D)	
3/1/2017						0.637 (D)
11/13/2017	0.894	0.2665 (D)	0.63	0.288	0.31	
11/14/2017						0.632
2/14/2018	0.9 (D)	0.265 (D)	0.576 (D)	0.2635 (D)	0.341 (D)	
2/15/2018						0.66 (D)
9/25/2018	0.9085 (D)	0.276 (D)	0.664 (D)	0.302 (D)	0.316 (D)	
9/26/2018						0.626 (D)
5/14/2019	1.13	0.294	0.798	0.3265 (D)	0.321	
5/15/2019						0.729
Mean	0.9928	0.292	0.7215	0.3132	0.3119	0.6958
Std. Dev.	0.09342	0.02099	0.08358	0.0267	0.03208	0.07707
Upper Lim.	1.066	0.3085	0.7871	0.3341	0.336	0.7563
Lower Lim.	0.9194	0.2756	0.6559	0.2922	0.2891	0.6354

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

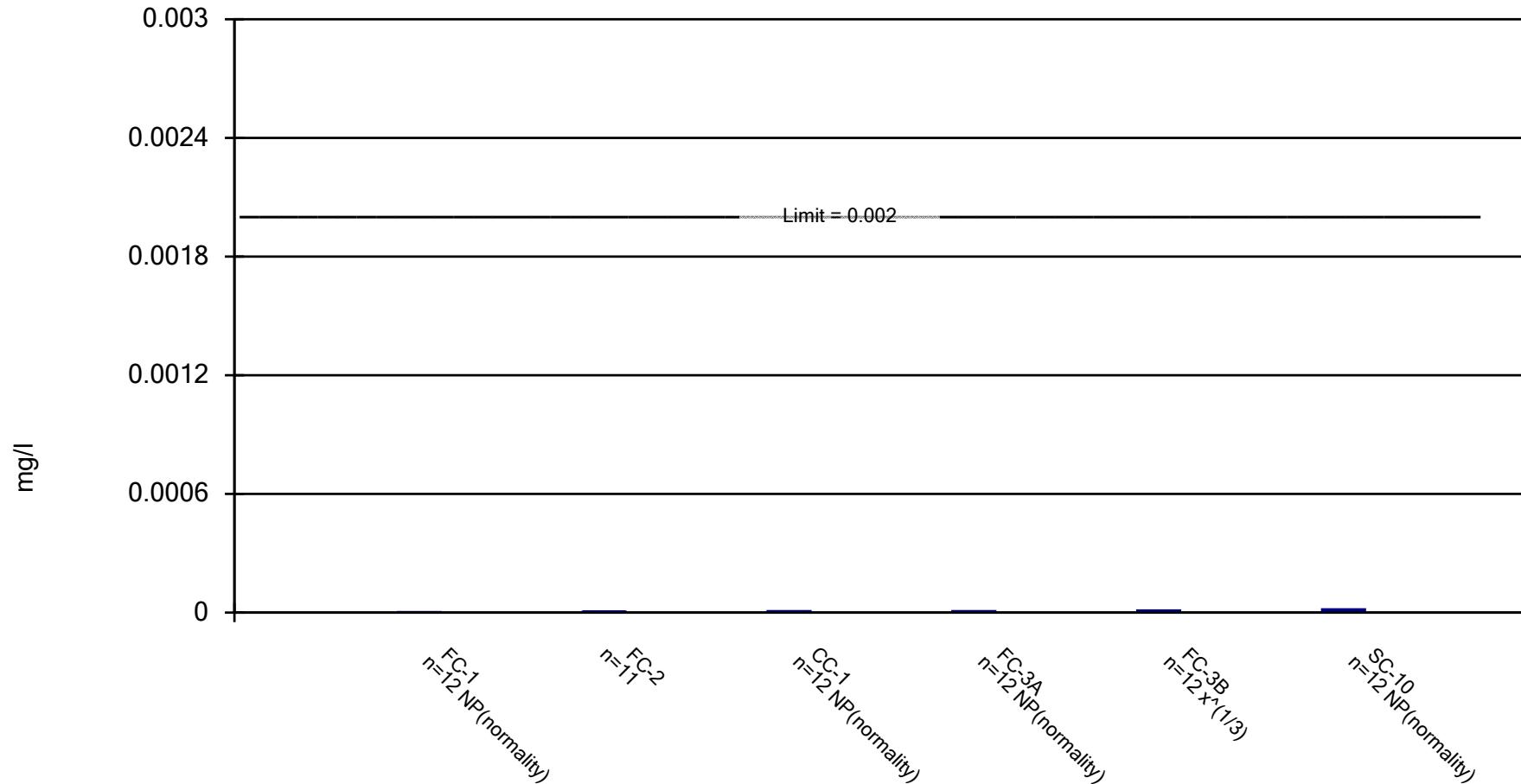
Constituent: Lithium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.475	0.422	0.394	0.363
8/3/2016	0.497	0.47	0.384	0.353
9/20/2016	0.593 (D)	0.53	0.429	0.406
10/13/2016	0.611	0.546 (D)	0.437	0.415
11/16/2016	0.622	0.572	0.4445 (D)	0.422
1/19/2017	0.619 (D)	0.558 (D)	0.433 (D)	0.407 (D)
2/15/2017	0.542	0.472	0.379	0.365
3/1/2017	0.5 (D)	0.449 (D)	0.343 (D)	0.338 (D)
11/14/2017	0.519 (D)	0.443	0.345	0.336
2/15/2018	0.494 (D)	0.442 (D)	0.374 (D)	0.345 (D)
9/26/2018	0.534 (D)	0.471 (D)	0.3495 (D)	0.336 (D)
5/15/2019	0.583	0.505 (D)	0.378	0.363
Mean	0.5491	0.49	0.3908	0.3708
Std. Dev.	0.05389	0.05064	0.03691	0.0327
Upper Lim.	0.5914	0.5297	0.4198	0.396
Lower Lim.	0.5068	0.4503	0.3619	0.3451

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

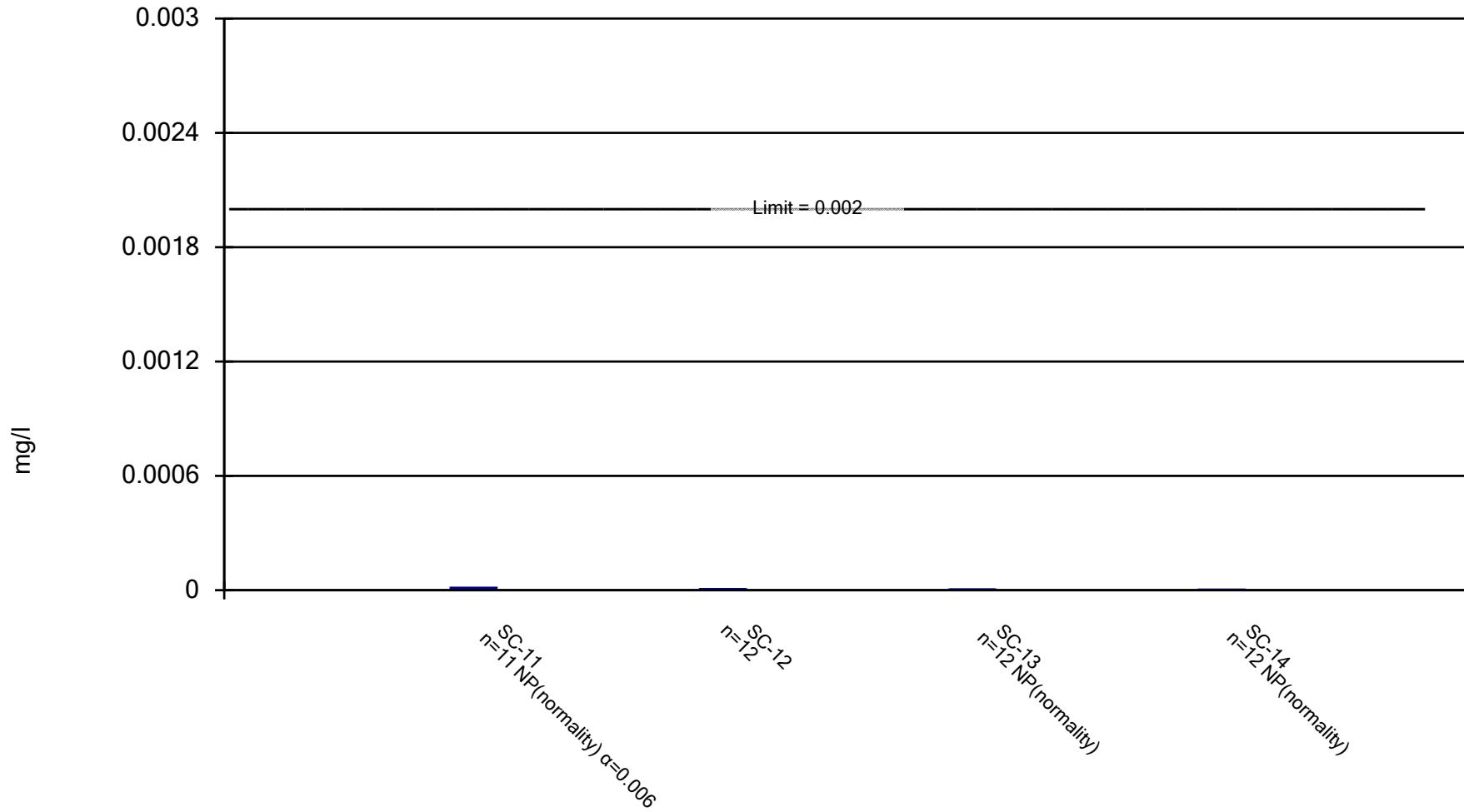
Constituent: Mercury, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	1.3E-06	2.8E-06	4.7E-06 (D)			3.6E-05
6/23/2016				5.4E-06		
6/27/2016					1.3E-05	
8/2/2016	2E-06 (D)	4E-06	6E-06	7E-06	6E-06	
8/3/2016						1.05E-05 (D)
9/19/2016	2E-06	3E-06 (D)	6E-06	4E-06	3E-06	
9/20/2016						1.6E-05
10/12/2016	2E-06		6E-06	5E-06 (D)	3E-06	
10/13/2016						1E-05
11/15/2016	2E-06	4E-06	6E-06	2E-06 (D)	9E-06	
11/16/2016						1E-05
1/18/2017	2E-06	5E-06	7.5E-06 (D)	2E-06	8E-06	
1/19/2017						1.1E-05
2/14/2017	2E-06	4E-06	6E-06 (D)	2E-06	4E-06	
2/15/2017						9E-06 (D)
2/28/2017	2E-06 (D)	4E-06	6E-06	2E-06	5E-06	
3/1/2017						9E-06
11/13/2017	2E-06 (T)	3.5E-06 (TD)	6E-06 (T)	4E-06 (T)	7E-06 (T)	
11/14/2017						1E-05
2/14/2018	2E-06	3E-06	5E-06	2E-06 (D)	5E-06	
2/15/2018						1.1E-05
9/25/2018	2.5E-06 (D)	3E-06	5E-06	3E-06	2.4E-05	
9/26/2018						9E-06
5/14/2019	2E-06	3E-06	6E-06	7.5E-06 (D)	3E-06	
5/15/2019						1E-05
Mean	1.983E-06	3.573E-06	5.85E-06	3.825E-06	7.5E-06	1.263E-05
Std. Dev.	2.6E-07	6.8E-07	7.2E-07	2.019E-06	5.977E-06	7.595E-06
Upper Lim.	2.5E-06	4.143E-06	7.5E-06	7E-06	1.065E-05	1.6E-05
Lower Lim.	1.3E-06	3.003E-06	5E-06	2E-06	3.581E-06	9E-06

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

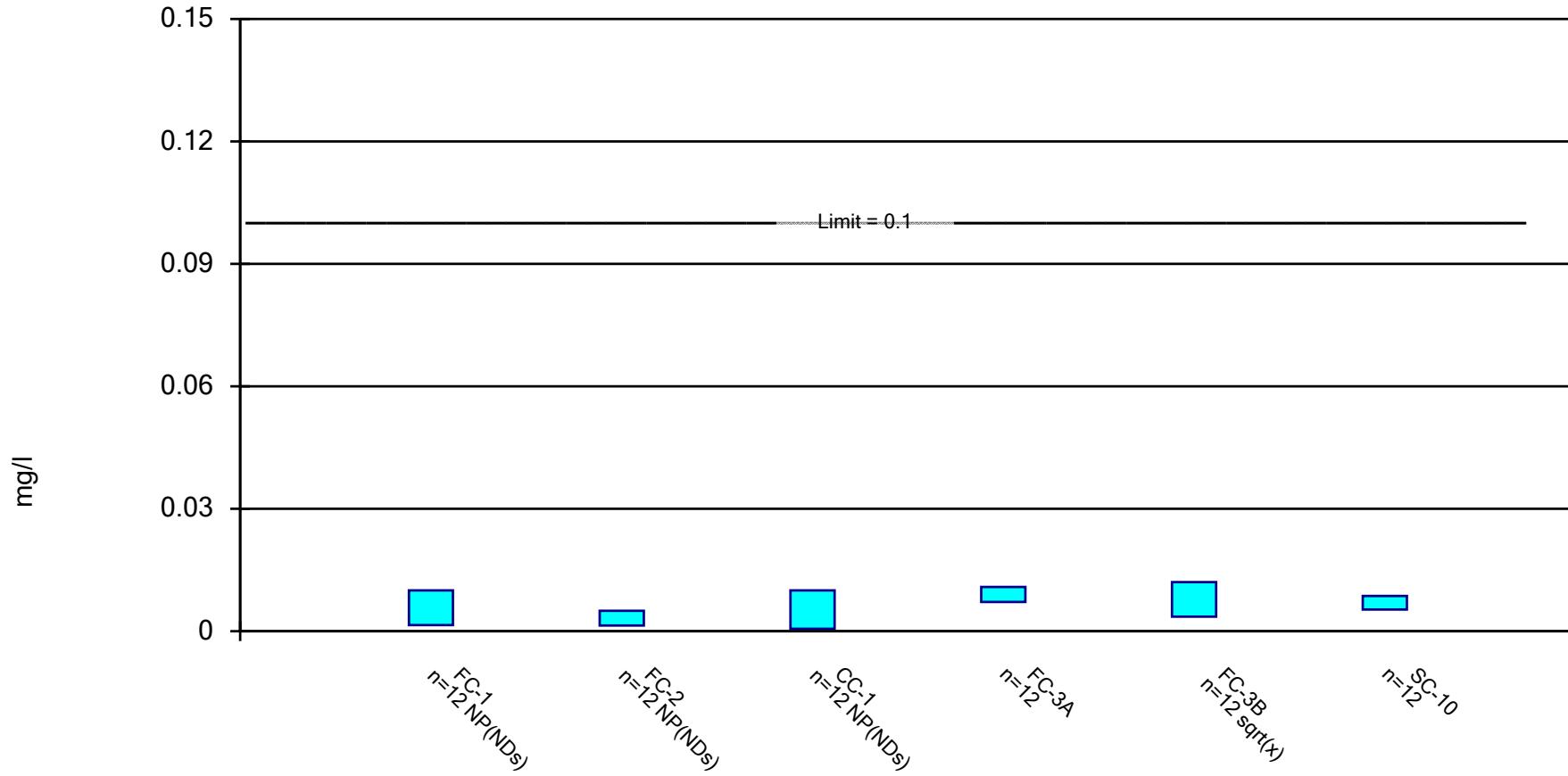
Constituent: Mercury, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	6.7E-05	4.5E-06	3.6E-06	1.2E-05
8/3/2016		6E-06	2E-06	3E-06
9/20/2016	9.5E-06 (D)	5E-06	3E-06	3E-06
10/13/2016	1E-05	3E-06 (D)	2E-06	2E-06
11/16/2016	1E-05	4E-06	2E-06 (D)	2E-06
1/19/2017	1E-05	4E-06	3E-06	2E-06
2/15/2017	8E-06	3E-06	2E-06	2E-06
3/1/2017	9E-06	3E-06 (D)	3E-06	<2E-06
11/14/2017	7.5E-06 (D)	4E-06	2E-06	2E-06
2/15/2018	1.3E-05	4E-06	2E-06	2E-06
9/26/2018	8E-06	5E-06	2E-06 (D)	2E-06
5/15/2019	9E-06	4E-06 (D)	2E-06	2E-06
Mean	1.464E-05	4.125E-06	2.383E-06	2.917E-06
Std. Dev.	1.743E-05	9.1E-07	5.9E-07	2.906E-06
Upper Lim.	1.3E-05	4.837E-06	3.6E-06	3E-06
Lower Lim.	8E-06	3.413E-06	2E-06	1E-06

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

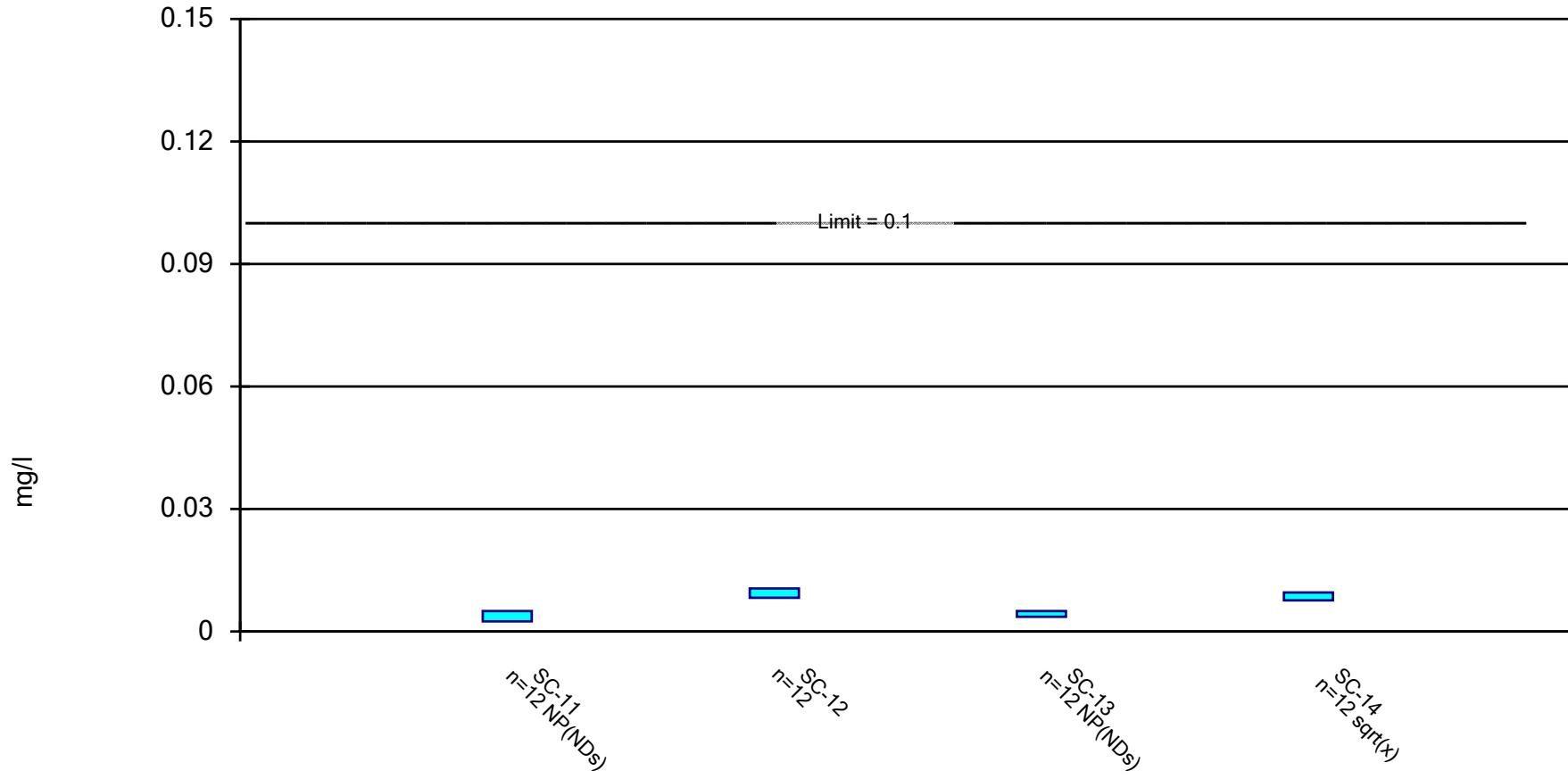
Confidence Interval

Constituent: Molybdenum, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.005	<0.005	<0.005 (D)			0.0113
6/23/2016				<0.005		
6/27/2016					0.0201	
8/2/2016	<0.005 (D)	<0.005	<0.005	0.00838	0.0198	
8/3/2016						0.008055 (D)
9/19/2016	<0.005	<0.005 (D)	<0.005	0.0122	0.00609	
9/20/2016						0.00911
10/12/2016	<0.005	0.001252 (D)	<0.005	0.009175 (D)	0.00525	
10/13/2016						0.00767
11/15/2016	<0.005	<0.005	<0.005	0.01065 (D)	0.0117	
11/16/2016						0.0074
1/18/2017	<0.005	<0.005	<0.005 (D)	0.00969	<0.005	
1/19/2017						0.00614
2/14/2017	<0.005	<0.005	<0.005 (D)	0.0104	0.00716	
2/15/2017						0.006325 (D)
2/28/2017	<0.005 (D)	<0.005	<0.005	0.0109	0.00842	
3/1/2017						0.00646
11/13/2017	0.0015 (D)	0.0014 (D)	<0.0002 (D1)	0.005 (D)	0.0042 (D)	
11/14/2017						0.0026 (D)
2/14/2018	<0.01	0.003	<0.01	0.0112 (D)	0.0055	
2/15/2018						0.0072
9/25/2018	0.0015 (D)	0.002	0.0006	0.0086	0.0027	
9/26/2018						0.0062
5/14/2019	0.0018	0.002 (D)	0.00068 (D)	0.0069 (D)	0.0014 (D)	
5/15/2019						0.0054 (D)
Mean	0.004567	0.003721	0.00429	0.009008	0.00811	0.006988
Std. Dev.	0.002286	0.001634	0.002697	0.002352	0.006125	0.002105
Upper Lim.	0.01	0.005	0.01	0.01085	0.01205	0.00864
Lower Lim.	0.0015	0.0014	0.0006	0.007163	0.003562	0.005337

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

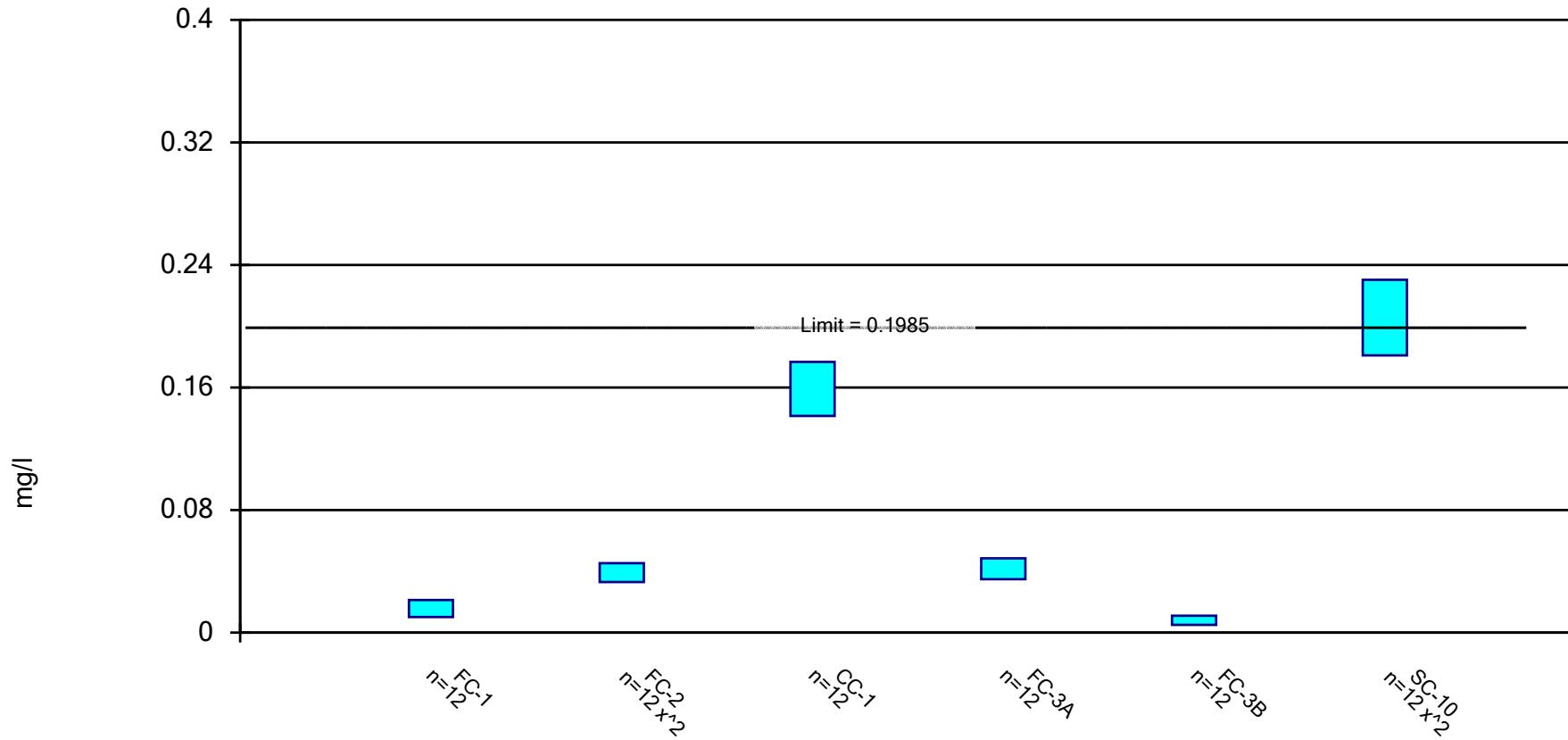
Confidence Interval

Constituent: Molybdenum, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.005	0.0128	<0.005	0.0079
8/3/2016	<0.005	0.0103	<0.005	0.00734
9/20/2016	<0.005 (D)	0.00983	<0.005	0.00819
10/13/2016	<0.005	0.0101 (D)	<0.005	0.00848
11/16/2016	<0.005	0.00951	<0.005 (D)	0.00897
1/19/2017	<0.005	0.00866	<0.005	0.00798
2/15/2017	<0.005	0.00909	<0.005	0.00821
3/1/2017	<0.005	0.00905 (D)	<0.005	0.00869
11/14/2017	0.00185 (D)	0.0067 (D)	0.0036 (D)	0.0072 (D)
2/15/2018	0.0033	0.0097	0.005	0.012
9/26/2018	0.003	0.0089	0.00375 (D)	0.0098
5/15/2019	0.0025 (D)	0.0081 (D)	0.0031 (D)	0.0086 (D)
Mean	0.004221	0.009395	0.004621	0.008613
Std. Dev.	0.001198	0.00145	0.0007011	0.001276
Upper Lim.	0.005	0.01053	0.005	0.009554
Lower Lim.	0.0025	0.008257	0.0036	0.007646

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

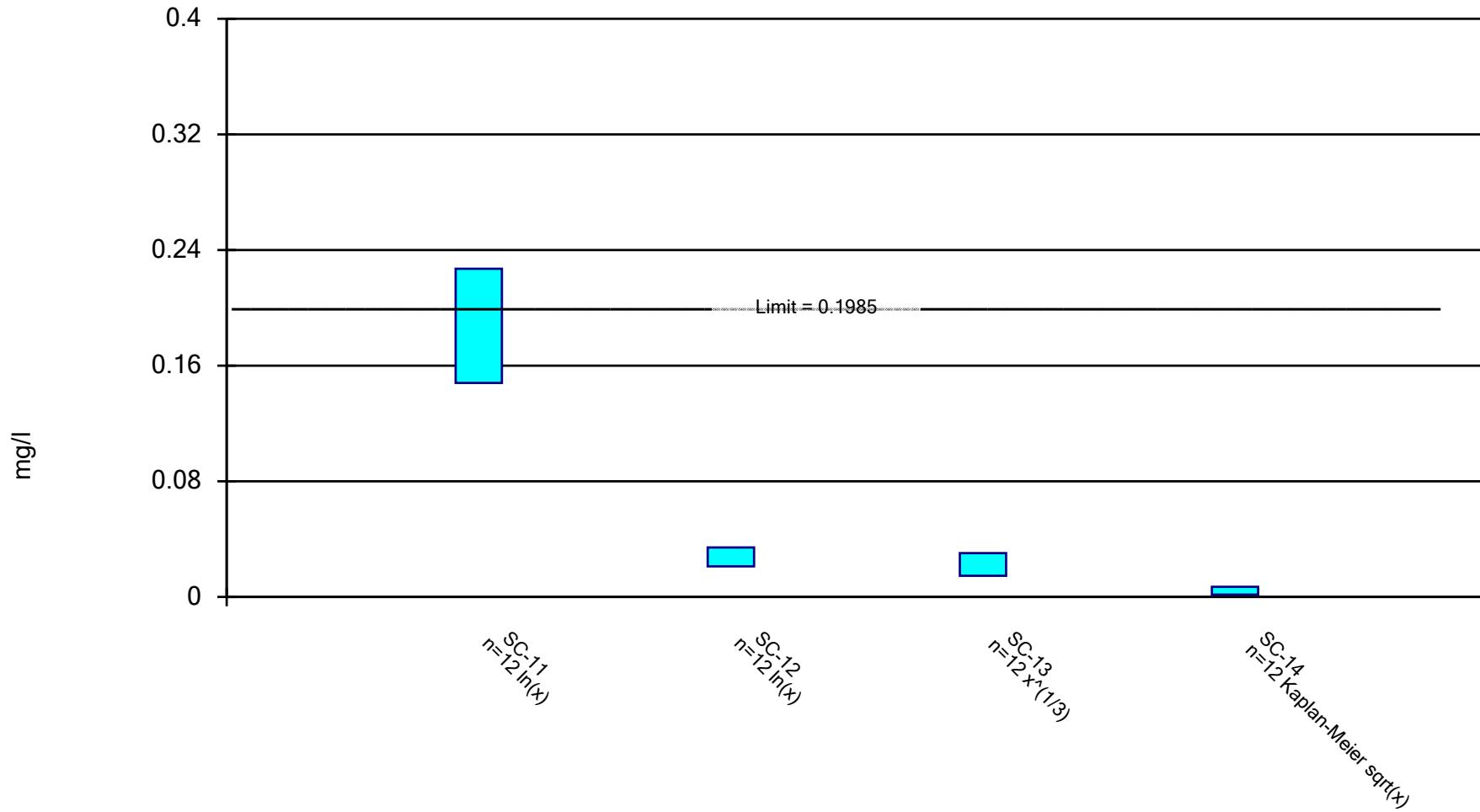
Confidence Interval

Constituent: Selenium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.016	0.0471	0.1985 (D)			0.212
6/23/2016				0.0393		
6/27/2016					0.0057	
8/2/2016	0.0098 (D)	0.0412	0.186	0.0382	0.0069	
8/3/2016						0.216 (D)
9/19/2016	0.028 (D)	0.04895 (D)	0.157 (D)	0.0364 (D)	0.0112 (D)	
9/20/2016						0.201 (D)
10/12/2016	0.0167 (D)	<0.001 (D1)	0.138 (D)	0.04245 (D)	0.0115 (D)	
10/13/2016						0.194 (D)
11/15/2016	0.0136	0.0356 (D)	0.145 (D)	0.0355 (D)	0.0106 (D)	
11/16/2016						0.201 (DP1)
1/18/2017	0.0254 (D)	0.0452 (D)	0.1385 (D)	0.039 (D)	0.0067 (D)	
1/19/2017						0.22 (D)
2/14/2017	0.0141 (DT)	0.0388 (DT)	0.1415 (D)	0.0352 (DT)	0.0092 (D)	
2/15/2017						0.22 (D)
2/28/2017	0.00375 (D)	0.0367 (D)	0.143 (D)	0.0263 (D)	0.0011 (D)	
3/1/2017						0.224 (D)
11/13/2017	0.015 (D)	0.0381 (D)	0.135 (D)	0.0552 (D)	0.0107 (D)	
11/14/2017						0.168 (D)
2/14/2018	0.0068	0.044	0.169	0.0543 (D)	0.0036	
2/15/2018						0.249
9/25/2018	0.02165 (D)	0.0371	0.17	0.0512	0.0142	
9/26/2018						0.111 (D)
5/14/2019	0.0178 (D)	0.0402 (D)	0.188 (D)	0.04725 (D)	0.005 (D)	
5/15/2019						0.235 (D)
Mean	0.01572	0.03779	0.1591	0.04169	0.008033	0.2043
Std. Dev.	0.007075	0.01251	0.02246	0.008707	0.003821	0.03589
Upper Lim.	0.02127	0.04531	0.1768	0.04852	0.01103	0.2303
Lower Lim.	0.01017	0.03301	0.1415	0.03486	0.005036	0.181

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

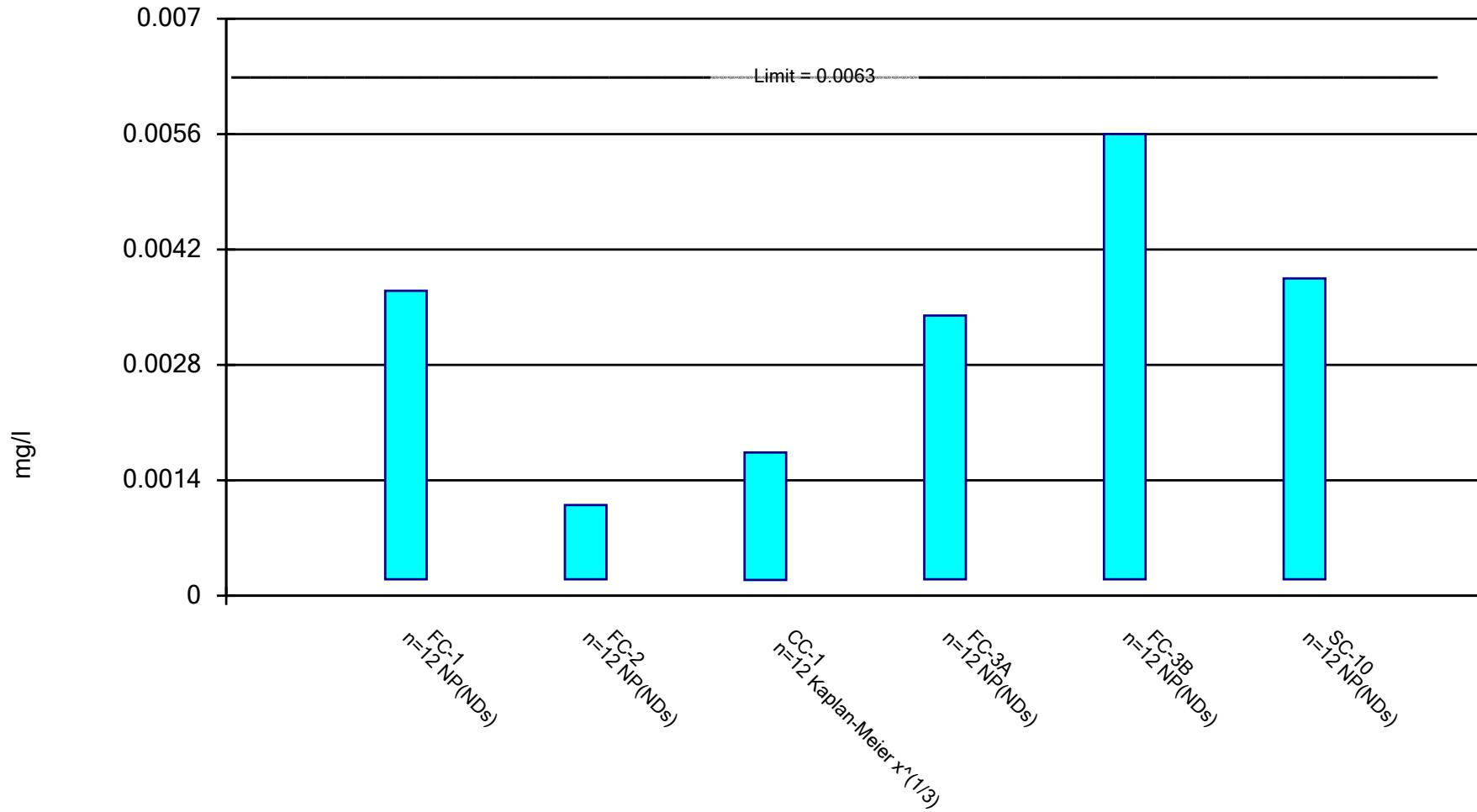
Constituent: Selenium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.168	0.0203	0.0311	0.0031
8/3/2016	0.155	0.0197	0.0236	0.0035
9/20/2016	0.188 (D)	0.0252 (D)	0.0228 (D)	0.0062 (D)
10/13/2016	0.168 (D)	0.05055 (D)	0.0558 (D)	0.0192 (D)
11/16/2016	0.163 (DP1)	0.0237 (DP1)	0.00765 (D)	<0.001 (D1P)
1/19/2017	0.196 (D)	0.0337 (D)	0.0202 (D)	0.0013 (D)
2/15/2017	0.194 (D)	0.03 (D)	0.0164 (D)	0.0033 (D)
3/1/2017	0.189 (D)	0.02355 (D)	0.0177 (D)	<0.001 (D1)
11/14/2017	0.213 (D)	0.0252 (D)	0.0236 (D)	0.0046 (D)
2/15/2018	0.355	0.0437	0.0204	0.0055
9/26/2018	0.107 (D)	0.0231	0.01845 (D)	0.002
5/15/2019	0.186 (D)	0.0198 (D)	0.0185 (D)	0.005 (D)
Mean	0.1902	0.02821	0.02302	0.004558
Std. Dev.	0.05849	0.009837	0.0117	0.004983
Upper Lim.	0.2271	0.03423	0.03036	0.007059
Lower Lim.	0.1481	0.02117	0.01465	0.001629

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Thallium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

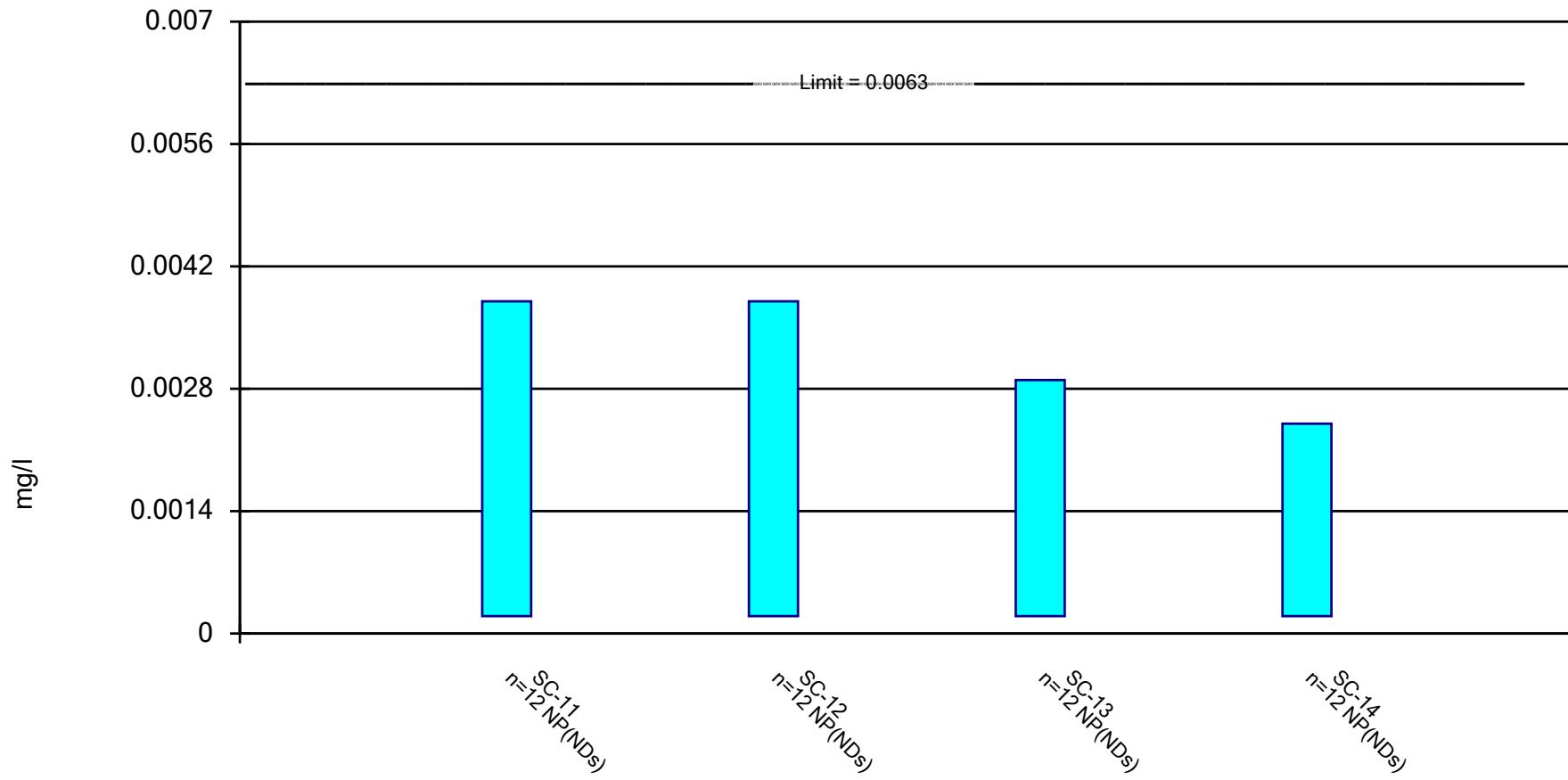
Constituent: Thallium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.0002	<0.0002	0.000455 (D)			<0.0002
6/23/2016				<0.0002		
6/27/2016					<0.0002	
8/2/2016	<0.0002 (D)	<0.0002	0.00045	<0.0002	<0.0002	
8/3/2016						<0.0002 (D)
9/19/2016	0.00027 (D)	0.000545 (D)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	
9/20/2016						<0.0002 (D1)
10/12/2016	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D)	<0.0002 (D1)	
10/13/2016						<0.0002 (D1)
11/15/2016	0.0061 (D)	<0.0002 (D1)	0.0063 (D)	0.0057 (D)	0.0056 (D)	
11/16/2016						0.0077 (D)
1/18/2017	<0.0005 (D1)	<0.0005 (D1)	0.0014 (D)	0.00069 (D)	0.00098 (D)	
1/19/2017						0.00091 (D)
2/14/2017	0.0037 (D)	0.0036 (D)	0.00385 (D)	0.0034 (D)	0.0062 (D)	
2/15/2017						0.00385 (D)
2/28/2017	0.0011 (D)	0.0011 (D)	0.0014 (D)	0.0011 (D)	0.00091 (D)	
3/1/2017						0.00082 (D)
11/13/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	
11/14/2017						<0.0005 (D1)
2/14/2018	<0.002	<0.001	<0.002	<0.001 (D)	<0.001	
2/15/2018						<0.0004
9/25/2018	<0.0005 (D)	<0.0005	<0.0005	<0.0005	<0.0005	
9/26/2018						<0.0005 (D1)
5/14/2019	<0.0005	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	
5/15/2019						<0.0005 (D1D)
Mean	0.001314	0.0007538	0.00148	0.001183	0.001416	0.001332
Std. Dev.	0.001824	0.0009443	0.001844	0.001675	0.00212	0.002244
Upper Lim.	0.0037	0.0011	0.001738	0.0034	0.0056	0.00385
Lower Lim.	0.0002	0.0002	0.0001909	0.0002	0.0002	0.0002

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium, Total Analysis Run 9/10/2019 11:06 AM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

Constituent: Thallium, Total (mg/l) Analysis Run 9/10/2019 11:12 AM View: CCR Landfill Prediction Intervals

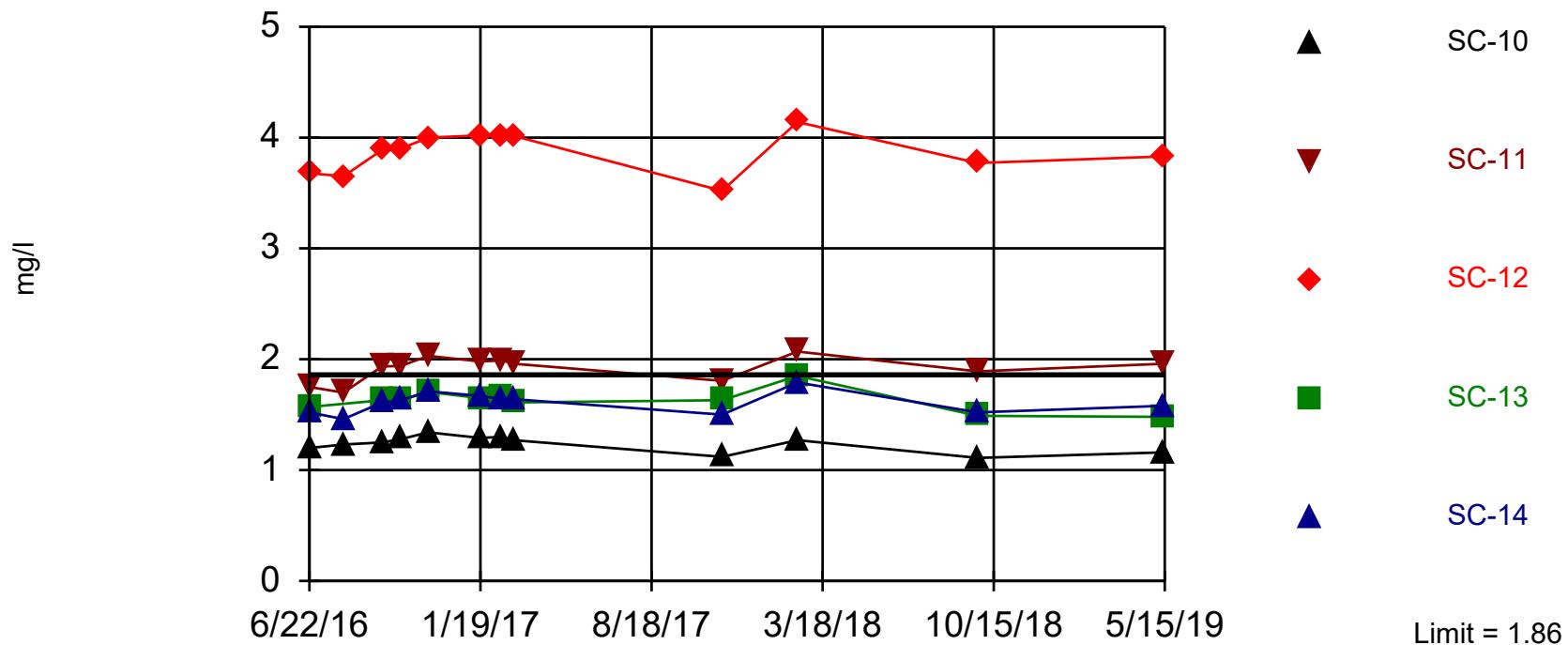
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.0002	<0.0002	<0.0002	<0.0002
8/3/2016	<0.0002	<0.0002	<0.0002	<0.0002
9/20/2016	<0.0002 (D)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)
10/13/2016	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)
11/16/2016	0.0063 (D)	0.006 (D)	0.0029 (D)	0.0024 (D)
1/19/2017	0.0012 (D)	0.0014 (D)	0.0015 (D)	0.0014 (D)
2/15/2017	0.0038 (D)	0.0038 (D)	0.0038 (D)	0.0035 (D)
3/1/2017	0.00077 (D)	0.00076 (D)	0.00077 (D)	0.00075 (D)
11/14/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
2/15/2018	<0.0004	<0.002	<0.001	<0.001
9/26/2018	<0.0005 (D1)	<0.0005	<0.0005 (D)	<0.0005
5/15/2019	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
Mean	0.001231	0.001355	0.001023	0.0009458
Std. Dev.	0.001884	0.001805	0.00117	0.001032
Upper Lim.	0.0038	0.0038	0.0029	0.0024
Lower Lim.	0.0002	0.0002	0.0002	0.0002

Exceeds Limit: SC-11, SC-12

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit.

Constituent: Boron, Total Analysis Run 9/5/2019 4:15 PM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Boron, Total (mg/l) Analysis Run 9/5/2019 4:17 PM View: CCR Landfill Prediction Intervals

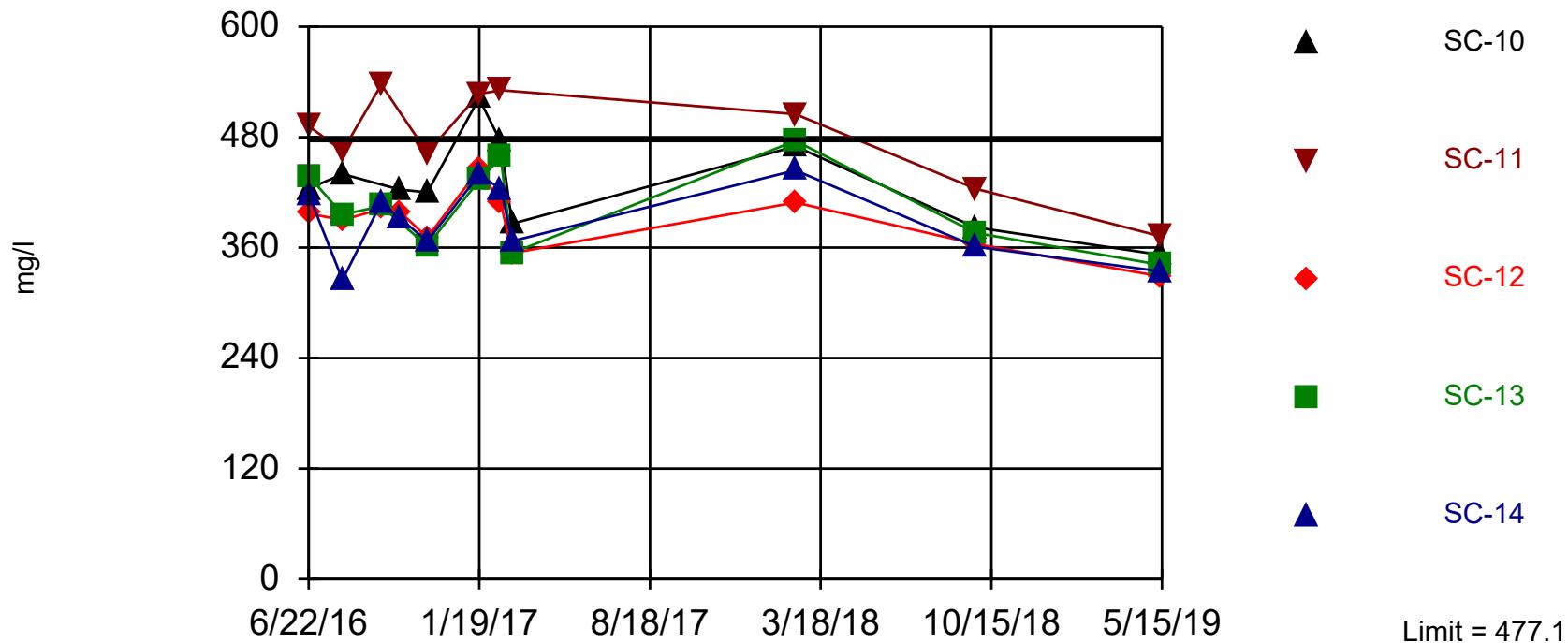
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	SC-14	SC-11	SC-10	SC-13	SC-12	CC-1	FC-3A	FC-3B
6/22/2016	0.976 (T)	0.901 (T)	1.52	1.75	1.2	1.57	3.68	1.07 (D)		
6/23/2016									1.31	
6/27/2016										1.09
8/2/2016	0.9285 (D)	0.902						1.03	1.08	1.28
8/3/2016			1.46	1.7	1.23 (D)		3.65			
9/19/2016	0.932	0.937 (D)						1.05	1.2	1.46
9/20/2016			1.61	1.935 (D)	1.25	1.63	3.89			
10/12/2016	0.931	0.923						1.1	1.175 (D)	1.53
10/13/2016			1.63	1.94	1.28	1.63	3.9 (D)			
11/15/2016	1.03	0.936						1.12	1.185 (D)	1.68
11/16/2016			1.71	2.03	1.34	1.705 (D)	4			
1/18/2017	0.98	0.946						1.125 (D)	1.19	1.66
1/19/2017			1.67	1.98	1.29	1.65	4.02			
2/14/2017	0.972	0.934						1.115 (D)	1.14	1.59
2/15/2017			1.64	1.99	1.3 (D)	1.67	4.02			
2/28/2017	0.9495 (D)	0.956 (D)						1.03 (D)	1.14 (D)	1.73 (D)
3/1/2017			1.64 (D)	1.96 (DT1)	1.27 (DT1)	1.61 (DT1)	4.015 (DT1)			
11/13/2017	0.884	0.925 (D)						1.04	1.05	1.69
11/14/2017			1.5	1.805 (D)	1.12	1.63	3.52			
2/14/2018	1.05 (D)	0.957 (D)						1.08 (D)	1.13 (D)	1.86 (D)
2/15/2018			1.79 (DT)	2.07 (DT)	1.27 (DT)	1.85 (DT)	4.14 (DT)			
9/25/2018	0.887 (D)	0.887 (D)						1 (D)	1.03 (D)	1.73 (D)
9/26/2018			1.52 (D)	1.89 (D)	1.11 (D)	1.49 (D)	3.77 (D)			
5/14/2019	1.02	0.926						1.07	1.04 (D)	1.3
5/15/2019			1.58 (T)	1.96 (T)	1.16 (T)	1.48 (T)	3.83 (TD)			

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square transformation): Mean=150493, Std. Dev.=41235, n=47. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9513, critical = 0.928. Kappa = 1.87 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

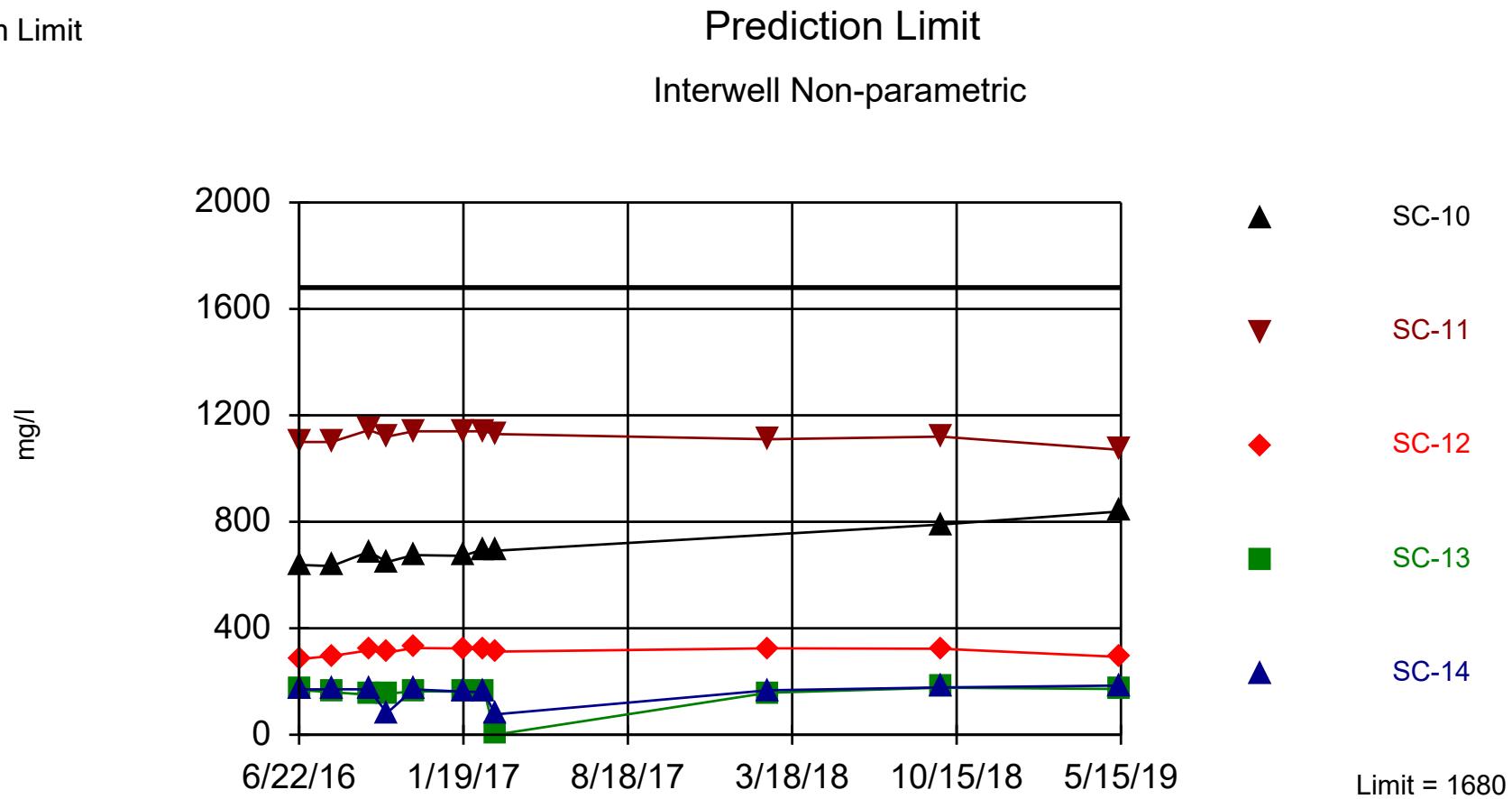
Constituent: Calcium, Total Analysis Run 9/5/2019 4:15 PM View: CCR Landfill Prediction Intervals
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Calcium, Total (mg/l) Analysis Run 9/5/2019 4:17 PM View: CCR Landfill Prediction Intervals
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-10	FC-2	SC-11	SC-12	CC-1	SC-14	SC-13	FC-3A	FC-3B
6/22/2016	404	424 (DT1)	405 (T1D)	492 (DT1)	397 (DT1)	472 (DT1)	418 (DT1)	438 (DT1)		
6/23/2016									440 (DT1)	453 (DT1)
6/27/2016				440 (DT1)						
8/2/2016	410 (DT1)			465 (DT1)	390 (DT1)		325	396 (DT1)	417 (DT1)	412 (DT1)
8/3/2016		440 (DT1)		393.5 (DT1)		483 (DT1)				
9/19/2016	388 (DT1)			537 (DT1)	402 (DT1)		409 (D)	405 (D)	433 (DT1)	424 (DT1)
9/20/2016										
10/12/2016	389 (D)		390 (D)			398 (DT1)				
10/13/2016		423 (DT1)			399 (DT1)		392 (DT1)			
11/15/2016									385 (D)	331 (D)
11/16/2016		420 (DT1)		463 (DT1)	371 (DT1)		367 (DT1)	362 (DT1)		
1/18/2017	438 (T1D)		438 (T1D)						445 (DT1)	282 (DT1)
1/19/2017		522 (DT1)		527 (DT1)	445 (D)		439 (DT1)	433 (DT1)		
2/14/2017	408 (DT1)					431.5 (DT1)			420 (DT1)	296 (DT1)
2/15/2017		474.5 (DT1)		531 (DT1)	408 (DT1)		424 (DT1)	458 (DT1)		
2/28/2017	376.5 (DT1)		381 (DT1)			379 (DT1)			390 (DT1)	325 (DT1)
3/1/2017		386 (DT1)			354 (DT1)		367 (DT1)	354 (DT1)		
2/14/2018	397 (DT)		387 (DT)			392 (DT)			401 (DT)	246 (DT)
2/15/2018		470 (DT)		505 (DT)	409 (DT)		444 (DT)	476 (DT)		
9/25/2018	370 (D)		368 (D)				361 (D)	376 (D)		
9/26/2018		382 (D)		424 (D)	364 (D)				386 (D)	233 (D)
5/14/2019	337 (T1)		344			340 (T1)			353.5 (T1D)	196 (T1)
5/15/2019		352 (T1)		372 (T1)	328.5 (T1D)		334 (T1)	341 (T1)		

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. Annual per-constituent alpha = 0.006311. Individual comparison alpha = 0.0006329 (1 of 2). Comparing 5 points to limit.

Constituent: Chloride Analysis Run 9/5/2019 4:15 PM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 9/5/2019 4:17 PM View: CCR Landfill Prediction Intervals

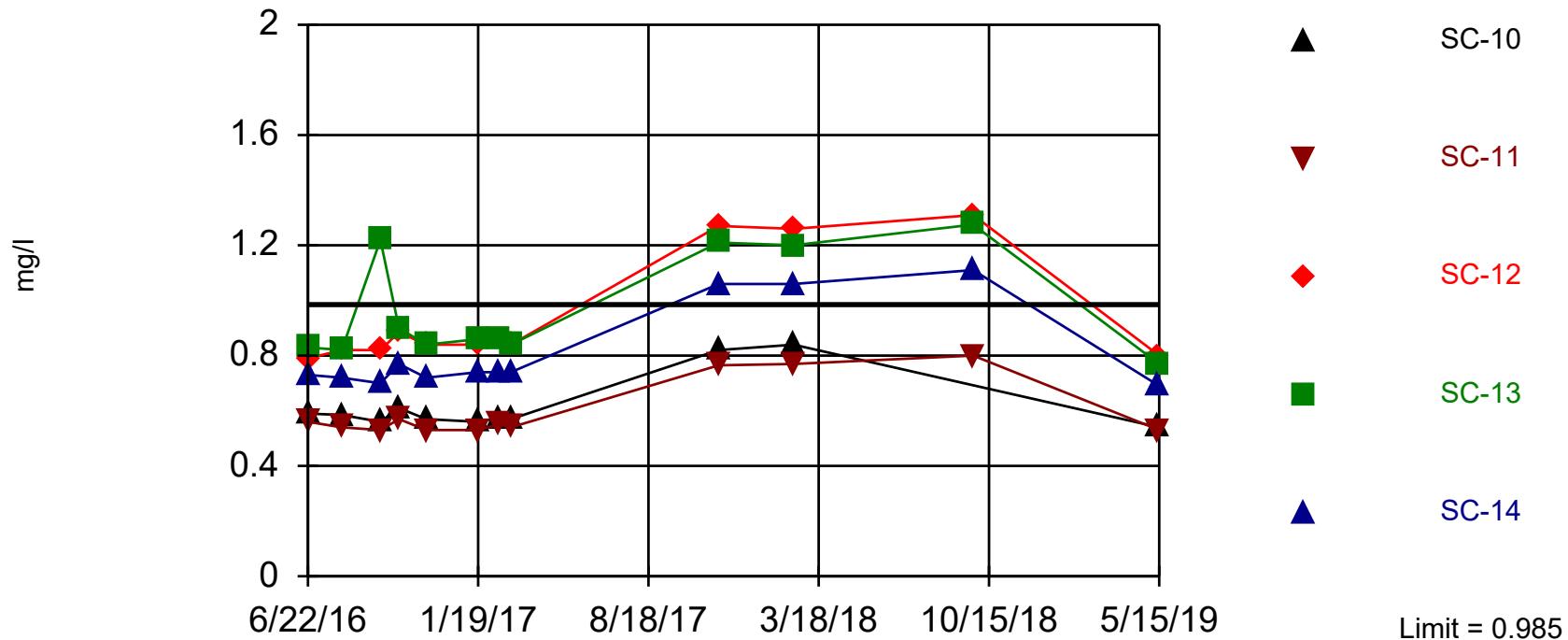
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-13	SC-12	SC-11	SC-10	CC-1	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	772 (D)	168 (D)	284 (D)	1100 (D)	638 (D)	1535 (D)	132 (D)	170 (D)		
6/23/2016									92.5 (D)	
6/27/2016										319 (D)
8/2/2016	761.5 (D)					1540 (D)	128 (D)		91 (D)	504 (D)
8/3/2016		160 (D)	296 (D)	1100 (D)	633.5 (D)			171 (D)		
9/19/2016	760 (D)		150 (D)	317 (D)	1145 (D)	688 (D)		130 (D)	96.3 (D)	594 (D)
9/20/2016									171 (D)	
10/12/2016	750 (D)		154 (D)	308.5 (D)	1120 (D)	649 (D)		124 (D)		99.55 (D)
10/13/2016										687 (D)
11/15/2016	71.2 (D)		163 (D)	326 (D)	1140 (D)	675 (D)		127 (D)		101.5 (D)
11/16/2016									170 (D)	
1/18/2017	741 (D)		162 (D)	324 (D)	1140 (D)	672 (D)		125 (D)		104 (D)
1/19/2017									162 (D)	
2/14/2017	738 (D)					1515 (D)	123 (D)			107 (D)
2/15/2017		165 (D)	320 (D)	1140 (D)	697.5 (D)				160 (D)	
2/28/2017	769 (D)					1560 (D)	122 (D)			107 (D)
3/1/2017		0.163 (D)	312.5 (D)	1130 (D)	691 (D)				76.5 (D)	
2/14/2018	756 (D)					1530 (D)	124 (D)			115.5 (D)
2/15/2018		158 (DT)	325 (TD)	1110 (DT)					167 (DT)	
9/25/2018	783.5 (D)					1520 (D)	118 (D)			122 (D)
9/26/2018		177 (D)	323 (D)	1120 (D)	790 (D)				178 (D)	
5/14/2019	782 (D)					1540 (D)	113 (D)			124 (D)
5/15/2019		172 (D)	292 (D)	1070 (D)	839 (D)				185 (D)	

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit.

Prediction Limit

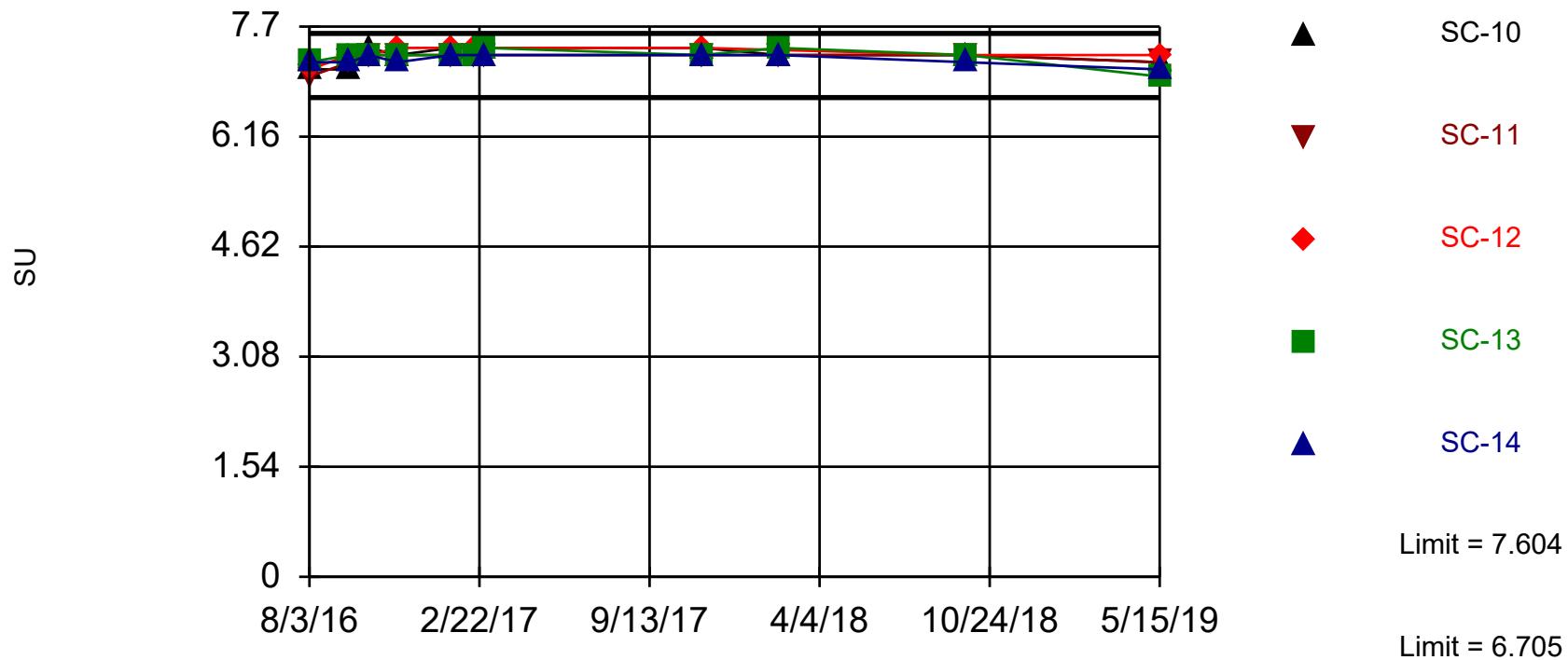
Constituent: Fluoride, Total (mg/l) Analysis Run 9/5/2019 4:17 PM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-13	SC-12	SC-11	SC-10	SC-14	CC-1	FC-2	FC-3A	FC-3B
6/22/2016	0.12 (T)	0.83 (T)	0.79 (T)	0.56 (T)	0.59 (T)	0.73 (T)	0.215 (TD)	0.51 (T)		
6/23/2016									0.46 (T)	
6/27/2016										0.55
8/2/2016	0.06006 (TD)						0.21 (T)	0.5 (T)	0.46 (T)	0.00048 (T)
8/3/2016		0.82 (T)	0.82 (T)	0.54 (T)	0.585 (TD)	0.72 (T)				
9/19/2016	0.13						0.22	0.985 (D)	0.48	0.48
9/20/2016		1.22 (D)	0.82	0.53 (D)	0.56	0.7				
10/12/2016	0.12 (T)						0.21 (T)	0.52 (T)	0.465 (TD)	0.51 (T)
10/13/2016		0.9 (T)	0.885 (TD)	0.57 (T)	0.61 (T)	0.77 (T)				
11/15/2016	0.12 (T)						0.2 (T)	0.51 (T)	0.46 (TD)	0.46 (T)
11/16/2016		0.84 (D)	0.84 (T)	0.53 (T)	0.57 (T)	0.72 (T)				
1/18/2017	0.13 (T)						0.2 (TD)	0.52 (T)	0.46 (T)	0.56 (T)
1/19/2017		0.86 (T)	0.84 (T)	0.53 (T)	0.56 (T)	0.74 (T)				
2/14/2017	0.13 (T)						0.22 (TD)	0.55 (T)	0.48 (T)	0.51 (T)
2/15/2017		0.86 (T)		0.55 (T)	0.575 (TD)	0.74 (T)				
2/28/2017	0.13 (TD)						0.22 (T)	0.53 (T)	0.47 (T)	0.42 (T)
3/1/2017		0.84 (T)	0.84 (TD)	0.54 (T)	0.57 (T)	0.74 (T)				
11/13/2017	0.2						0.45	0.7 (D)	0.56	0.48
11/14/2017		1.21	1.27	0.765 (D)	0.82	1.06				
2/14/2018	0.21						0.5	0.74	0.615 (D)	0.53
2/15/2018		1.2	1.26	0.77	0.84	1.06				
9/25/2018	0.195 (D)						0.48	0.73	0.62	0.52
9/26/2018		1.275 (D)	1.31	0.8		1.11				
5/14/2019	0.13						0.2	0.51	0.44 (D)	0.69
5/15/2019		0.77	0.8 (D)	0.53	0.54	0.69				

Within Limits

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=7.155, Std. Dev.=0.2425, n=55. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9582, critical = 0.94. Kappa = 1.852 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.000752. Comparing 5 points to limit.

Constituent: pH Analysis Run 9/5/2019 4:15 PM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

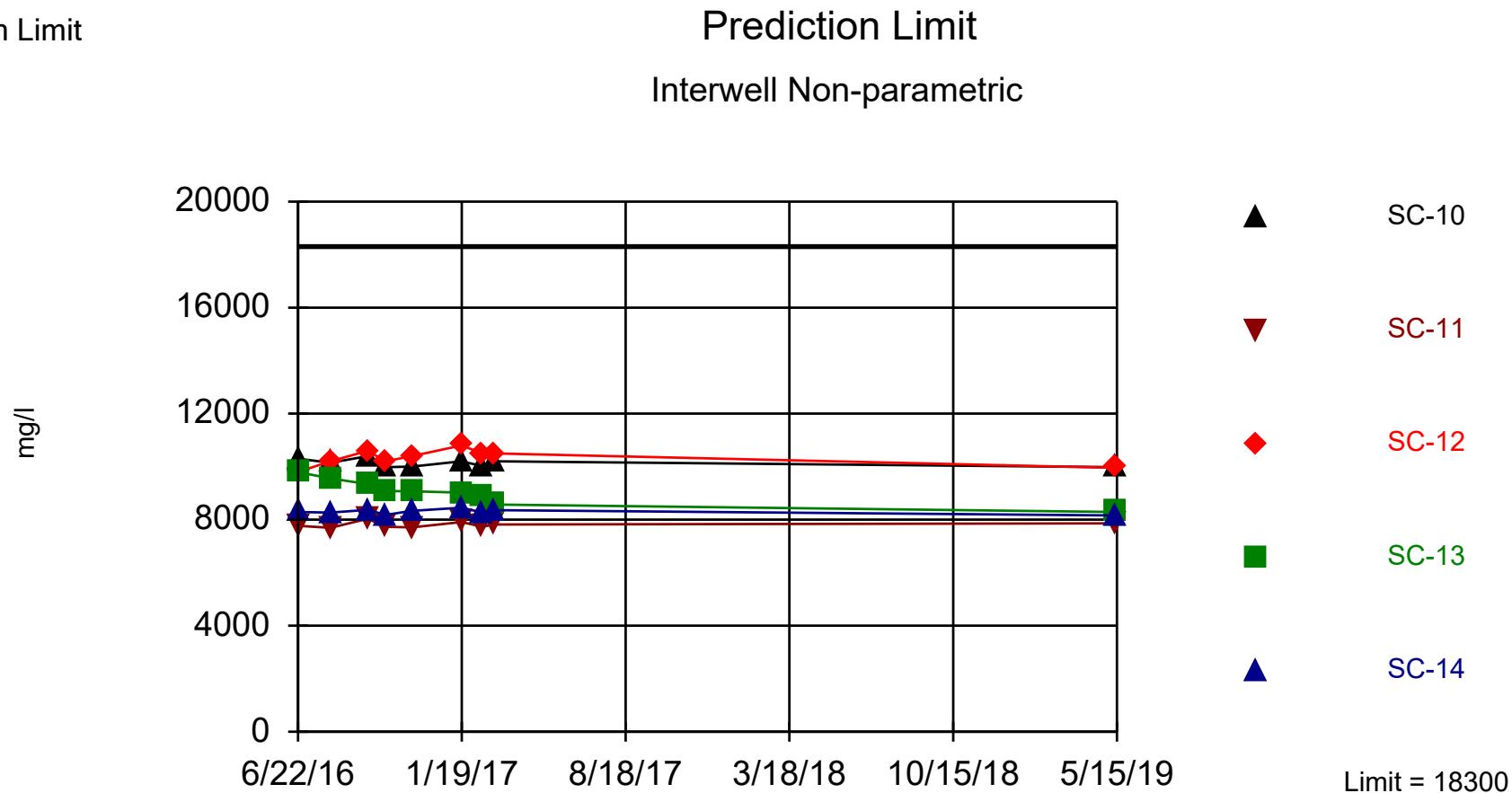
Prediction Limit

Constituent: pH (SU) Analysis Run 9/5/2019 4:17 PM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-3B	FC-3A	CC-1	FC-2	SC-12	SC-11	SC-10	SC-14	SC-13
8/2/2016	7 (D)	7.2	7.5	6.8	7.2					
8/3/2016						7.1	7	7.1 (D)	7.2	7.2
9/19/2016	7.1	6.9	7.5	6.7	7.2					
9/20/2016						7.3	7.2	7.1	7.2	7.3
10/12/2016	7.1	7	7.5	6.9	7.2					
10/13/2016						7.3	7.3	7.4	7.3	7.3
11/15/2016	7.1	7	7.6	6.9	7.3					
11/16/2016						7.4	7.3	7.3	7.2	7.3
1/18/2017	7.1	7	7.6	6.9	7.3					
1/19/2017						7.4	7.3	7.4	7.3	7.3
2/14/2017	7.1	7	7.6	6.9	7.3					
2/15/2017						7.4	7.3	7.4		7.3
2/28/2017	7.2	7	7.5	6.9	7.3					
3/1/2017						7.4	7.3	7.4	7.3	7.4
11/13/2017	7.2	7	7.6	7	7.3					
11/14/2017						7.4	7.3	7.4	7.3	7.3
2/14/2018	7.1	6.8	7.6	6.9	7.3					
2/15/2018										
9/25/2018	7	7.1	7.3	6.8	7.3					
9/26/2018						7.3	7.3	7.3	7.2	7.3
5/14/2019	7.1	7.2	7.5	6.8	7.2					
5/15/2019						7.3	7.2	7.2	7.1	7

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 45 background values. Annual per-constituent alpha = 0.009352. Individual comparison alpha = 0.0009391 (1 of 2). Comparing 5 points to limit.

Constituent: Sulfate Analysis Run 9/5/2019 4:15 PM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

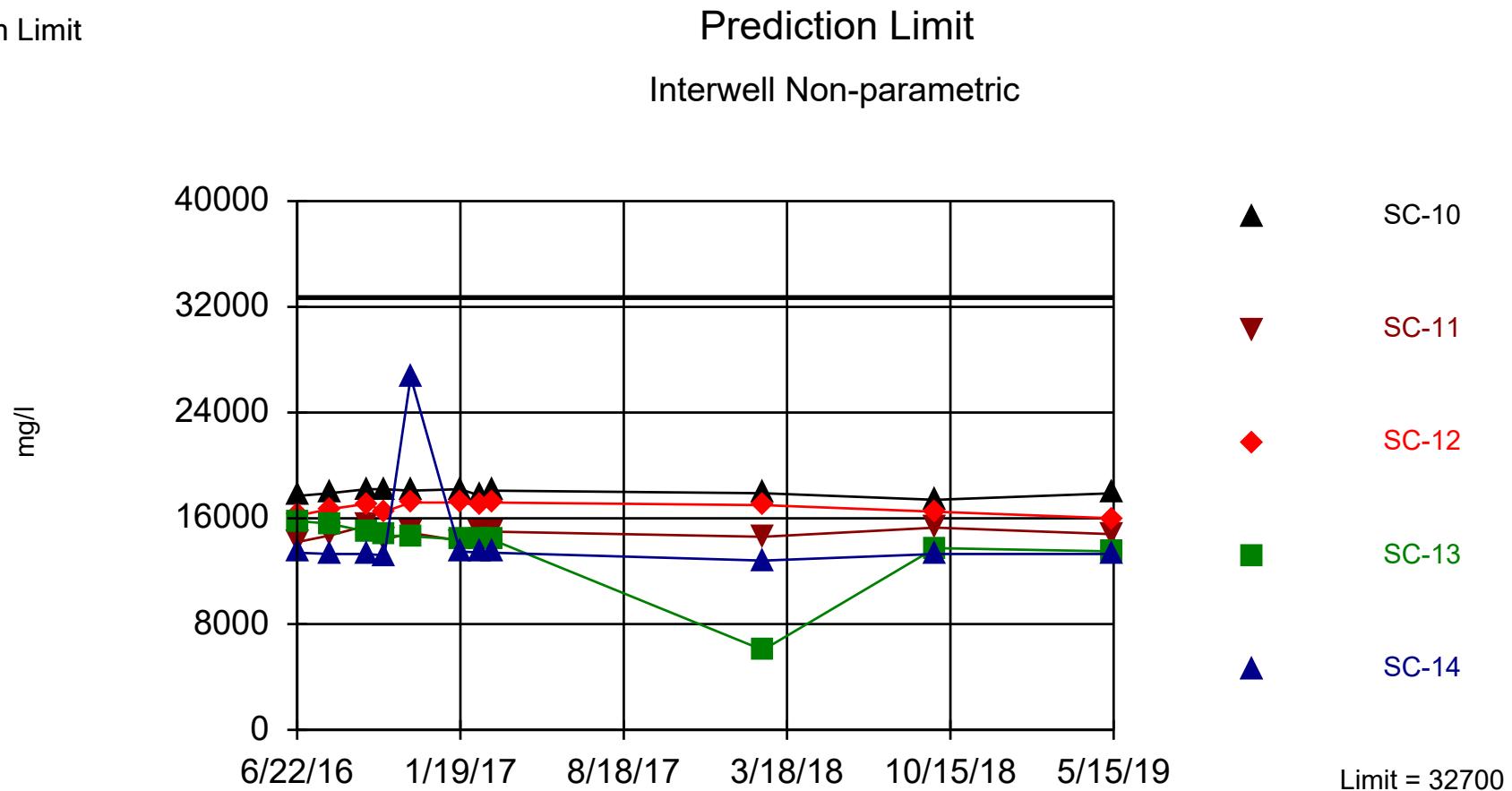
Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 9/5/2019 4:17 PM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-10	SC-13	SC-14	SC-11	FC-2	SC-12	FC-3A	FC-3B
6/22/2016	13200 (D)	17200 (D)	10300 (D)	9790 (D)	8290 (D)	7770 (D)	7080 (D)	9800 (D)		
6/23/2016									5870 (D)	
6/27/2016										4820 (D)
8/2/2016	13000 (D)	17200 (D)					7000 (D)		5650 (D)	5240 (D)
8/3/2016			10150 (D)	9560 (D)	8270 (D)	7690 (D)		10200 (D)		
9/19/2016	13000 (D)	17300 (D)		10400 (D)	9340 (D)	8370 (D)	8035 (D)		5800 (D)	5380 (D)
9/20/2016									10600 (D)	
10/12/2016	12800 (D)	16600 (D)		9980 (D)	9080 (D)	8180 (D)	7730 (D)		5635 (D)	4940 (D)
10/13/2016									10200 (D)	
11/15/2016	13600 (D)	17400 (D)		10000 (D)	9070 (D)	8330 (D)	7710 (D)		5735 (D)	5370 (D)
11/16/2016									10400 (D)	
1/18/2017	13700 (D)	17550 (D)		10200 (D)	9020 (D)	8450 (D)	7910 (D)		5880 (D)	4590 (D)
1/19/2017									10800 (D)	
2/14/2017	13200 (D)	16800 (D)					6840 (D)		5720 (D)	4470 (D)
2/15/2017			10020 (D)	8840 (D)	8270 (D)	7730 (D)		10500 (D)		
2/28/2017	13100 (D)	17400 (D)		10200 (D)	8570 (D)	8360 (D)	7820 (D)		5820 (D)	4640 (D)
3/1/2017									10500 (D)	
5/14/2019	13200 (D)	18300 (D)						6660 (D)		5725 (D)
5/15/2019			9980 (D)	8290 (D)	8160 (D)	7860 (D)			9955 (D)	4250 (D)

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. Annual per-constituent alpha = 0.006311. Individual comparison alpha = 0.0006329 (1 of 2). Comparing 5 points to limit.

Constituent: TDS Analysis Run 9/5/2019 4:15 PM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

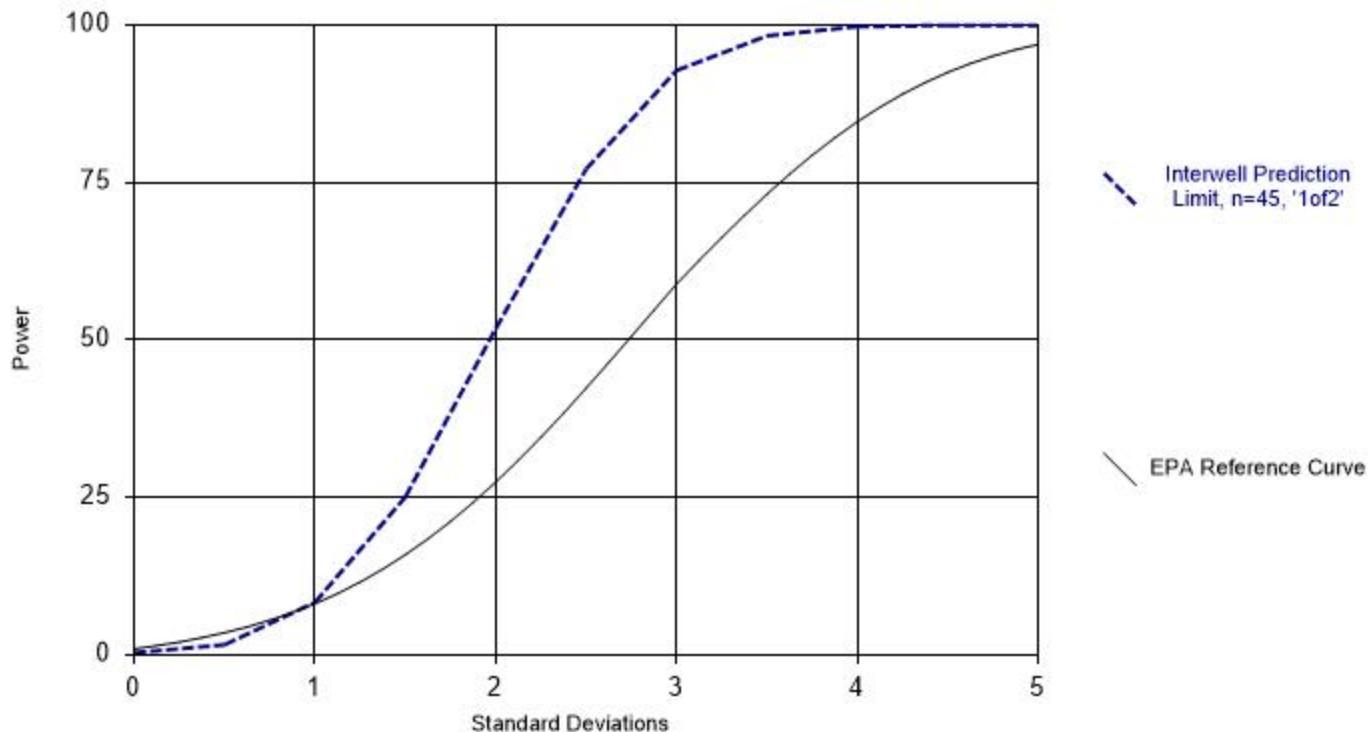
Prediction Limit

Constituent: TDS (mg/l) Analysis Run 9/5/2019 4:17 PM View: CCR Landfill Prediction Intervals

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-13	SC-12	SC-11	SC-10	CC-1	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	22300	15800	16200	14200	17700	30950 (D)	11200	13400		
6/23/2016									9460	
6/27/2016										7770
8/2/2016	22000 (D)					2.1	10900		9140	9200
8/3/2016		15600	16700	14700	17900 (D)			13300		
9/19/2016	21900		15000	17100	15450 (D)	18200		30500	11250 (D)	9320
9/20/2016									13300	9410
10/12/2016	23200		14700	16500 (D)	14400	18200		31400	11600	9470 (D)
10/13/2016									13200	9450
11/15/2016	22100		14650 (D)	17200	14900	18100		30600	11300	9320 (D)
11/16/2016									26700	9630
1/18/2017	22200		14400	17200	14300	18200		31200 (D)	11200	9180
1/19/2017									13500	9250
2/14/2017	22100		14400	17000	15000	17700 (D)		30450 (D)	11200	9310
2/15/2017									13400	9350
2/28/2017	22100 (D)		14400	17200 (D)	15000	18100		30800	11300	9490
3/1/2017									13400	9410
2/14/2018	22300		6040	17000	14600	17900		32500	11000	9400 (D)
2/15/2018									12800	9040
9/25/2018	21800 (D)		13750 (D)	16500	15300	17400		31400	10900	9700
9/26/2018									13300	8970
5/14/2019	22300		13500	16000 (D)	14800	17900		32700	10800	9280 (D)
5/15/2019									13300	7890

Power Curve



Kappa = 1.876, based on 5 compliance wells and 7 constituents, evaluated semi-annually (this report reflects annual total).

Analysis Run 9/5/2019 4:22 PM View: CCR Landfill Prediction Intervals
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

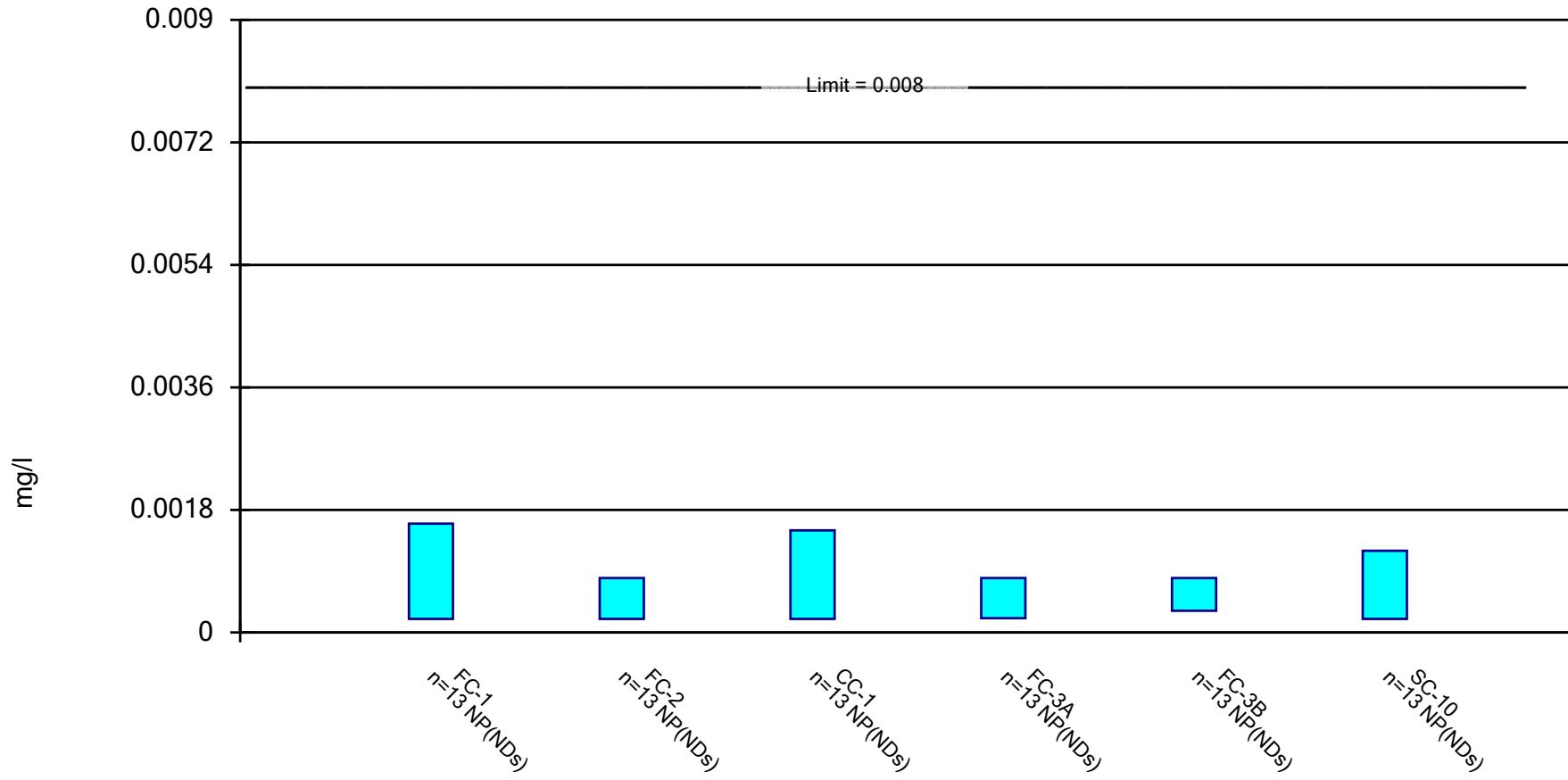
Tolerance Limit

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database Printed 9/10/2019, 10:44 AM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony, Total (mg/l)	n/a	0.008	n/a	n/a	n/a	60	80	n/a	0.04607	NP Inter(NDs)
Arsenic, Total (mg/l)	n/a	0.01192	n/a	n/a	n/a	59	13.56	sqr(x)	0.05	Inter
Barium, Total (mg/l)	n/a	2.833	n/a	n/a	n/a	60	6.667	n/a	0.04607	NP Inter(normal...)
Beryllium, Total (mg/l)	n/a	0.0002	n/a	n/a	n/a	60	100	n/a	0.04607	NP Inter(NDs)
Cadmium, Total (mg/l)	n/a	0.005	n/a	n/a	n/a	60	95	n/a	0.04607	NP Inter(NDs)
Chromium, Total (mg/l)	n/a	0.01	n/a	n/a	n/a	60	75	n/a	0.04607	NP Inter(NDs)
Cobalt, Total (mg/l)	n/a	0.0139	n/a	n/a	n/a	58	82.76	n/a	0.05105	NP Inter(NDs)
Fluoride, Total (mg/l)	n/a	0.985	n/a	n/a	n/a	60	0	n/a	0.04607	NP Inter(normal...)
Lead, Total (mg/l)	n/a	0.009	n/a	n/a	n/a	60	48.33	n/a	0.04607	NP Inter(normal...)
Lithium, Total (mg/l)	n/a	1.16	n/a	n/a	n/a	60	0	n/a	0.04607	NP Inter(normal...)
Mercury, Total (mg/l)	n/a	0.000024	n/a	n/a	n/a	59	0	n/a	0.04849	NP Inter(normal...)
Molybdenum, Total (mg/l)	n/a	0.0201	n/a	n/a	n/a	60	46.67	n/a	0.04607	NP Inter(normal...)
Rad 226+228 (pCi/L)	n/a	5.023	n/a	n/a	n/a	60	0	x^(1/3)	0.05	Inter
Selenium, Total (mg/l)	n/a	0.1985	n/a	n/a	n/a	60	1.667	n/a	0.04607	NP Inter(normal...)
Thallium, Total (mg/l)	n/a	0.0063	n/a	n/a	n/a	60	63.33	n/a	0.04607	NP Inter(NDs)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

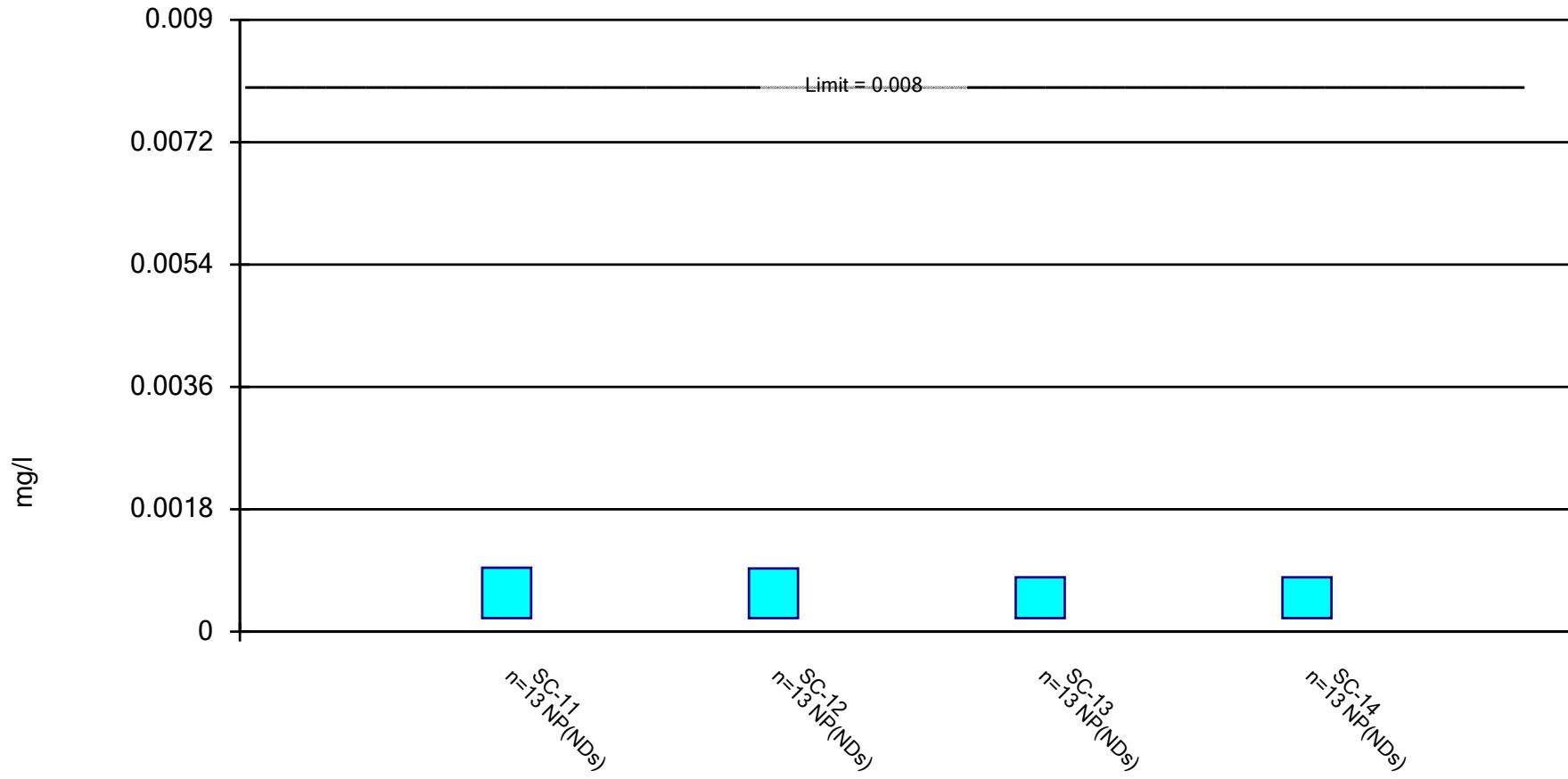
Confidence Interval

Constituent: Antimony, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.0002	<0.0002	<0.0002 (D)			<0.0002
6/23/2016				0.00021		
6/27/2016					0.00065	
8/2/2016	<0.0002 (D)	<0.0002	<0.0002	<0.0002	0.00061	
8/3/2016						<0.0002 (D)
9/19/2016	<0.0002 (D1)					
9/20/2016						<0.0002 (D1)
10/12/2016	<0.0002 (D1)	<0.0002 (D1)	0.0004 (D)	0.00026 (D)	0.00032 (D)	
10/13/2016						0.00025 (D)
11/15/2016	0.0016 (D)	<0.0002 (D1)	0.0015 (D)	0.0015 (D)	0.0015 (D)	
11/16/2016						0.0012 (D)
1/18/2017	<0.0005 (D1P)	<0.0005 (D1P)	<0.0005 (D1)	0.00055 (D)	<0.0005 (D1)	
1/19/2017						<0.0005 (D1)
2/14/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	0.00066 (D)	
2/15/2017						0.00054 (D)
2/28/2017	<0.0005 (D1)					
3/1/2017						<0.0005 (D1)
11/13/2017	<0.0005 (D1)					
11/14/2017						<0.0005 (D1)
2/14/2018	<0.008	<0.0008	<0.008	<0.0008 (D)	<0.0008	
2/15/2018						<0.008
9/25/2018	<0.0005 (D)	<0.0005	<0.0005	<0.0005	<0.0005	
9/26/2018						<0.0005
5/14/2019	<0.0005 (D1D)					
5/15/2019						<0.0005 (D1D)
9/24/2019	<0.0005 (D1D)					
9/25/2019						<0.0005 (D1D)
Mean	0.001069	0.0004077	0.001077	0.0005169	0.0005954	0.001045
Std. Dev.	0.002114	0.0001891	0.002106	0.0003428	0.0003102	0.002106
Upper Lim.	0.0016	0.0008	0.0015	0.0008	0.0008	0.0012
Lower Lim.	0.0002	0.0002	0.0002	0.00021	0.00032	0.0002

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

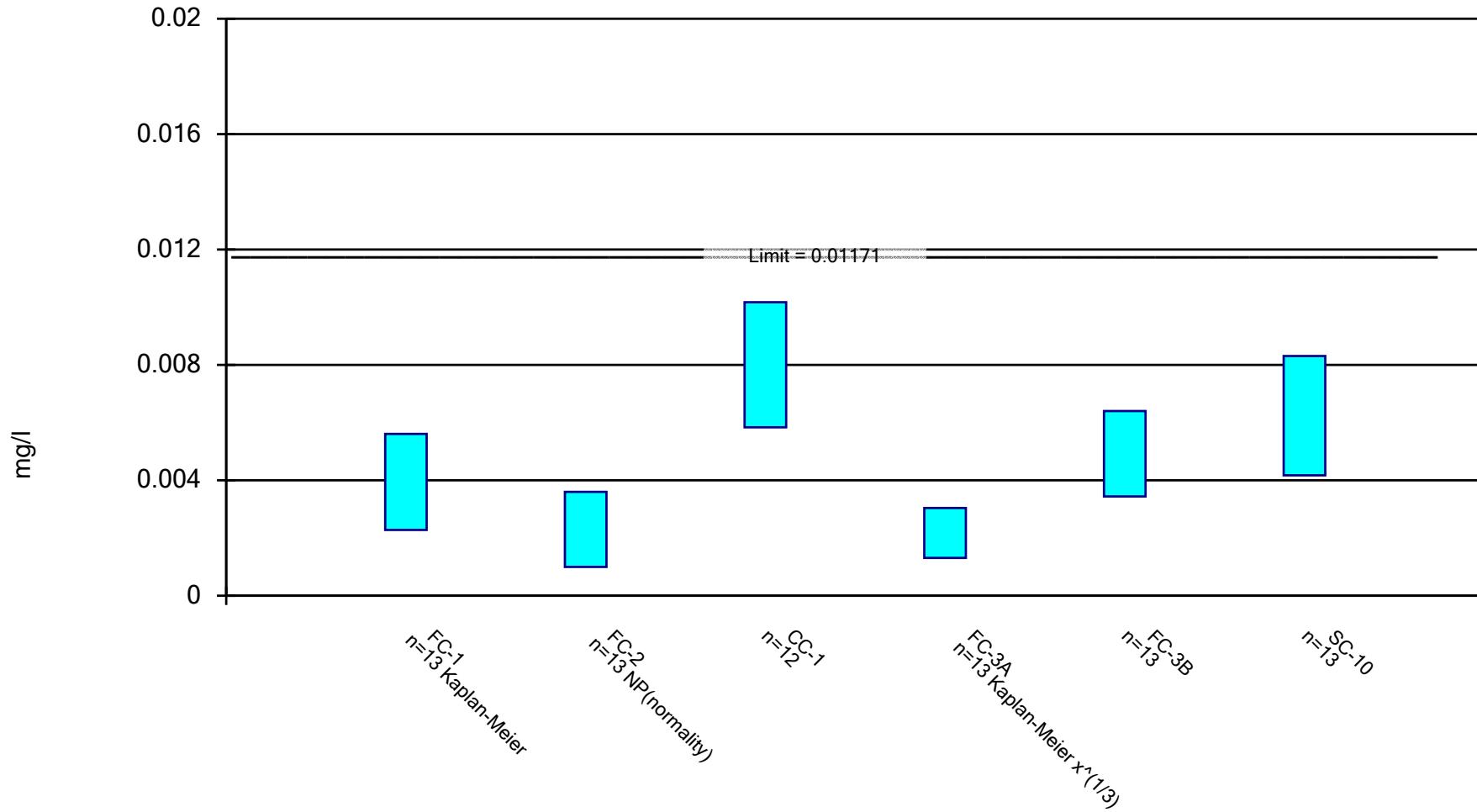
Confidence Interval

Constituent: Antimony, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.0002	<0.0002	<0.0002	0.00021
8/3/2016	<0.0002	<0.0002	<0.0002	<0.0002
9/20/2016	<0.0002 (D1)	<0.0002 (D1)	0.0002 (D)	0.00022 (D)
10/13/2016	0.0002 (D)	0.00023 (D)	<0.0002 (D1)	<0.0002 (D1)
11/16/2016	0.00094 (D)	0.00093 (D)	0.00059 (D)	<0.0002 (D1)
1/19/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
2/15/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
3/1/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
11/14/2017	<0.0005 (D1)	<0.0005 (D1)	0.0071 (DT)	<0.0005 (D1)
2/15/2018	<0.008	<0.008	<0.0008	<0.0008
9/26/2018	<0.0005	<0.0005	<0.0005 (D)	<0.0005
5/15/2019	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
9/24/2019		<0.0005 (D1D)		
9/25/2019		<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
Mean	0.001018	0.00102	0.0009454	0.00041
Std. Dev.	0.002108	0.002107	0.001858	0.0001865
Upper Lim.	0.00094	0.00093	0.0008	0.0008
Lower Lim.	0.0002	0.0002	0.0002	0.0002

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

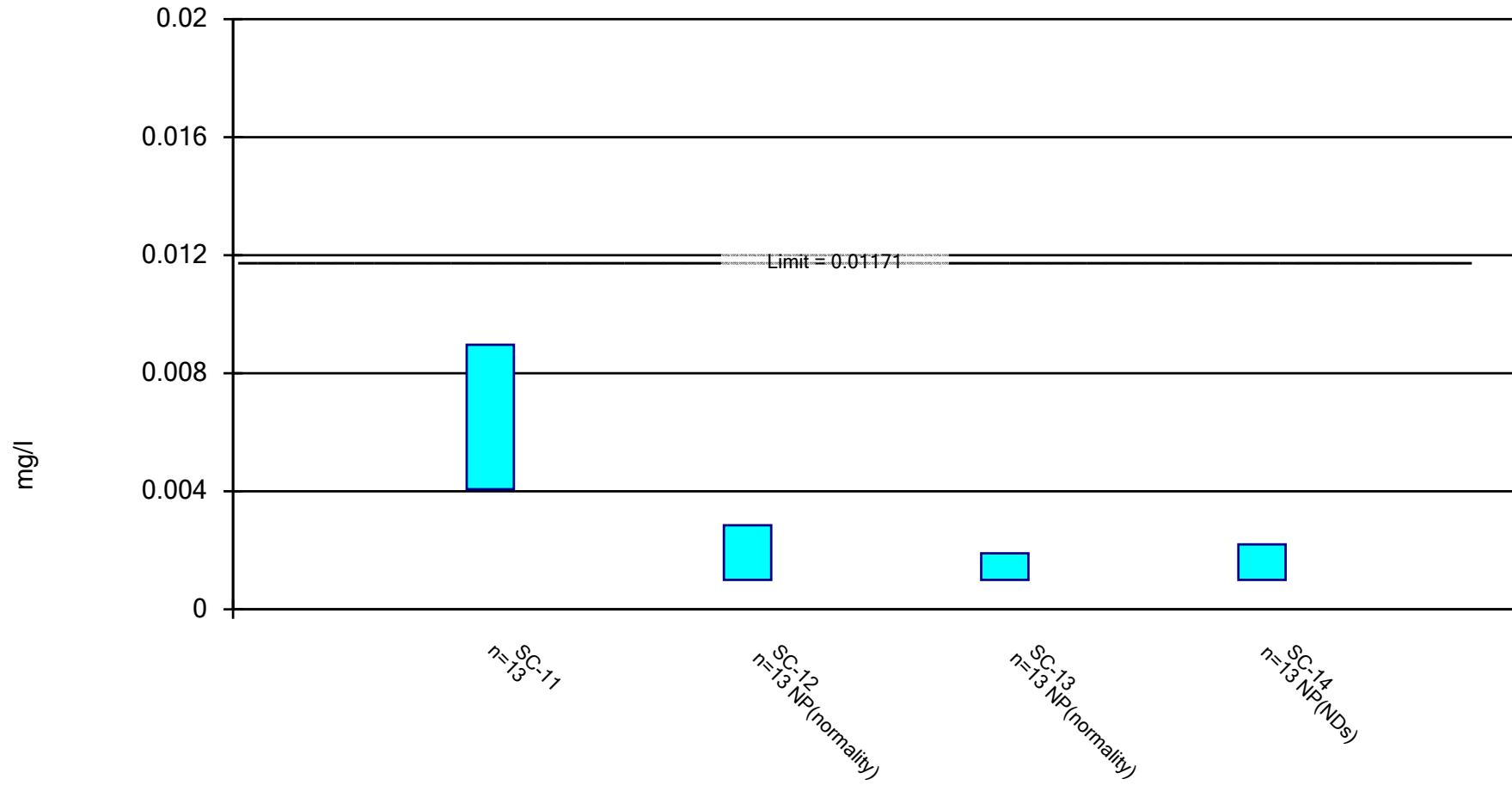
Confidence Interval

Constituent: Arsenic, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.0042	0.0025	0.0109 (D)			0.0083
6/23/2016				0.0031		
6/27/2016					0.0026	
8/2/2016	0.0025 (D)	0.0016	0.0105	0.0021	0.0031	
8/3/2016						0.00625 (D)
9/19/2016	0.0094 (D)	0.0036 (D)	0.0089 (D)	0.0029 (D)	0.0051 (D)	
9/20/2016						0.0073 (D)
10/12/2016	0.0023 (D)	<0.001 (D1)	0.0071 (D)	0.001325 (D)	0.0056 (D)	
10/13/2016						0.0051 (D)
11/15/2016	0.0036 (D)	<0.001 (D1)	0.0054 (D)	0.0018 (D)	0.007 (D)	
11/16/2016						0.003 (D)
1/18/2017	0.0061 (D)	0.0011 (D)	0.00255 (D)	<0.001 (D1)	0.0057 (D)	
1/19/2017						0.0039 (D)
2/14/2017	<0.001 (D1)	<0.001 (D1)	0.00495 (D)	<0.001 (D1)	0.004 (D)	
2/15/2017						0.0054 (D)
2/28/2017	0.00625 (D)	0.0076 (D)	0.011 (D)	0.0069 (D)	0.0081 (D)	
3/1/2017						0.0126 (D)
11/13/2017	0.0041 (D)	0.0025 (D)	0.008 (D)	0.0022 (D)	0.0064 (D)	
11/14/2017						0.0095 (D)
2/14/2018	<0.002	<0.001		0.00115 (D)	0.0026	
2/15/2018						0.0022
9/25/2018	0.005 (D)	0.0014	0.0115	0.003	0.0074	
9/26/2018						0.0068
5/14/2019	0.0029	0.0013 (D)	0.0072 (D)	0.0017 (D)	0.002 (D)	
5/15/2019						0.0057 (D)
9/24/2019	0.00295 (D)	<0.001 (D1D)	0.0081 (D)	0.0016 (D)	0.0044 (D)	
9/25/2019						0.0051 (D)
Mean	0.004023	0.002046	0.008008	0.00229	0.004923	0.006242
Std. Dev.	0.002241	0.001853	0.002762	0.001567	0.001992	0.002779
Upper Lim.	0.005612	0.0036	0.01018	0.003042	0.006404	0.008308
Lower Lim.	0.00228	0.001	0.005841	0.001314	0.003442	0.004176

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

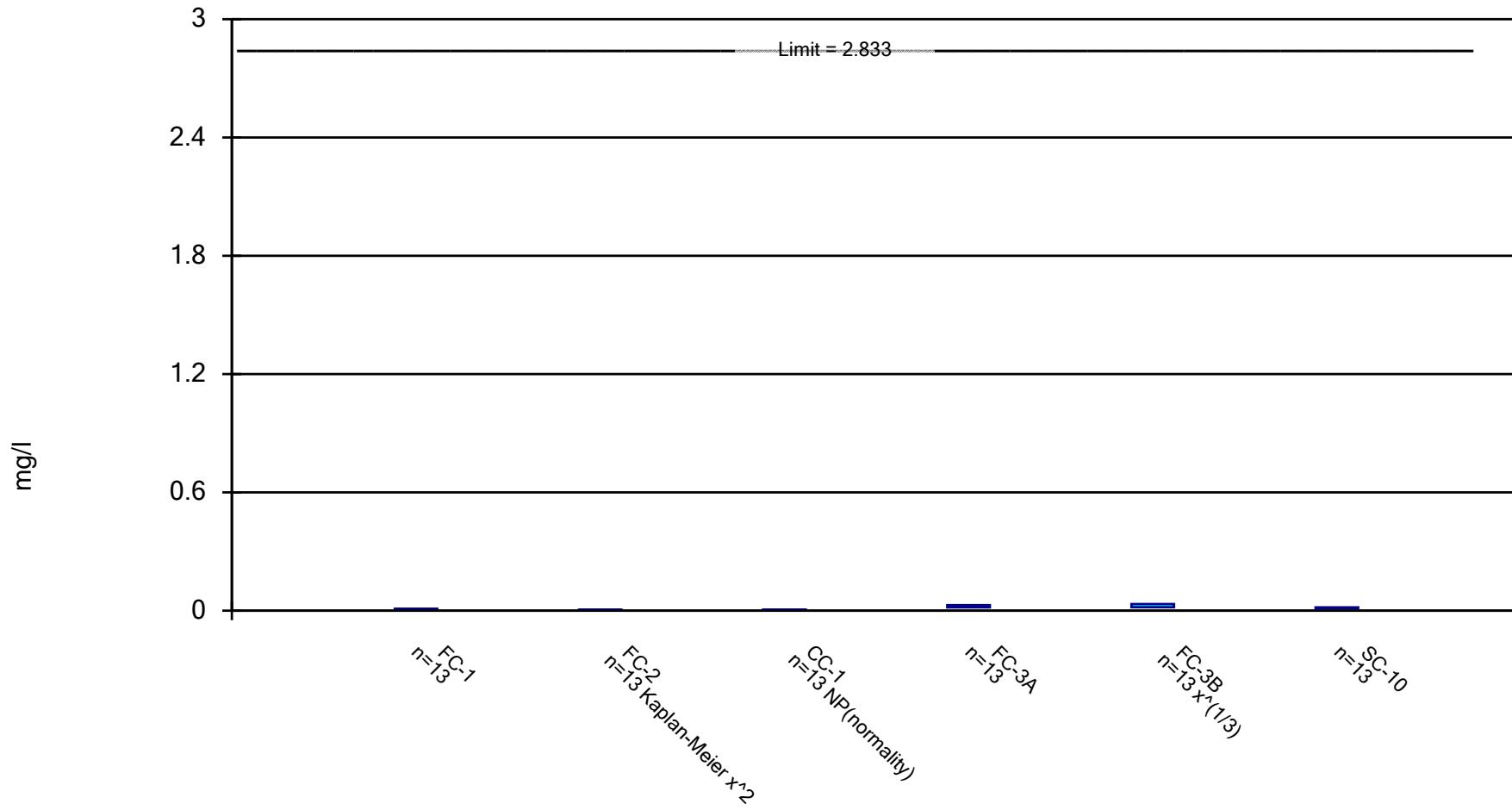
Confidence Interval

Constituent: Arsenic, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.0093	0.0017	0.0019	0.0022
8/3/2016	0.0095	0.0014	<0.001	<0.001
9/20/2016	0.00825 (D)	0.0026 (D)	0.0013 (D)	<0.001 (D1)
10/13/2016	0.0062 (D)	0.00285 (D)	0.0015 (D)	<0.001 (D1)
11/16/2016	<0.001 (D1)	0.0016 (D)	<0.001 (D)	<0.001 (D1)
1/19/2017	0.0033 (D)	<0.001 (D1)	<0.001 (D1)	<0.001 (D1)
2/15/2017	0.0046 (D)	<0.001 (D1)	<0.001 (D1)	<0.001 (D)
3/1/2017	0.0111 (D)	0.0067 (D)	0.0057 (D)	0.003 (D)
11/14/2017	0.0089 (D)	0.0027 (D)	0.0018 (D)	0.0011 (D)
2/15/2018	0.0021	0.0011	<0.001	<0.001
9/26/2018	0.0104	0.0013	<0.001 (D)	<0.001
5/15/2019	0.0051 (D)	0.00135 (D)	0.001 (D)	<0.001 (D)
9/24/2019		<0.001 (D1D)		
9/25/2019	0.005 (D)		0.00105 (D)	<0.001 (D1D)
Mean	0.006519	0.002023	0.001558	0.001254
Std. Dev.	0.003289	0.001554	0.001286	0.00062
Upper Lim.	0.008965	0.00285	0.0019	0.0022
Lower Lim.	0.004074	0.001	0.001	0.001

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

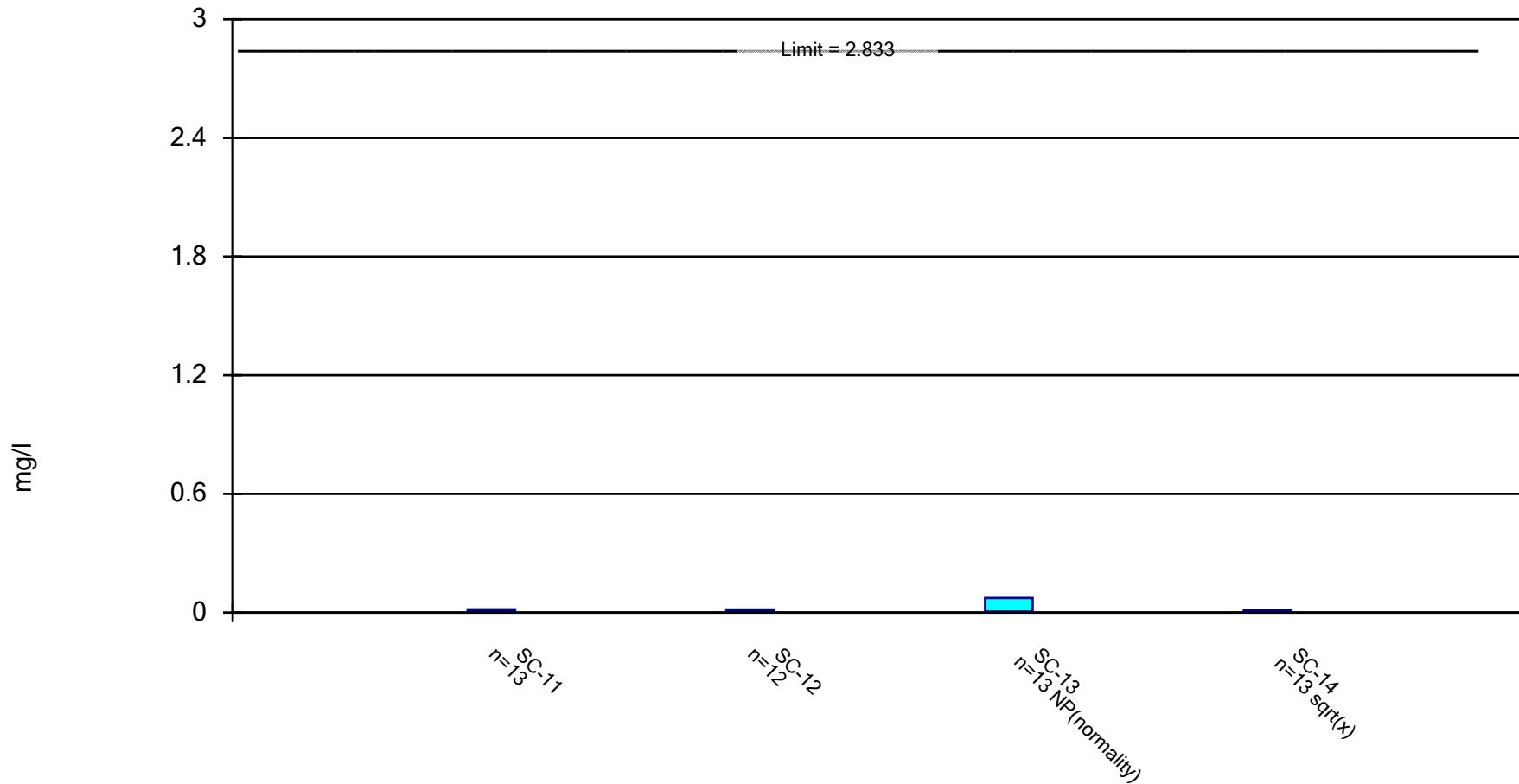
Confidence Interval

Constituent: Barium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.00954	0.00503	2.83285 (D)			0.0184
6/23/2016				0.034		
6/27/2016					0.0336	
8/2/2016	0.008725 (D)	<0.005	0.00512	0.0202	0.0253	
8/3/2016						0.0138 (D)
9/19/2016	0.00928	0.00525 (D)	0.00542	0.0218	0.0183	
9/20/2016						0.013
10/12/2016	0.00905	0.00536	0.00593	0.03735 (D)	0.0184	
10/13/2016						0.0141
11/15/2016	0.0102	0.00516	0.00608	0.01735 (D)	0.0652	
11/16/2016						0.0178
1/18/2017	0.00929	0.00539	0.005675 (D)	0.0164	0.0244	
1/19/2017						0.0216
2/14/2017	0.01	0.00566	0.006005 (D)	0.0167	0.023	
2/15/2017						0.0145 (D)
2/28/2017	0.009 (D)	0.0054	<0.005	0.0148	0.0208	
3/1/2017						0.0105
11/13/2017	0.0082 (D)	0.00435 (D)	0.004 (D)	0.0259 (D)	0.0154 (D)	
11/14/2017						0.014 (D)
2/14/2018	0.0105	<0.01	<0.01	0.01205 (D)	0.0196	
2/15/2018						0.0124
9/25/2018	0.00665 (D)	0.004	0.0039	0.021	0.037	
9/26/2018						0.0165
5/14/2019	0.0073	0.0043 (D)	0.0044 (D)	0.0265 (D)	0.0146 (D)	
5/15/2019						0.0168 (D)
9/24/2019	0.0073 (D)	0.0056 (D)	0.0041 (D)	0.0276 (D)	0.0268 (D)	
9/25/2019						0.0124 (D)
Mean	0.008849	0.004846	0.2224	0.02243	0.02634	0.01506
Std. Dev.	0.001186	0.0008747	0.7843	0.007529	0.0134	0.003023
Upper Lim.	0.00973	0.0054	0.00608	0.02803	0.03372	0.01731
Lower Lim.	0.007967	0.004584	0.0039	0.01684	0.01761	0.01281

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

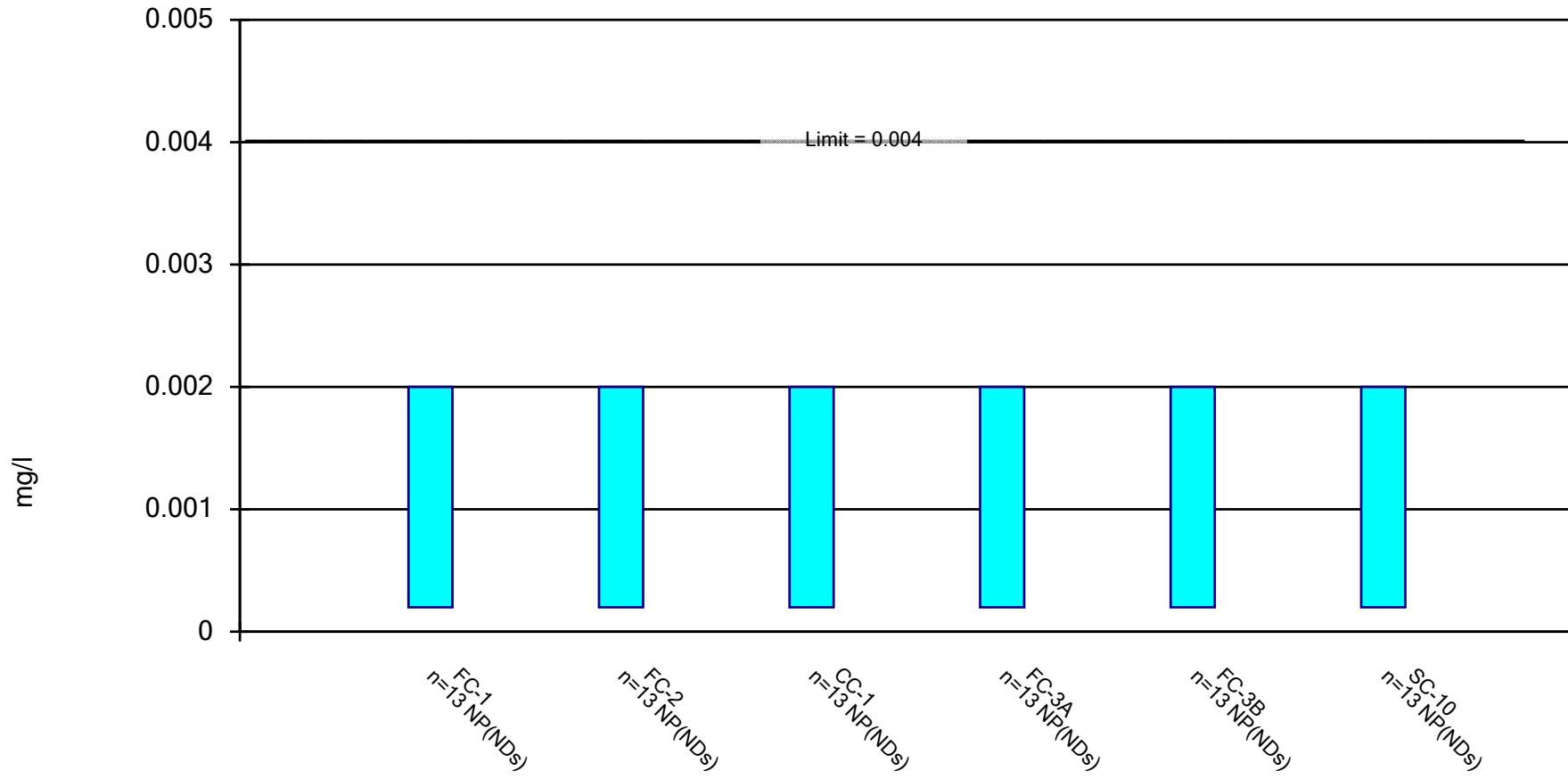
Confidence Interval

Constituent: Barium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.017	0.0112	0.00979	0.024
8/3/2016	0.0165	0.0133	0.00703	0.0131
9/20/2016	0.009275 (D)		0.0736	0.0109
10/13/2016	0.0225	0.01415 (D)	0.00797	0.0163
11/16/2016	0.016	0.0178	4.629645 (D)	0.0136
1/19/2017	0.0117	0.0108	0.0075	0.00905
2/15/2017	0.0156	0.0127	0.00742	0.00766
3/1/2017	0.00732	0.00781 (D)	0.00603	0.0063
11/14/2017	0.01395 (D)	0.0063 (D)	0.006 (D)	0.0052 (D)
2/15/2018	0.0089	0.0079	<0.01	<0.01
9/26/2018	0.0099	0.0245	0.00575 (D)	0.0057
5/15/2019	0.0086 (D)	0.00755 (D)	0.0046 (D)	0.005 (D)
9/24/2019		0.007 (D)		
9/25/2019	0.0099 (D)		0.0168 (D)	0.0049 (D)
Mean	0.01286	0.01175	0.3682	0.009747
Std. Dev.	0.004455	0.005306	1.281	0.005743
Upper Lim.	0.01617	0.01591	0.0736	0.01328
Lower Lim.	0.009545	0.007588	0.005	0.005687

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

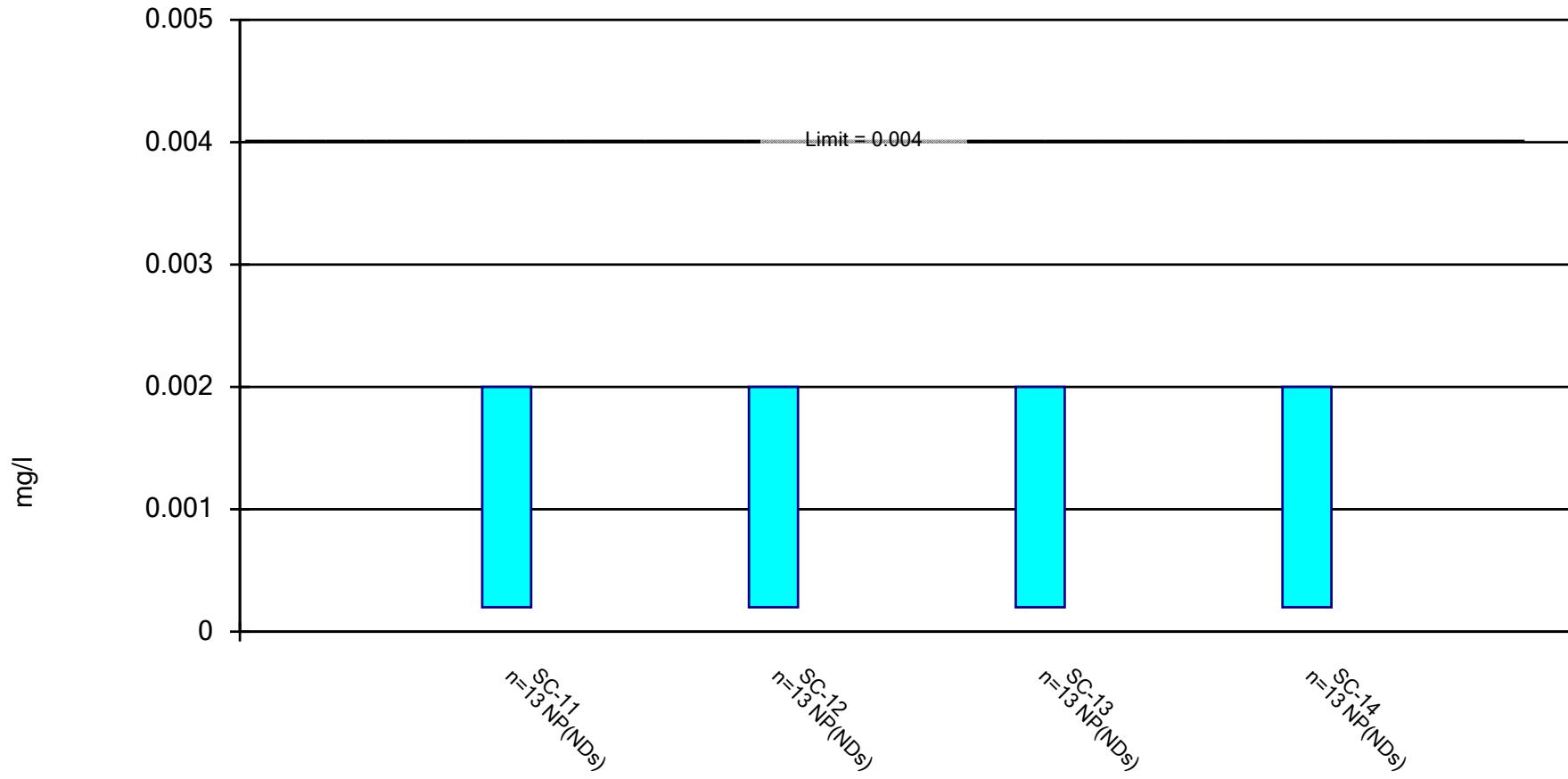
Confidence Interval

Constituent: Beryllium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

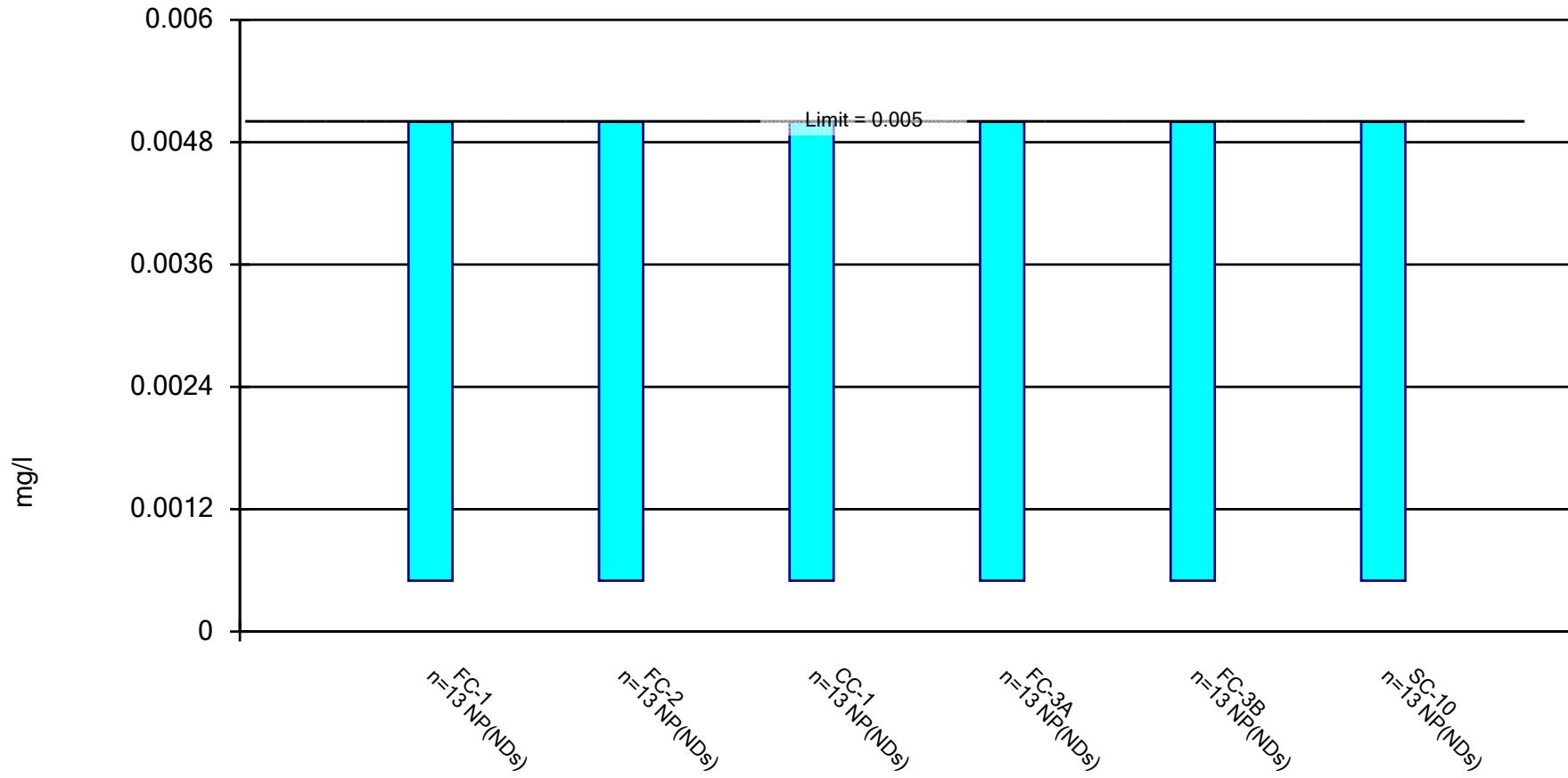
Confidence Interval

Constituent: Beryllium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.002	<0.002	<0.002	<0.002
8/3/2016	<0.002	<0.002	<0.002	<0.002
9/20/2016	<0.002 (D)	<0.002	<0.002	<0.002
10/13/2016	<0.002	<0.002 (D)	<0.002	<0.002
11/16/2016	<0.002	<0.002	<0.002 (D)	<0.002
1/19/2017	<0.002	<0.002	<0.002	<0.002
2/15/2017	<0.002	<0.002	<0.002	<0.002
3/1/2017	<0.002	<0.002 (D)	<0.002	<0.002
11/14/2017	<0.0002 (D1)	<0.0002 (D1)	0.00021 (D)	<0.0002 (D1)
2/15/2018	<0.002	<0.002	<0.001 (T)	<0.001 (T)
9/26/2018	<0.0002	<0.0002	<0.0002 (D)	<0.0002
5/15/2019	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)
9/24/2019		<0.0002 (D1D)		
9/25/2019		<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)
Mean	0.001446	0.001446	0.00137	0.001369
Std. Dev.	0.0008647	0.0008647	0.0008546	0.0008557
Upper Lim.	0.002	0.002	0.002	0.002
Lower Lim.	0.0002	0.0002	0.0002	0.0002

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cadmium, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

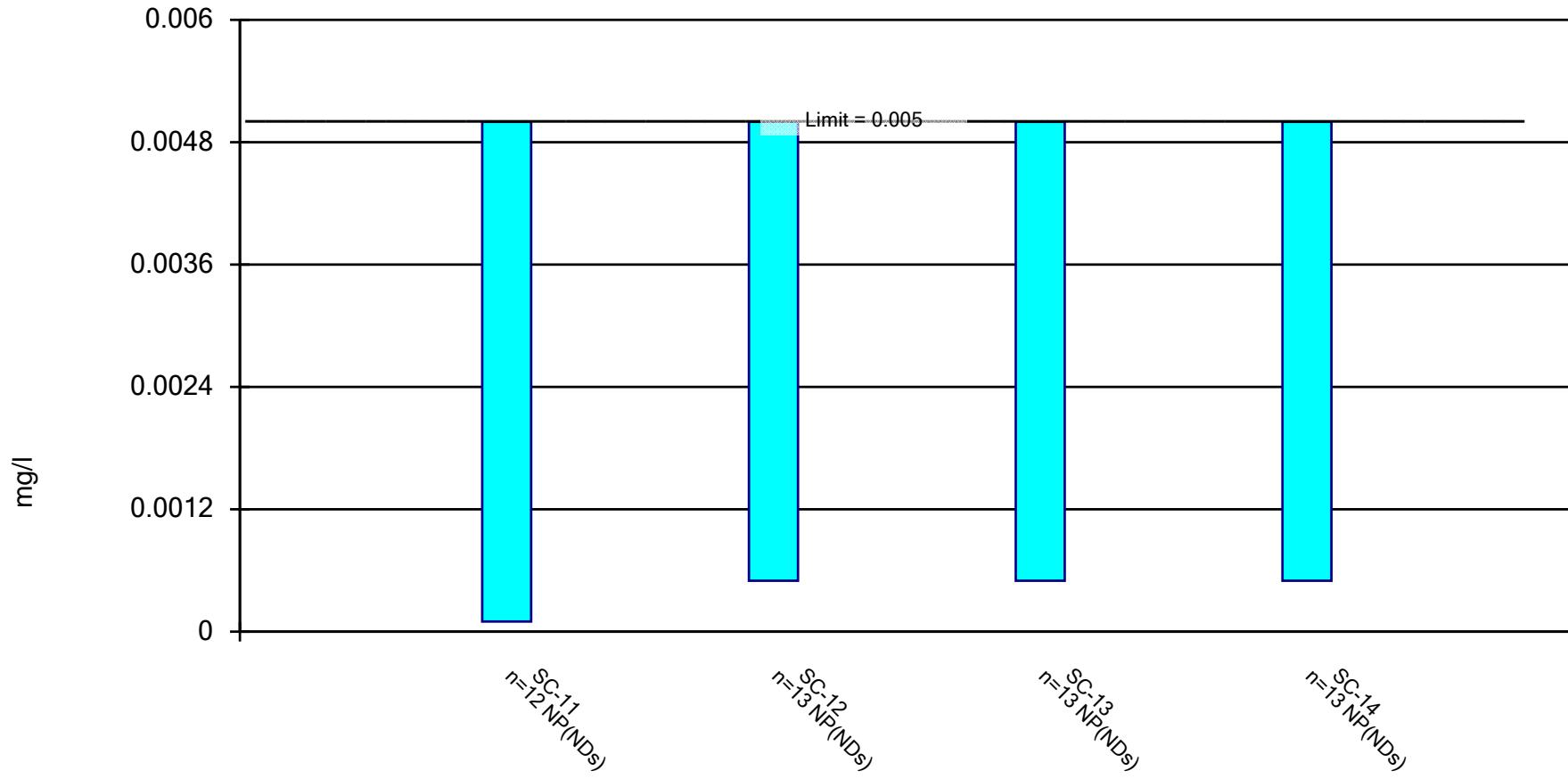
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

Constituent: Cadmium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDE Master Database

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cadmium, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

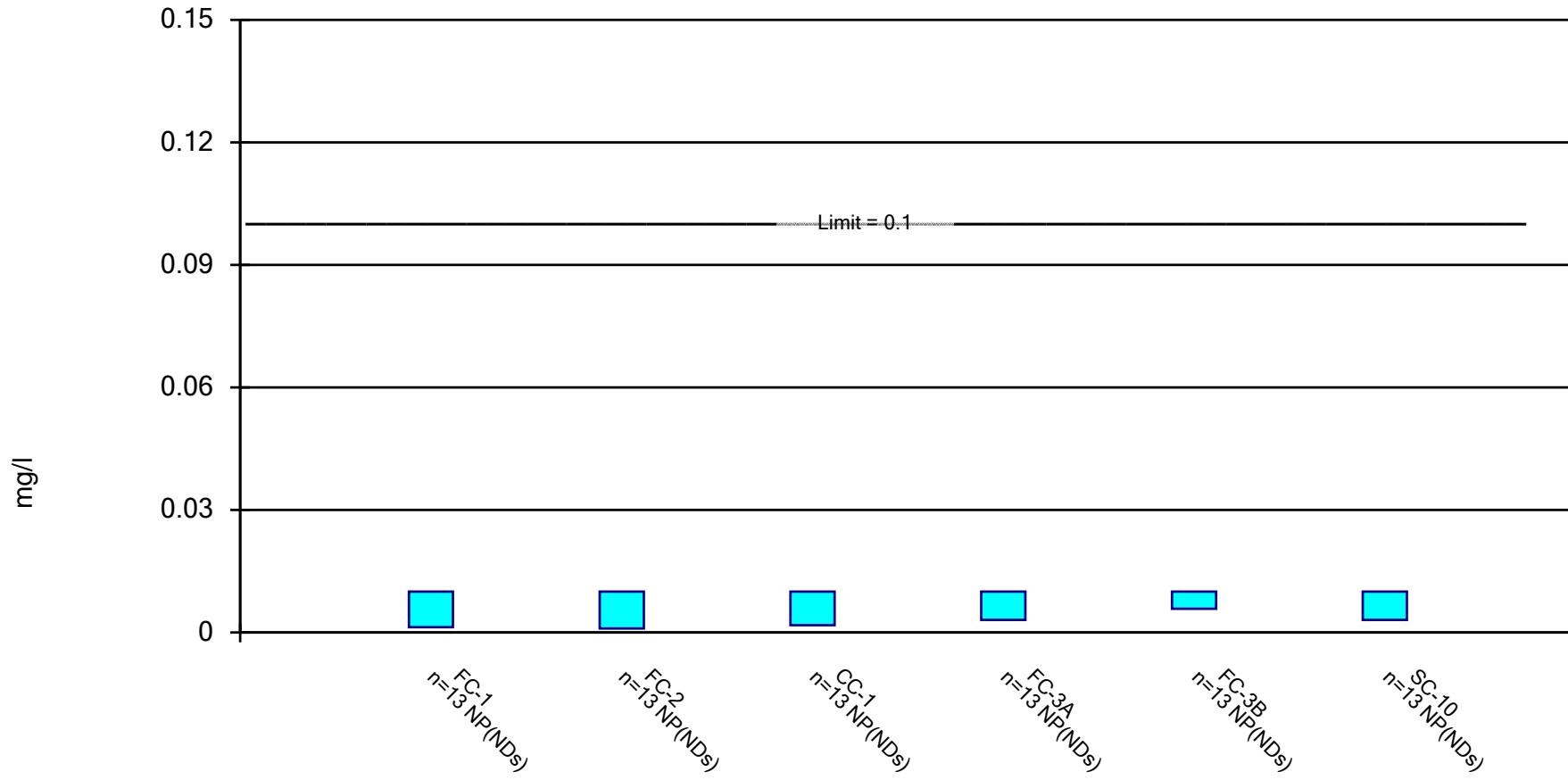
Confidence Interval

Constituent: Cadmium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.005	<0.005	<0.005	<0.005
8/3/2016		<0.005	<0.005	<0.005
9/20/2016	<0.005 (D)	<0.005	<0.005	<0.005
10/13/2016	<0.005	<0.005 (D)	<0.005	<0.005
11/16/2016	<0.005	<0.005	<0.005 (D)	<0.005
1/19/2017	<0.005	<0.005	<0.005	<0.005
2/15/2017	<0.005	<0.005	<0.005	<0.005
3/1/2017	<0.005	<0.005 (D)	<0.005	<0.005
11/14/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
2/15/2018	<0.0001	<0.0001	<0.001	<0.001
9/26/2018	<0.0005	<0.0005	<0.0005 (D)	<0.0005
5/15/2019	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
9/24/2019		<0.0005 (D1D)		
9/25/2019	<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)
Mean	0.003092	0.003238	0.003308	0.003308
Std. Dev.	0.002361	0.002321	0.002232	0.002232
Upper Lim.	0.005	0.005	0.005	0.005
Lower Lim.	0.0001	0.0005	0.0005	0.0005

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium, Total Analysis Run 1/13/2020 11:51 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

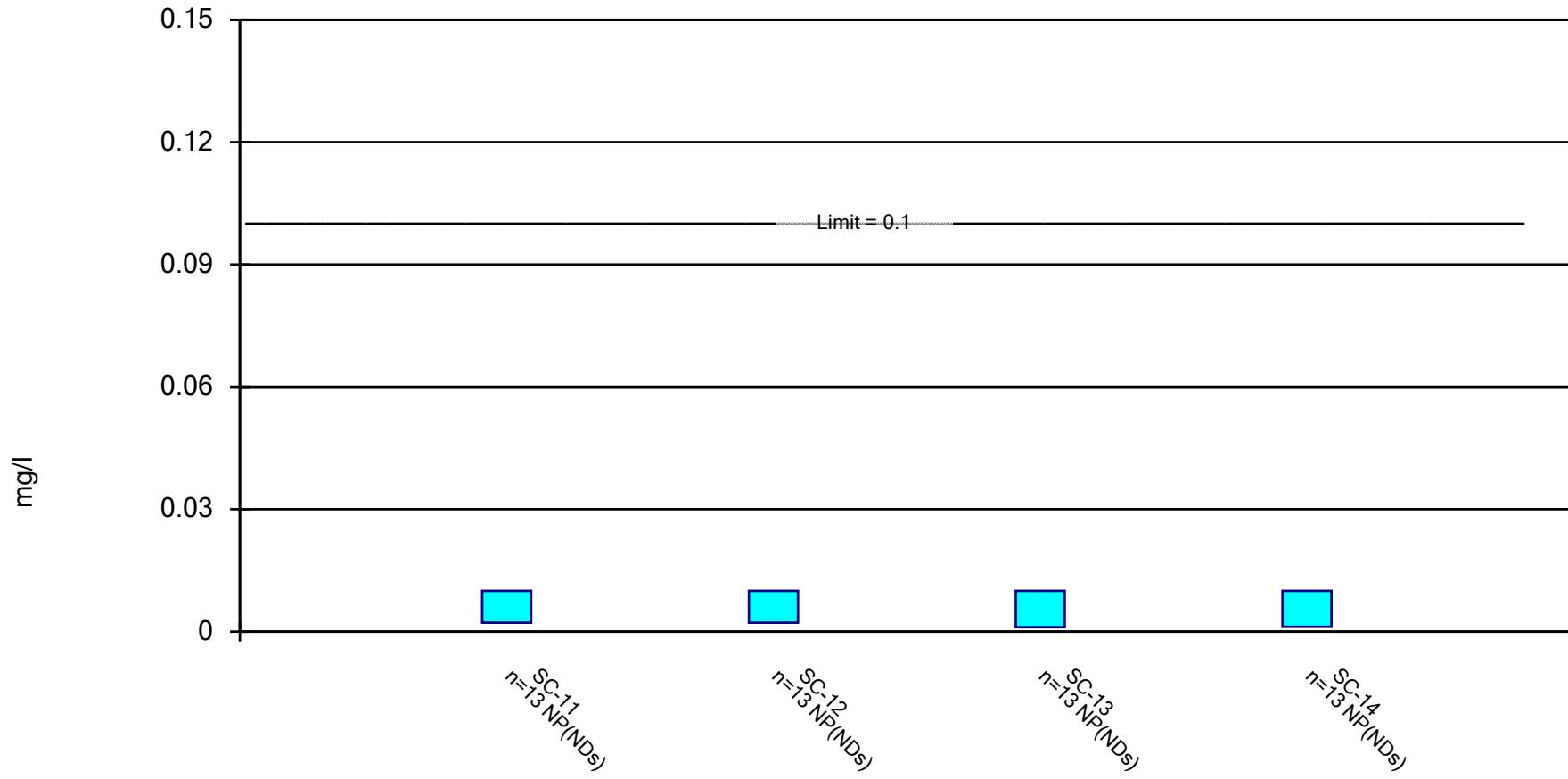
Confidence Interval

Constituent: Chromium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.01	<0.01	<0.01 (D)			<0.01
6/23/2016				<0.01		
6/27/2016					<0.01	
8/2/2016	<0.01 (D)	<0.01	<0.01	<0.01	<0.01	
8/3/2016						<0.01 (D)
9/19/2016	<0.01	<0.01 (D)	<0.01	<0.01	<0.01	
9/20/2016						<0.01
10/12/2016	<0.01	<0.01	<0.01	<0.01 (D)	<0.01	
10/13/2016						<0.01
11/15/2016	<0.01	<0.01	<0.01	<0.01 (D)	<0.01	
11/16/2016						<0.01
1/18/2017	<0.01	<0.01	<0.01 (D)	<0.01	<0.01	
1/19/2017						<0.01
2/14/2017	<0.01	<0.01	<0.01 (D)	<0.01	<0.01	
2/15/2017						<0.01 (D)
2/28/2017	<0.01 (D)	<0.01	<0.01	<0.01	<0.01	
3/1/2017						<0.01
11/13/2017	0.006 (D)	0.0051 (D)	0.0064 (D)	0.0062 (D)	0.0086 (D)	
11/14/2017						0.0061 (D)
2/14/2018	<0.004	<0.004	<0.004	<0.004 (D)	0.0058	
2/15/2018						<0.004
9/25/2018	0.001 (D)	0.001	0.0017	0.0025	0.0061	
9/26/2018						0.0019
5/14/2019	0.0013	<0.001 (D)	0.0018 (D)	0.0031 (D)	0.0049 (D)	
5/15/2019						0.0031 (D)
9/24/2019	0.0042 (D)	0.0035 (D)	0.0036 (D)	0.0054 (D)	0.0089 (D)	
9/25/2019						0.0049 (D)
Mean	0.007423	0.007277	0.0075	0.007785	0.008792	0.007692
Std. Dev.	0.003606	0.00374	0.003474	0.00305	0.001894	0.003178
Upper Lim.	0.01	0.01	0.01	0.01	0.01	0.01
Lower Lim.	0.0013	0.001	0.0018	0.0031	0.0058	0.0031

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

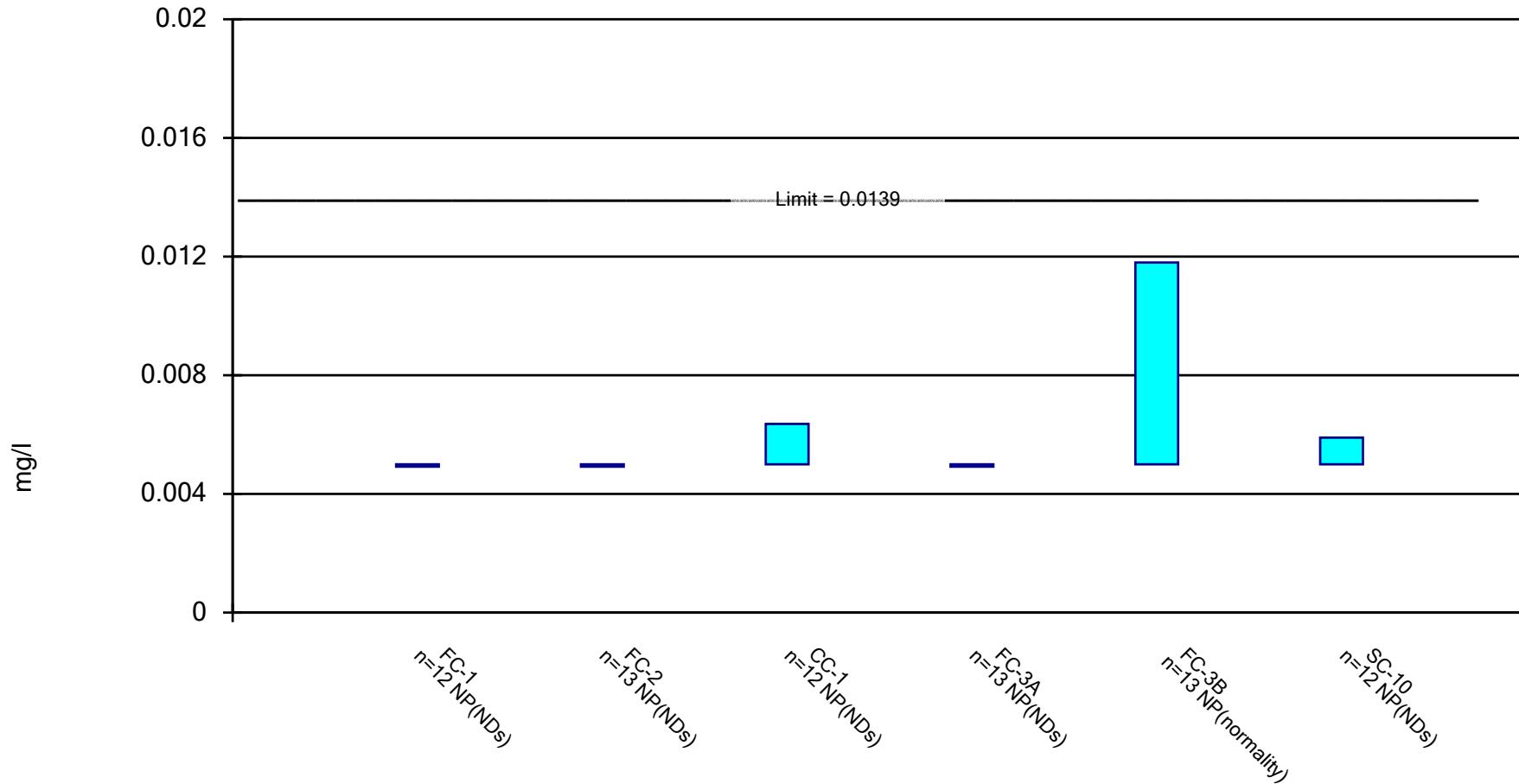
Constituent: Chromium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.01	<0.01	<0.01	<0.01
8/3/2016	<0.01	<0.01	<0.01	<0.01
9/20/2016	<0.01 (D)	<0.01	<0.01	<0.01
10/13/2016	<0.01	<0.01 (D)	<0.01	<0.01
11/16/2016	<0.01	<0.01	<0.01 (D)	<0.01
1/19/2017	<0.01	<0.01	<0.01	<0.01
2/15/2017	<0.01	<0.01	<0.01	<0.01
3/1/2017	<0.01	<0.01 (D)	<0.01	<0.01
11/14/2017	0.0075 (D)	0.0069 (D)	0.0029 (D)	0.0066 (D)
2/15/2018	<0.004	<0.004	<0.004	<0.004
9/26/2018	0.0012	0.0022	<0.001 (D)	<0.001
5/15/2019	0.0022 (D)	0.00185 (D)	0.0011 (D)	0.0012 (D)
9/24/2019		0.0043 (D)		
9/25/2019	0.0048 (D)		0.0049 (D)	0.0041 (D)
Mean	0.007669	0.007635	0.007223	0.007454
Std. Dev.	0.003378	0.003324	0.00379	0.003612
Upper Lim.	0.01	0.01	0.01	0.01
Lower Lim.	0.0022	0.0022	0.0011	0.0012

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cobalt, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

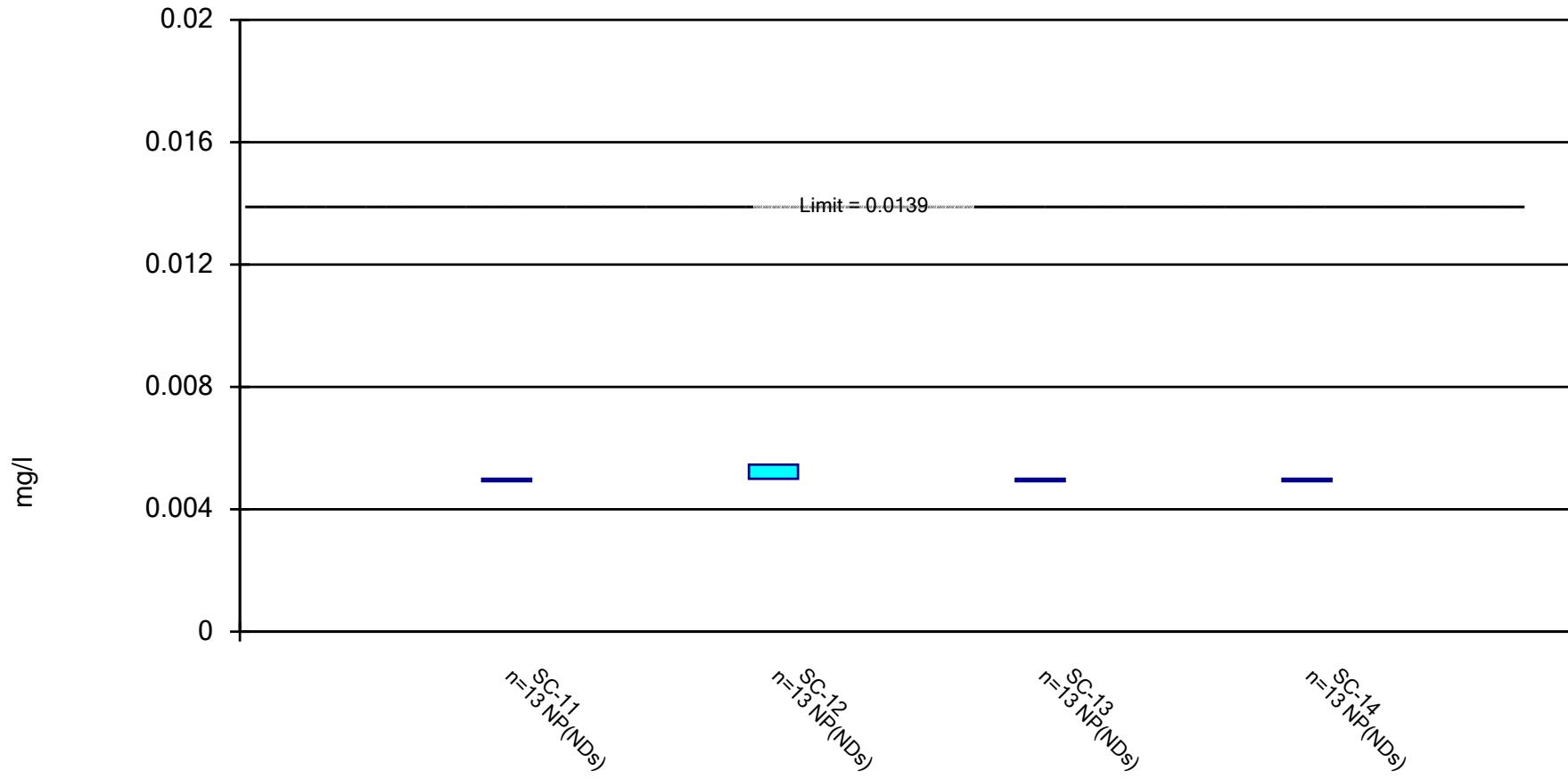
Confidence Interval

Constituent: Cobalt, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.005	<0.005	<0.005 (D)			<0.005
6/23/2016				<0.005		
6/27/2016					0.0078	
8/2/2016	<0.005 (D)	<0.005		<0.005	0.005	
8/3/2016						<0.005 (D)
9/19/2016	<0.005	<0.005 (D)	<0.005	<0.005	<0.005	
10/12/2016	<0.005	<0.005	<0.005	<0.005 (D)	<0.005	
10/13/2016						<0.005
11/15/2016	<0.005	<0.005	<0.005	<0.005 (D)	0.00736	
11/16/2016						<0.005
1/18/2017	<0.005	<0.005	<0.005 (D)	<0.005	0.00778	
1/19/2017						<0.005
2/14/2017	<0.005	<0.005	<0.005 (D)	<0.005	0.00796	
2/15/2017						<0.005 (D)
2/28/2017	<0.005 (D)	<0.005	<0.005	<0.005	0.00553	
3/1/2017						<0.005
11/13/2017	<0.005	<0.005 (D)	<0.005	<0.005	0.0118	
11/14/2017						<0.005
2/14/2018		<0.005	0.00636	<0.005 (D)	0.0139	
2/15/2018						0.0059
9/25/2018	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)	0.0108 (D)	
9/26/2018						<0.005 (DD1)
5/14/2019	<0.005	<0.005	<0.005	<0.005 (D)	<0.005	
5/15/2019						<0.005
9/24/2019	<0.005 (D)	<0.005	<0.005	<0.005	<0.005	
9/25/2019						<0.005
Mean	0.005	0.005	0.005113	0.005	0.007533	0.005075
Std. Dev.	0	0	0.0003926	0	0.00297	0.0002598
Upper Lim.	0.005	0.005	0.00636	0.005	0.0118	0.0059
Lower Lim.	0.005	0.005	0.005	0.005	0.005	0.005

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cobalt, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

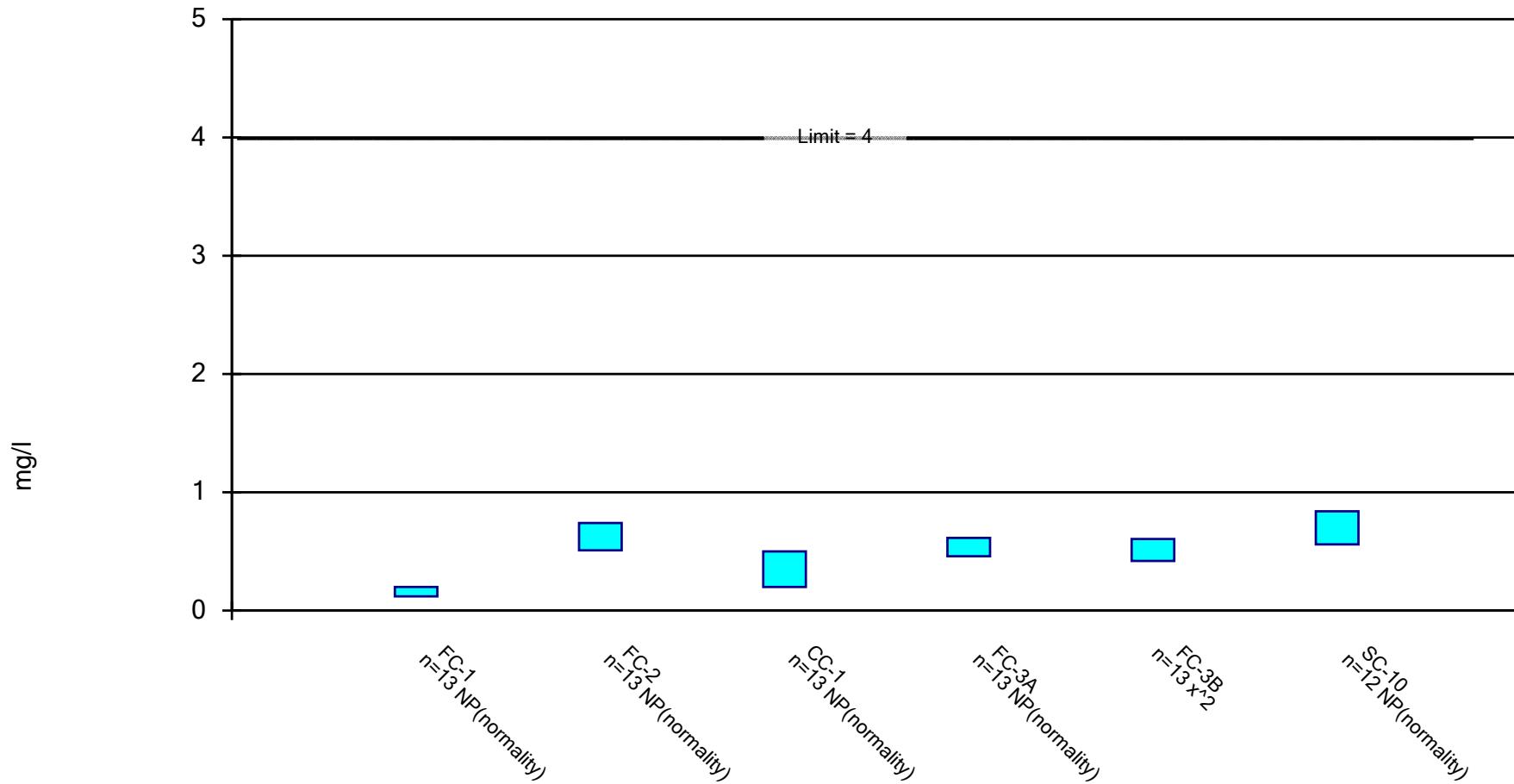
Confidence Interval

Constituent: Cobalt, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.005	<0.005	<0.005	<0.005
8/3/2016	0.005	<0.005	<0.005	<0.005
9/20/2016	<0.005 (D)	<0.005	<0.005	<0.005
10/13/2016	<0.005	<0.005 (D)	<0.005	<0.005
11/16/2016	<0.005	<0.005	<0.005 (D)	<0.005
1/19/2017	<0.005	<0.005	<0.005	<0.005
2/15/2017	<0.005	<0.005	<0.005	<0.005
3/1/2017	<0.005	<0.005 (D)	<0.005	<0.005
11/14/2017	<0.005 (D)	<0.005	<0.005	<0.005
2/15/2018	0.00525	0.00546	<0.005	<0.005
9/26/2018	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)
5/15/2019	<0.005	<0.005	<0.005	<0.005
9/24/2019		<0.005		
9/25/2019	<0.005		<0.005 (D)	<0.005
Mean	0.005019	0.005035	0.005	0.005
Std. Dev.	6.934E-05	0.0001276	0	0
Upper Lim.	0.005	0.00546	0.005	0.005
Lower Lim.	0.005	0.005	0.005	0.005

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

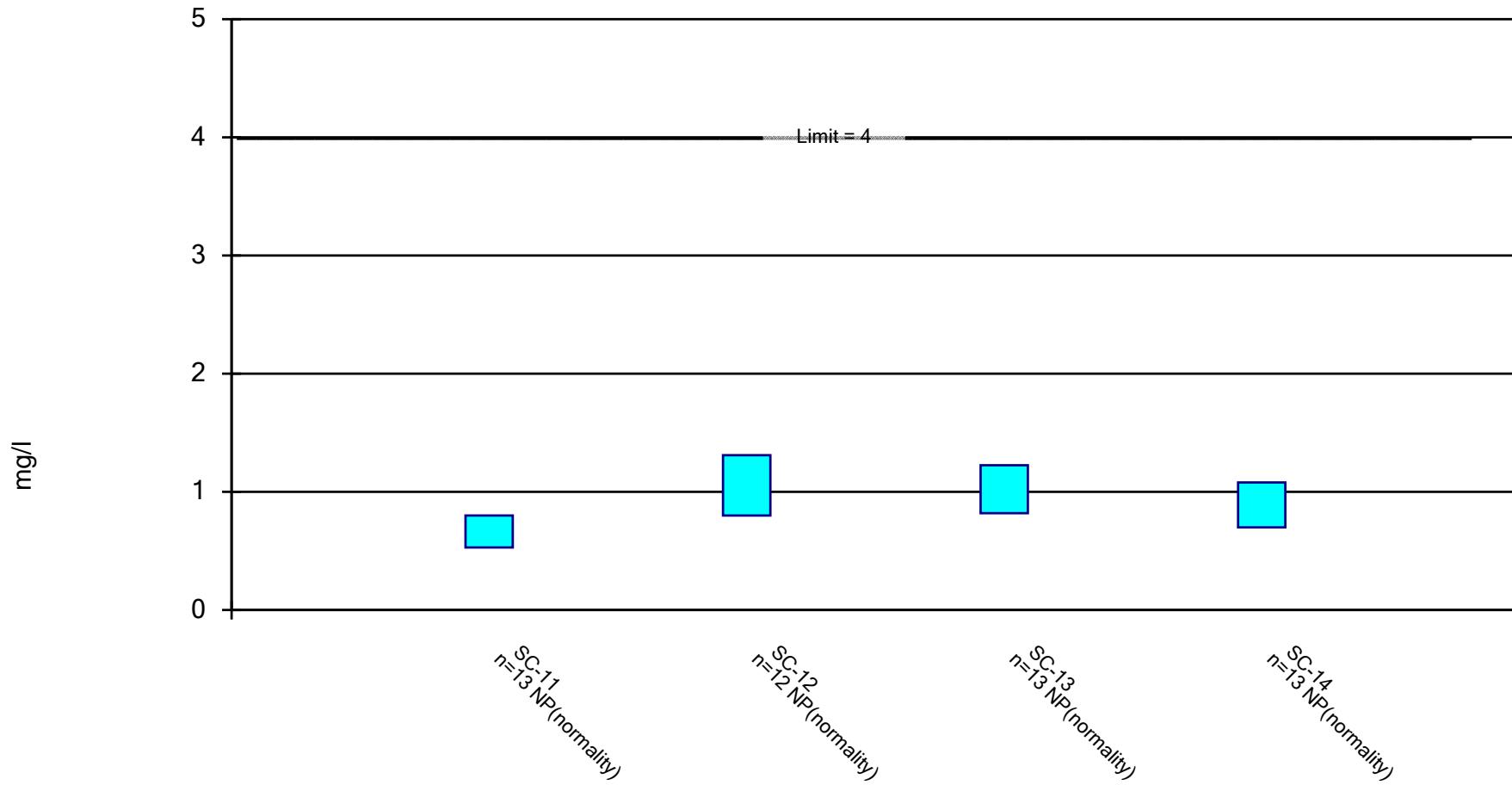
Confidence Interval

Constituent: Fluoride, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.12 (T)	0.51 (T)	0.215 (TD)			0.59 (T)
6/23/2016				0.46 (T)		
6/27/2016					0.55	
8/2/2016	0.06006 (TD)	0.5 (T)	0.21 (T)	0.46 (T)	0.00048 (T)	
8/3/2016						0.585 (TD)
9/19/2016	0.13	0.985 (D)	0.22	0.48	0.48	
9/20/2016						0.56
10/12/2016	0.12 (T)	0.52 (T)	0.21 (T)	0.465 (TD)	0.51 (T)	
10/13/2016						0.61 (T)
11/15/2016	0.12 (T)	0.51 (T)	0.2 (T)	0.46 (TD)	0.46 (T)	
11/16/2016						0.57 (T)
1/18/2017	0.13 (T)	0.52 (T)	0.2 (TD)	0.46 (T)	0.56 (T)	
1/19/2017						0.56 (T)
2/14/2017	0.13 (T)	0.55 (T)	0.22 (TD)	0.48 (T)	0.51 (T)	
2/15/2017						0.575 (TD)
2/28/2017	0.13 (TD)	0.53 (T)	0.22 (T)	0.47 (T)	0.42 (T)	
3/1/2017						0.57 (T)
11/13/2017	0.2	0.7 (D)	0.45	0.56	0.48	
11/14/2017						0.82
2/14/2018	0.21	0.74	0.5	0.615 (D)	0.53	
2/15/2018						0.84
9/25/2018	0.195 (D)	0.73	0.48	0.62	0.52	
5/14/2019	0.13	0.51	0.2	0.44 (D)	0.69	
5/15/2019						0.54
9/24/2019	0.195 (D)	0.72	0.53	0.59	0.72	
9/25/2019						0.85
Mean	0.1439	0.6173	0.2965	0.5046	0.4947	0.6392
Std. Dev.	0.04325	0.1471	0.1355	0.06581	0.1708	0.1205
Upper Lim.	0.2	0.74	0.5	0.615	0.6054	0.84
Lower Lim.	0.12	0.51	0.2	0.46	0.4203	0.56

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Fluoride, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

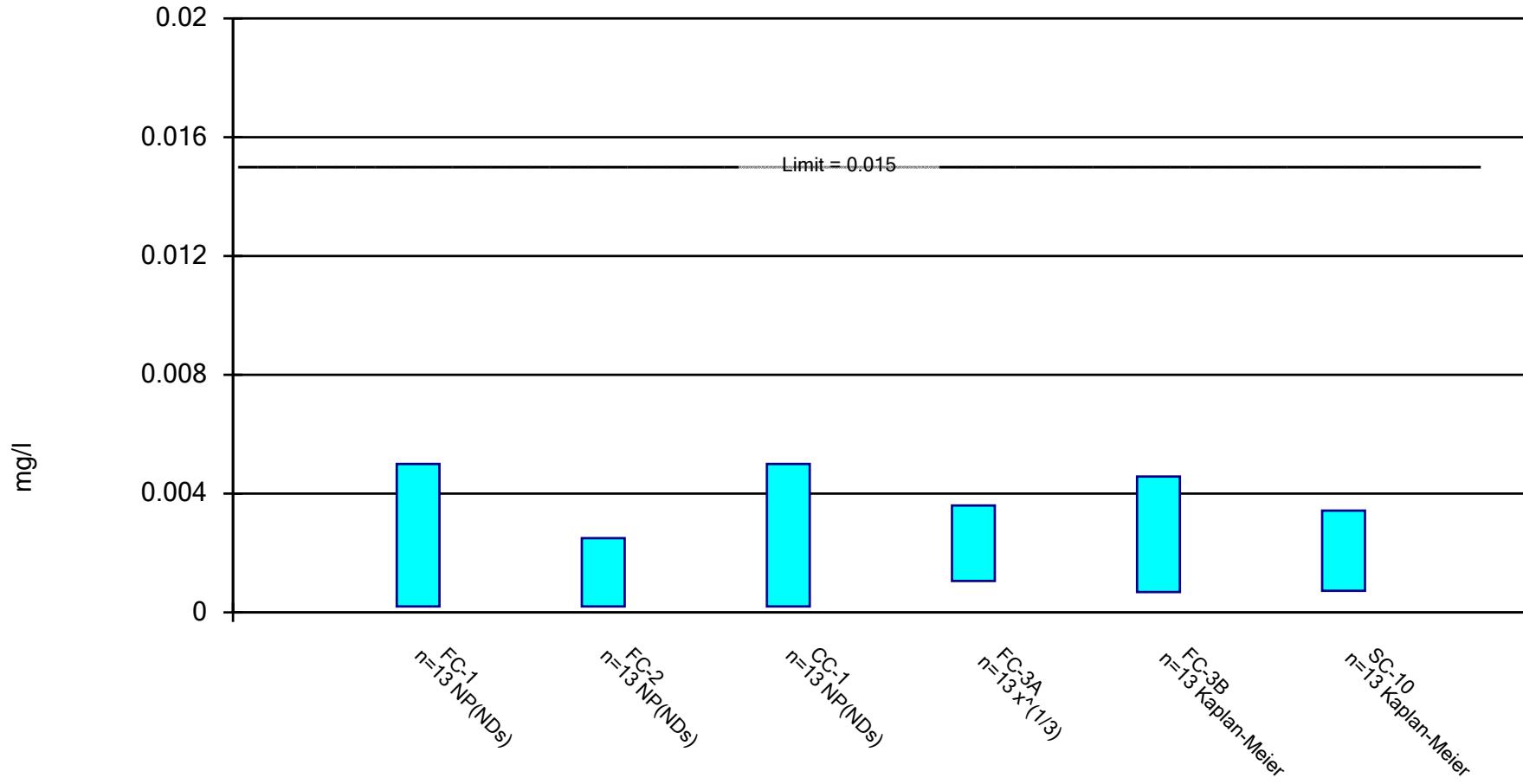
Constituent: Fluoride, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.56 (T)	0.79 (T)	0.83 (T)	0.73 (T)
8/3/2016	0.54 (T)	0.82 (T)	0.82 (T)	0.72 (T)
9/20/2016	0.53 (D)	0.82	1.22 (D)	0.7
10/13/2016	0.57 (T)	0.885 (TD)	0.9 (T)	0.77 (T)
11/16/2016	0.53 (T)	0.84 (T)	0.84 (D)	0.72 (T)
1/19/2017	0.53 (T)	0.84 (T)	0.86 (T)	0.74 (T)
2/15/2017	0.55 (T)		0.86 (T)	0.74 (T)
3/1/2017	0.54 (T)	0.84 (TD)	0.84 (T)	0.74 (T)
11/14/2017	0.765 (D)	1.27	1.21	1.06
2/15/2018	0.77	1.26	1.2	1.06
9/26/2018	0.8	1.31	1.275 (D)	1.11
5/15/2019	0.53	0.8 (D)	0.77	0.69
9/24/2019		1.37		
9/25/2019	0.81		1.225 (D)	1.08
Mean	0.6173	0.9871	0.9885	0.8354
Std. Dev.	0.1184	0.2356	0.1982	0.1695
Upper Lim.	0.8	1.31	1.225	1.08
Lower Lim.	0.53	0.8	0.82	0.7

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

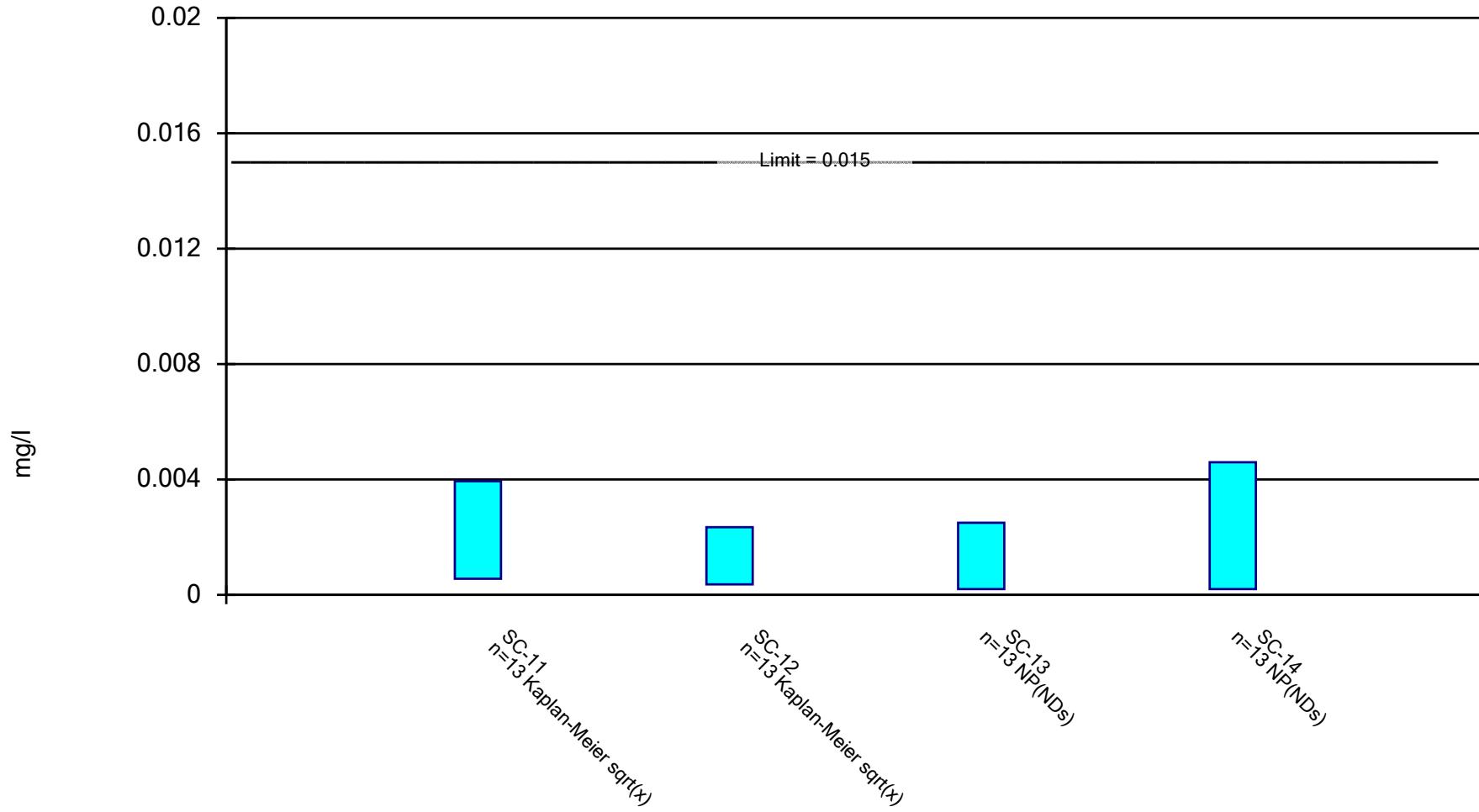
Confidence Interval

Constituent: Lead, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.0002	0.0002	<0.0002 (D)			0.0041
6/23/2016				0.0052		
6/27/2016					0.0039	
8/2/2016	<0.0002 (D)	<0.0002	<0.0002	0.0015	0.0021	
8/3/2016						0.0017 (D)
9/19/2016	0.00032 (D)	<0.0002 (D1)	<0.0002 (D1)	0.001 (D)	0.00042 (D)	
9/20/2016						0.00091 (D)
10/12/2016	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	0.000835 (D)	<0.0002 (D1)	
10/13/2016						0.00044 (D)
11/15/2016	0.0037 (D)	<0.0002 (D1)	0.0052 (D)	0.0031 (D)	0.0065 (D)	
11/16/2016						0.0063 (D)
1/18/2017	<0.0005 (D1)	<0.0005 (D1)	0.0035 (D)	0.0035 (D)	0.0035 (D)	
1/19/2017						0.0041 (D)
2/14/2017	0.0027 (D)	0.0018 (D)	0.0028 (D)	0.0017 (D)	0.00099 (D)	
2/15/2017						0.00275 (D)
2/28/2017	0.0081 (D)	0.0089 (D)	0.0049 (D)	0.009	0.0089 (D)	
3/1/2017						0.0046 (D)
11/13/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	0.00091 (D)	<0.0005 (D1)	
11/14/2017						0.0011 (D)
2/14/2018	<0.005	<0.0025	<0.005	<0.0025 (D)	<0.0025	
2/15/2018						<0.005
9/25/2018	<0.0005 (D)	<0.0005	<0.0005	0.00086	0.0046	
9/26/2018						<0.0005 (D1)
5/14/2019	<0.0005	<0.0005 (D1D)	<0.0005 (D1D)	0.0011 (D1D)	0.00073 (D1D)	
5/15/2019						0.00092 (D1D)
9/24/2019	<0.0005 (D1D)	0.0014 (D)	0.00072 (D)	0.0018 (D)	0.0012 (D)	
9/25/2019						0.00089 (D)
Mean	0.001763	0.001354	0.001878	0.002539	0.002772	0.002562
Std. Dev.	0.002461	0.002381	0.002076	0.002331	0.00265	0.002014
Upper Lim.	0.005	0.0025	0.005	0.003603	0.004575	0.003427
Lower Lim.	0.0002	0.0002	0.0002	0.001061	0.0006864	0.0007298

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

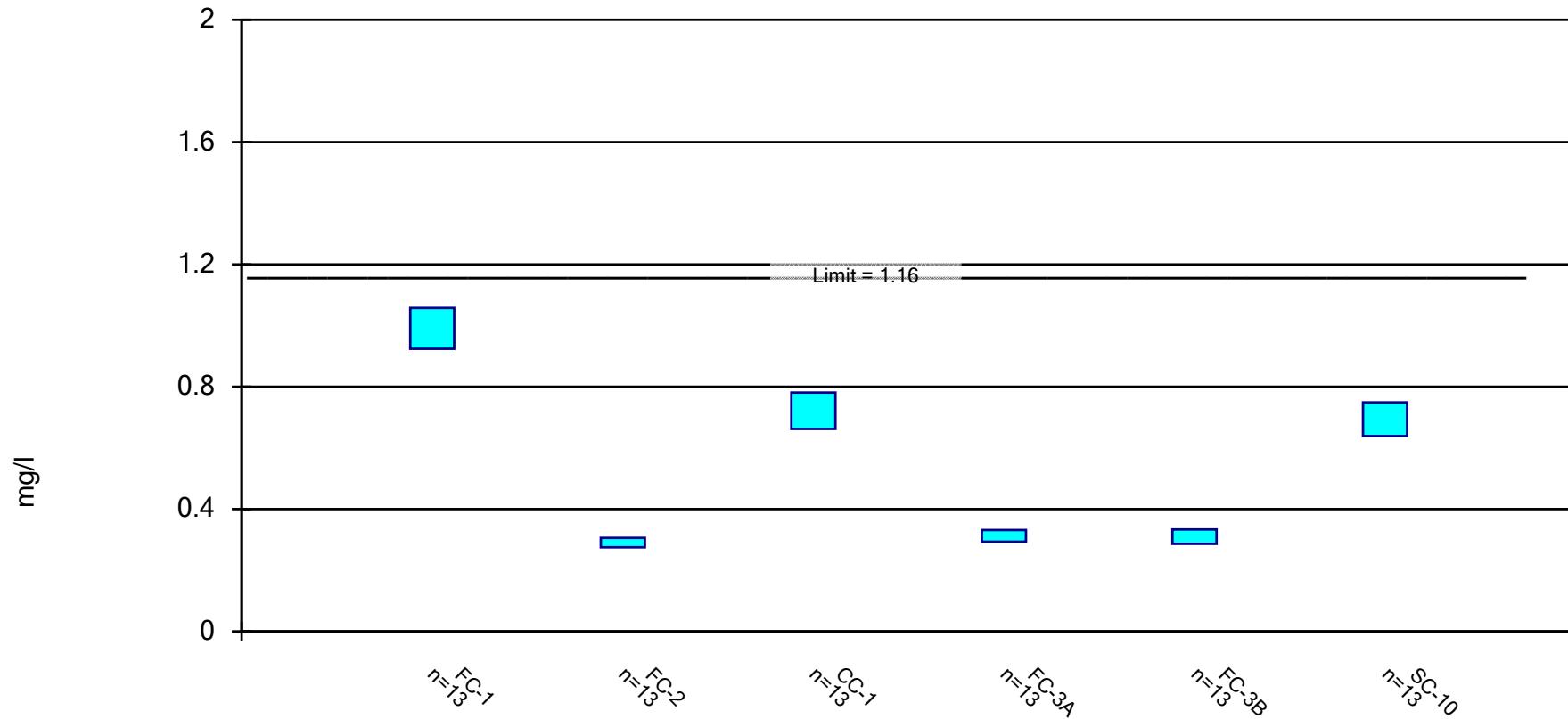
Confidence Interval

Constituent: Lead, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.0076	0.00043	0.00052	0.0046
8/3/2016	0.0043	0.0016	<0.0002	0.0007
9/20/2016	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)
10/13/2016	0.0006 (D)	<0.0002 (D)	<0.0002 (D1)	<0.0002 (D1)
11/16/2016	0.0063 (D)	0.0038 (D)	0.00145 (D)	0.0016 (D)
1/19/2017	0.0025 (D)	0.0017 (D)	0.0015 (D)	0.0016 (D)
2/15/2017	0.0028 (D)	0.0021 (D)	0.0015 (D)	0.0015 (D)
3/1/2017	0.0059 (D)	0.0064 (D)	0.0068 (D)	0.0064 (D)
11/14/2017	0.00073 (D)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
2/15/2018	<0.005	<0.005	<0.0025	<0.0025
9/26/2018	<0.0005 (D1)	0.0012	<0.0005 (D)	<0.0005
5/15/2019	<0.0005 (D1D)	<0.0005 (D)	<0.0005 (D1D)	<0.0005 (D1D)
9/24/2019		0.00056 (D)		
9/25/2019	0.00059 (D)		0.000825 (D)	<0.0005 (D1D)
Mean	0.002886	0.001861	0.001323	0.001638
Std. Dev.	0.002635	0.001995	0.001783	0.00188
Upper Lim.	0.003939	0.002344	0.0025	0.0046
Lower Lim.	0.0005611	0.0003631	0.0002	0.0002

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

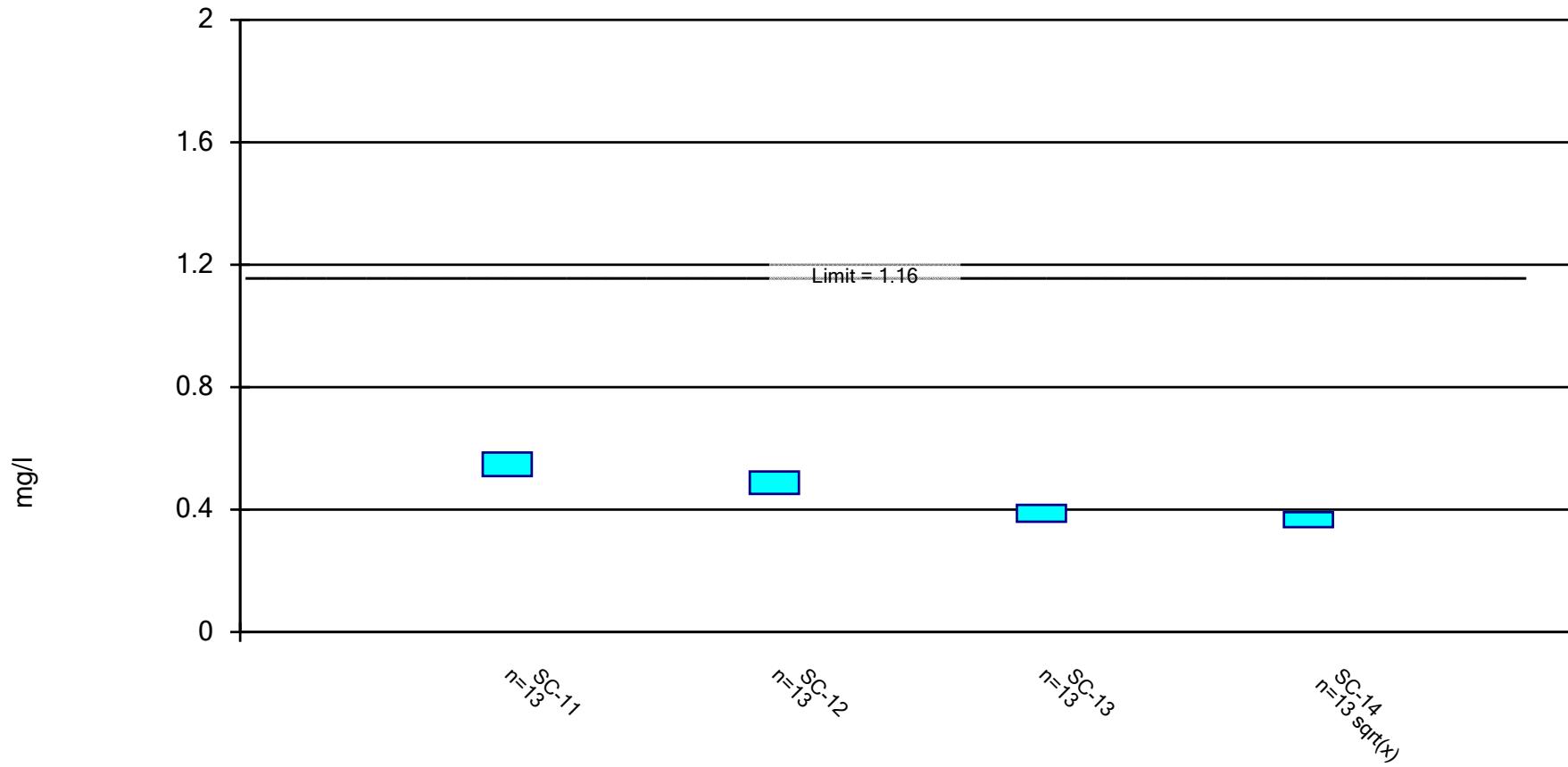
Confidence Interval

Constituent: Lithium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.904	0.269	0.671 (D)			0.601
6/23/2016				0.303		
6/27/2016					0.232	
8/2/2016	0.984 (D)	0.305	0.731	0.311	0.274	
8/3/2016						0.661 (D)
9/19/2016	1.01	0.306 (D)	0.779	0.343	0.295	
9/20/2016						0.728
10/12/2016	1.03	0.307	0.825	0.3455 (D)	0.315	
10/13/2016						0.761
11/15/2016	1.16	0.325 (T)	0.822	0.3375 (D)	0.344	
11/16/2016						0.786
1/18/2017	1.08	0.318	0.791 (D)	0.343 (D)	0.335	
1/19/2017						0.858 (D)
2/14/2017	1	0.298	0.73 (D)	0.312	0.334	
2/15/2017						0.671 (D)
2/28/2017	0.9125 (D)	0.275 (D)	0.641	0.283 (D)	0.326 (D)	
3/1/2017						0.637 (D)
11/13/2017	0.894	0.2665 (D)	0.63	0.288	0.31	
11/14/2017						0.632
2/14/2018	0.9 (D)	0.265 (D)	0.576 (D)	0.2635 (D)	0.341 (D)	
2/15/2018						0.66 (D)
9/25/2018	0.9085 (D)	0.276 (D)	0.664 (D)	0.302 (D)	0.316 (D)	
9/26/2018						0.626 (D)
5/14/2019	1.13	0.294	0.798	0.3265 (D)	0.321	
5/15/2019						0.729
9/24/2019	0.9695 (D)	0.274 (D)	0.722 (D)	0.303 (D)	0.284 (D)	
9/25/2019						0.669 (D)
Mean	0.991	0.2907	0.7215	0.3124	0.3098	0.6938
Std. Dev.	0.08968	0.02071	0.08002	0.02571	0.03167	0.07416
Upper Lim.	1.058	0.3061	0.781	0.3315	0.3333	0.7489
Lower Lim.	0.9243	0.2753	0.662	0.2933	0.2862	0.6386

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

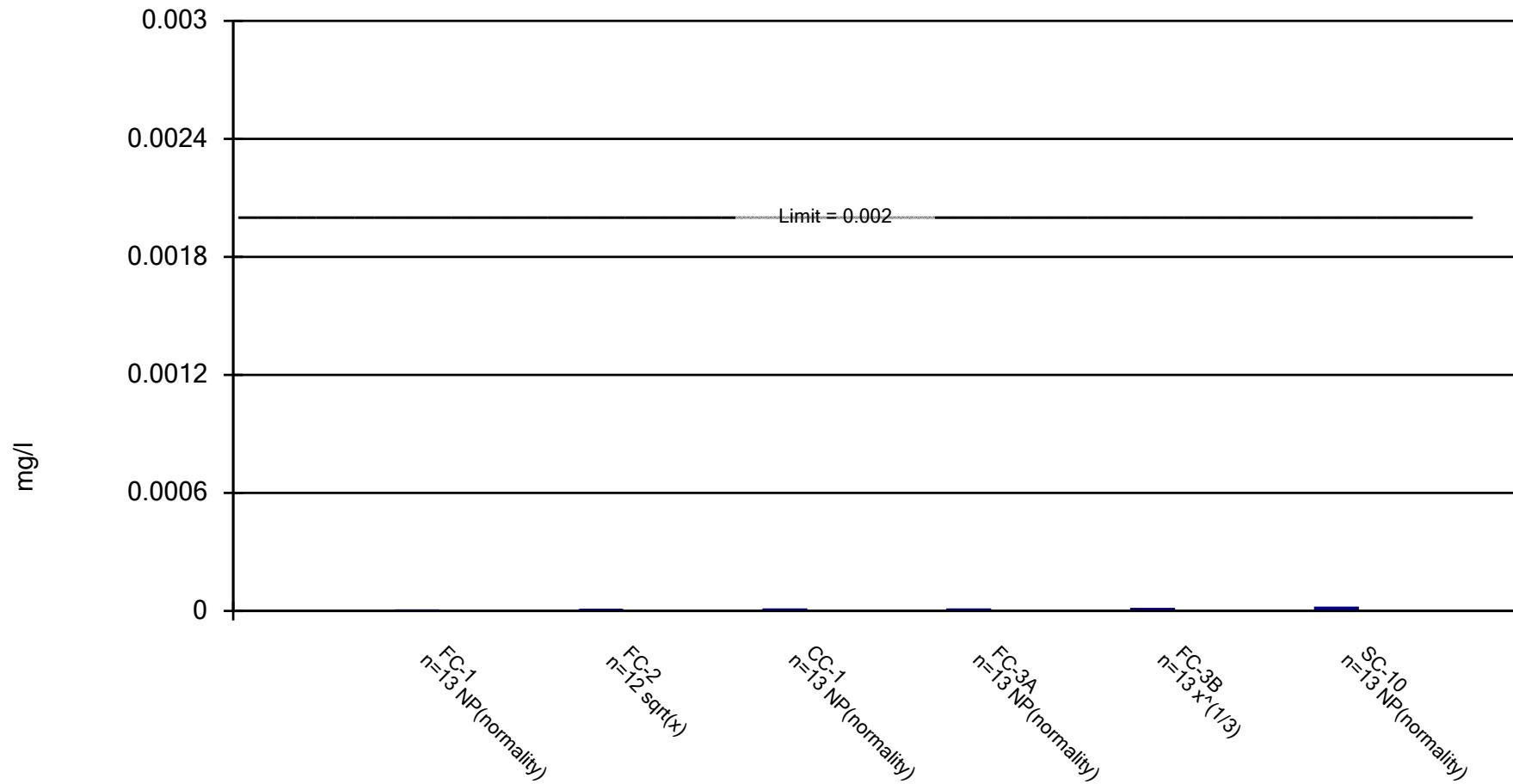
Constituent: Lithium, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.475	0.422	0.394	0.363
8/3/2016	0.497	0.47	0.384	0.353
9/20/2016	0.593 (D)	0.53	0.429	0.406
10/13/2016	0.611	0.546 (D)	0.437	0.415
11/16/2016	0.622	0.572	0.4445 (D)	0.422
1/19/2017	0.619 (D)	0.558 (D)	0.433 (D)	0.407 (D)
2/15/2017	0.542	0.472	0.379	0.365
3/1/2017	0.5 (D)	0.449 (D)	0.343 (D)	0.338 (D)
11/14/2017	0.519 (D)	0.443	0.345	0.336
2/15/2018	0.494 (D)	0.442 (D)	0.374 (D)	0.345 (D)
9/26/2018	0.534 (D)	0.471 (D)	0.3495 (D)	0.336 (D)
5/15/2019	0.583	0.505 (D)	0.378	0.363
9/24/2019		0.464 (D)		
9/25/2019	0.538		0.3545 (D)	0.33 (D)
Mean	0.5482	0.488	0.388	0.3676
Std. Dev.	0.05169	0.04902	0.03675	0.03328
Upper Lim.	0.5867	0.5245	0.4154	0.3918
Lower Lim.	0.5098	0.4515	0.3607	0.3429

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

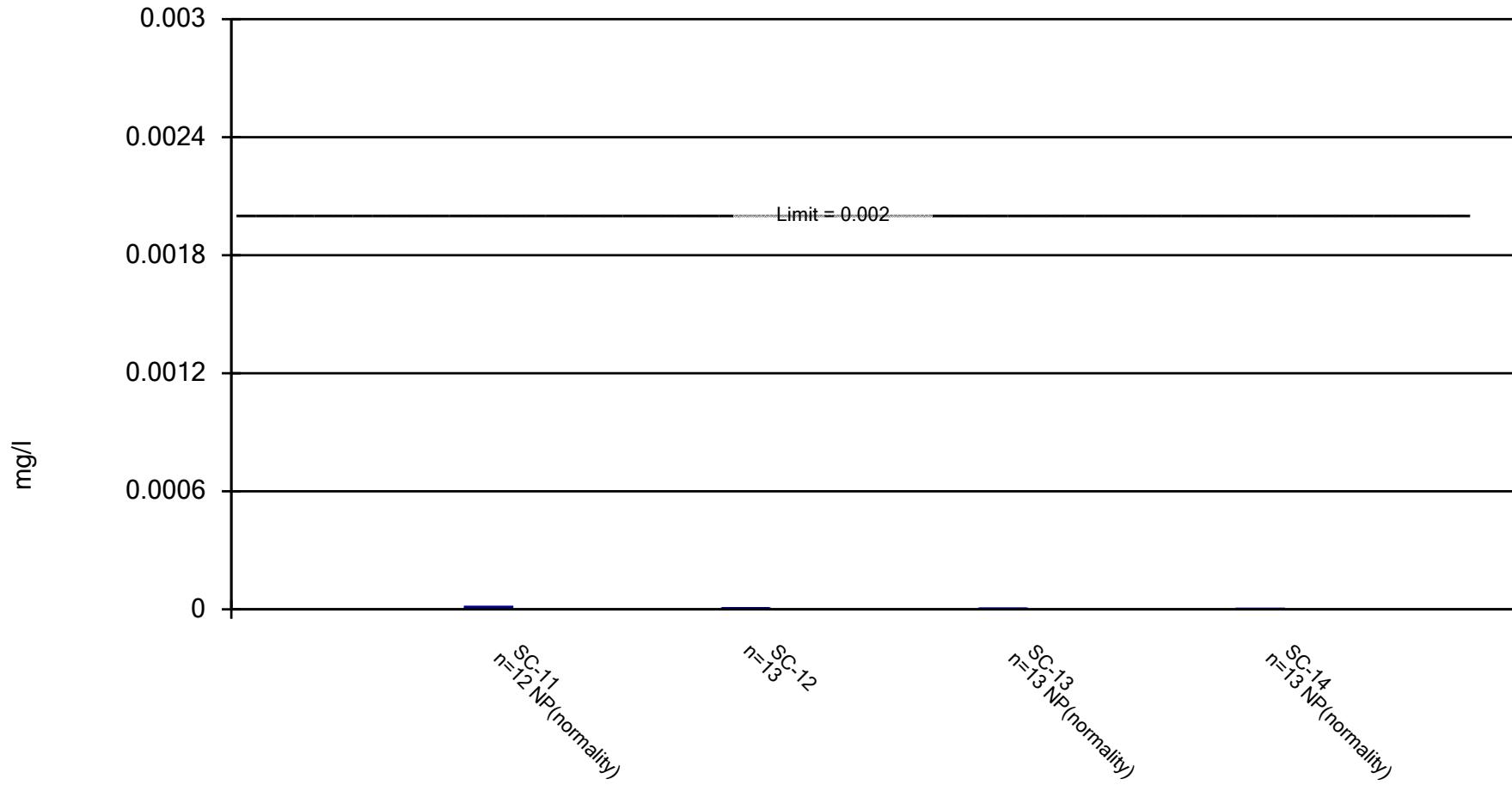
Confidence Interval

Constituent: Mercury, Total (mg/l) Analysis Run 1/13/2020 11:53 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	1.3E-06	2.8E-06	4.7E-06 (D)			3.6E-05
6/23/2016				5.4E-06		
6/27/2016					1.3E-05	
8/2/2016	2E-06 (D)	4E-06	6E-06	7E-06	6E-06	
8/3/2016						1.05E-05 (D)
9/19/2016	2E-06	3E-06 (D)	6E-06	4E-06	3E-06	
9/20/2016						1.6E-05
10/12/2016	2E-06		6E-06	5E-06 (D)	3E-06	
10/13/2016						1E-05
11/15/2016	2E-06	4E-06	6E-06	2E-06 (D)	9E-06	
11/16/2016						1E-05
1/18/2017	2E-06	5E-06	7.5E-06 (D)	2E-06	8E-06	
1/19/2017						1.1E-05
2/14/2017	2E-06	4E-06	6E-06 (D)	2E-06	4E-06	
2/15/2017						9E-06 (D)
2/28/2017	2E-06 (D)	4E-06	6E-06	2E-06	5E-06	
3/1/2017						9E-06
11/13/2017	2E-06 (T)	3.5E-06 (TD)	6E-06 (T)	4E-06 (T)	7E-06 (T)	
11/14/2017						1E-05
2/14/2018	2E-06	3E-06	5E-06	2E-06 (D)	5E-06	
2/15/2018						1.1E-05
9/25/2018	2.5E-06 (D)	3E-06	5E-06	3E-06	2.4E-05	
9/26/2018						9E-06
5/14/2019	2E-06	3E-06	6E-06	7.5E-06 (D)	3E-06	
5/15/2019						1E-05
9/24/2019	2E-06 (D)	5E-06	5E-06	8E-06	5E-06	
9/25/2019						1E-05
Mean	1.985E-06	3.692E-06	5.785E-06	4.146E-06	7.308E-06	1.242E-05
Std. Dev.	2.5E-07	7.7E-07	7.3E-07	2.253E-06	5.765E-06	7.308E-06
Upper Lim.	2.5E-06	4.273E-06	7.5E-06	7.5E-06	1.006E-05	1.6E-05
Lower Lim.	1.3E-06	3.087E-06	5E-06	2E-06	3.705E-06	9E-06

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

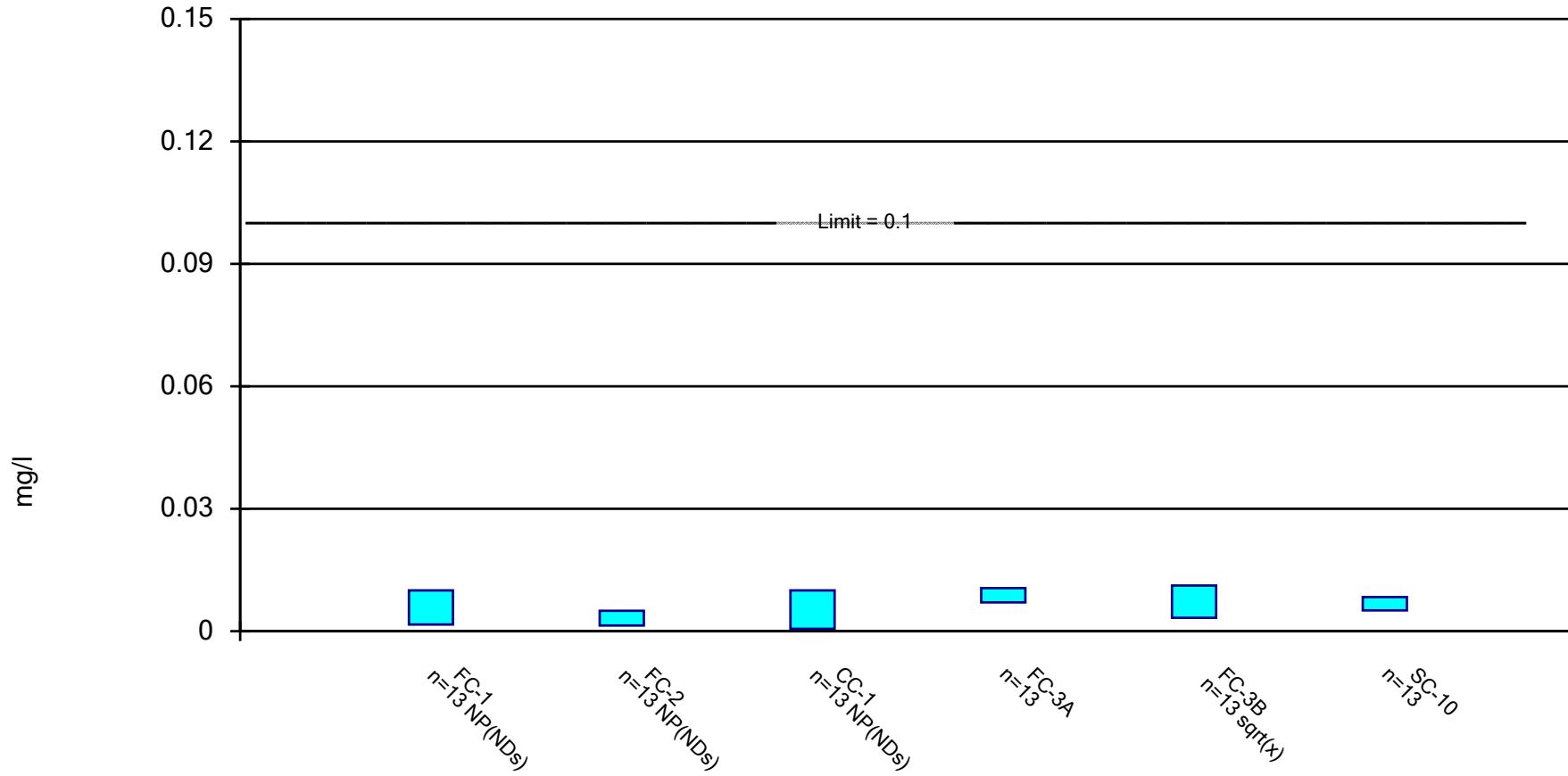
Constituent: Mercury, Total (mg/l) Analysis Run 1/13/2020 11:54 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	6.7E-05	4.5E-06	3.6E-06	1.2E-05
8/3/2016		6E-06	2E-06	3E-06
9/20/2016	9.5E-06 (D)	5E-06	3E-06	3E-06
10/13/2016	1E-05	3E-06 (D)	2E-06	2E-06
11/16/2016	1E-05	4E-06	2E-06 (D)	2E-06
1/19/2017	1E-05	4E-06	3E-06	2E-06
2/15/2017	8E-06	3E-06	2E-06	2E-06
3/1/2017	9E-06	3E-06 (D)	3E-06	<2E-06
11/14/2017	7.5E-06 (D)	4E-06	2E-06	2E-06
2/15/2018	1.3E-05	4E-06	2E-06	2E-06
9/26/2018	8E-06	5E-06	2E-06 (D)	2E-06
5/15/2019	9E-06	4E-06 (D)	2E-06	2E-06
9/24/2019		4E-06		
9/25/2019	9E-06		4E-06 (D)	2E-06
Mean	1.417E-05	4.115E-06	2.508E-06	2.846E-06
Std. Dev.	1.67E-05	8.7E-07	7.2E-07	2.794E-06
Upper Lim.	1.3E-05	4.762E-06	3.6E-06	3E-06
Lower Lim.	8E-06	3.469E-06	2E-06	1E-06

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

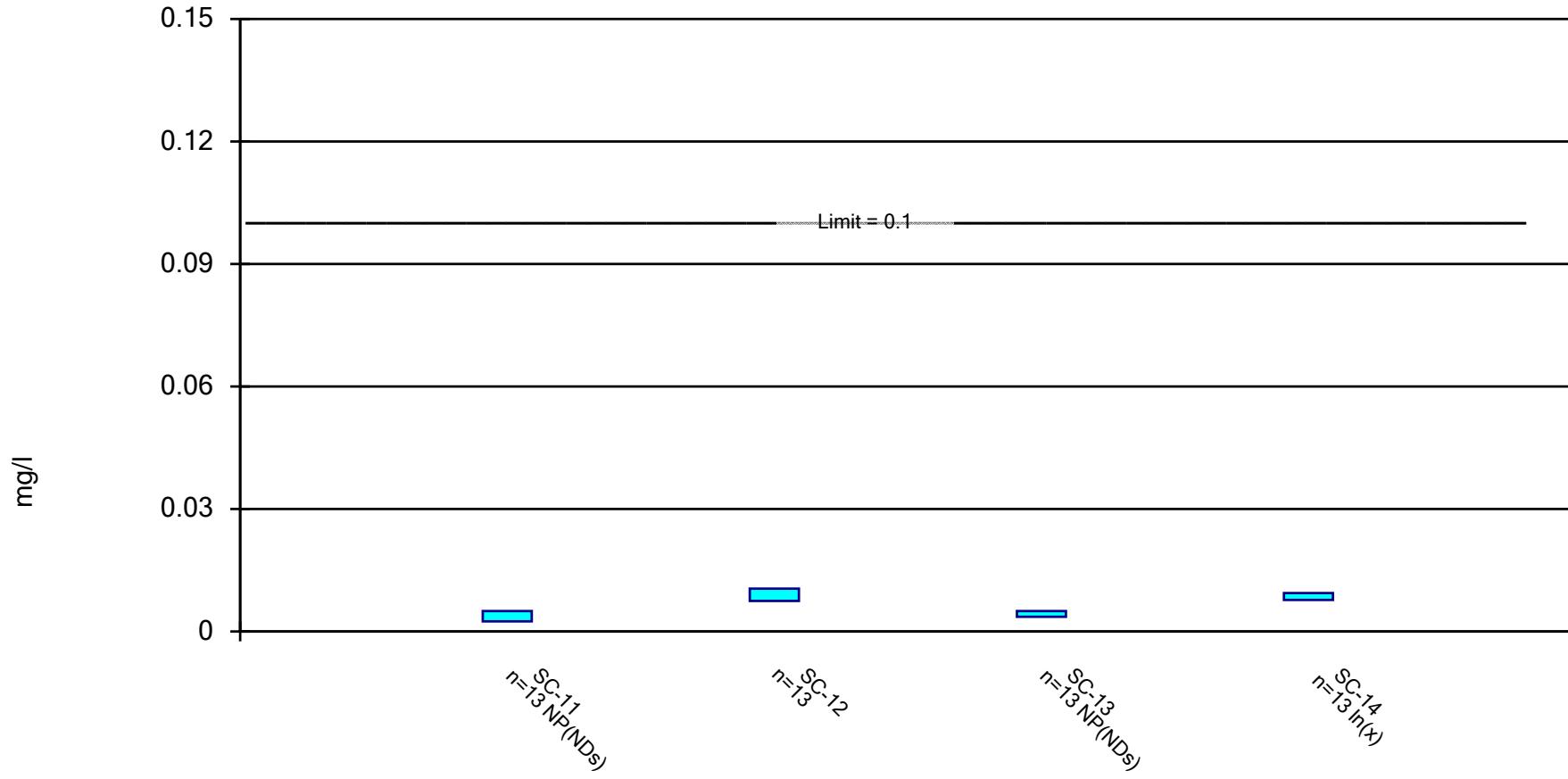
Confidence Interval

Constituent: Molybdenum, Total (mg/l) Analysis Run 1/13/2020 11:54 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	<0.005	<0.005	<0.005 (D)			0.0113
6/23/2016				<0.005		
6/27/2016					0.0201	
8/2/2016	<0.005 (D)	<0.005	<0.005	0.00838	0.0198	
8/3/2016						0.008055 (D)
9/19/2016	<0.005	<0.005 (D)	<0.005	0.0122	0.00609	
9/20/2016						0.00911
10/12/2016	<0.005	0.001252 (D)	<0.005	0.009175 (D)	0.00525	
10/13/2016						0.00767
11/15/2016	<0.005	<0.005	<0.005	0.01065 (D)	0.0117	
11/16/2016						0.0074
1/18/2017	<0.005	<0.005	<0.005 (D)	0.00969	<0.005	
1/19/2017						0.00614
2/14/2017	<0.005	<0.005	<0.005 (D)	0.0104	0.00716	
2/15/2017						0.006325 (D)
2/28/2017	<0.005 (D)	<0.005	<0.005	0.0109	0.00842	
3/1/2017						0.00646
11/13/2017	0.0015 (D)	0.0014 (D)	<0.0002 (D1)	0.005 (D)	0.0042 (D)	
11/14/2017						0.0026 (D)
2/14/2018	<0.01	0.003	<0.01	0.0112 (D)	0.0055	
2/15/2018						0.0072
9/25/2018	0.0015 (D)	0.002	0.0006	0.0086	0.0027	
9/26/2018						0.0062
5/14/2019	0.0018	0.002 (D)	0.00068 (D)	0.0069 (D)	0.0014 (D)	
5/15/2019						0.0054 (D)
9/24/2019	0.00165 (D)	0.0021 (D)	0.00067 (D)	0.0066 (D)	0.002 (D)	
9/25/2019						0.0038 (D)
Mean	0.004342	0.003596	0.004012	0.008823	0.00764	0.006743
Std. Dev.	0.002333	0.001628	0.002771	0.002348	0.006104	0.002201
Upper Lim.	0.01	0.005	0.01	0.01057	0.01119	0.00838
Lower Lim.	0.00165	0.0014	0.0006	0.007076	0.003303	0.005106

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

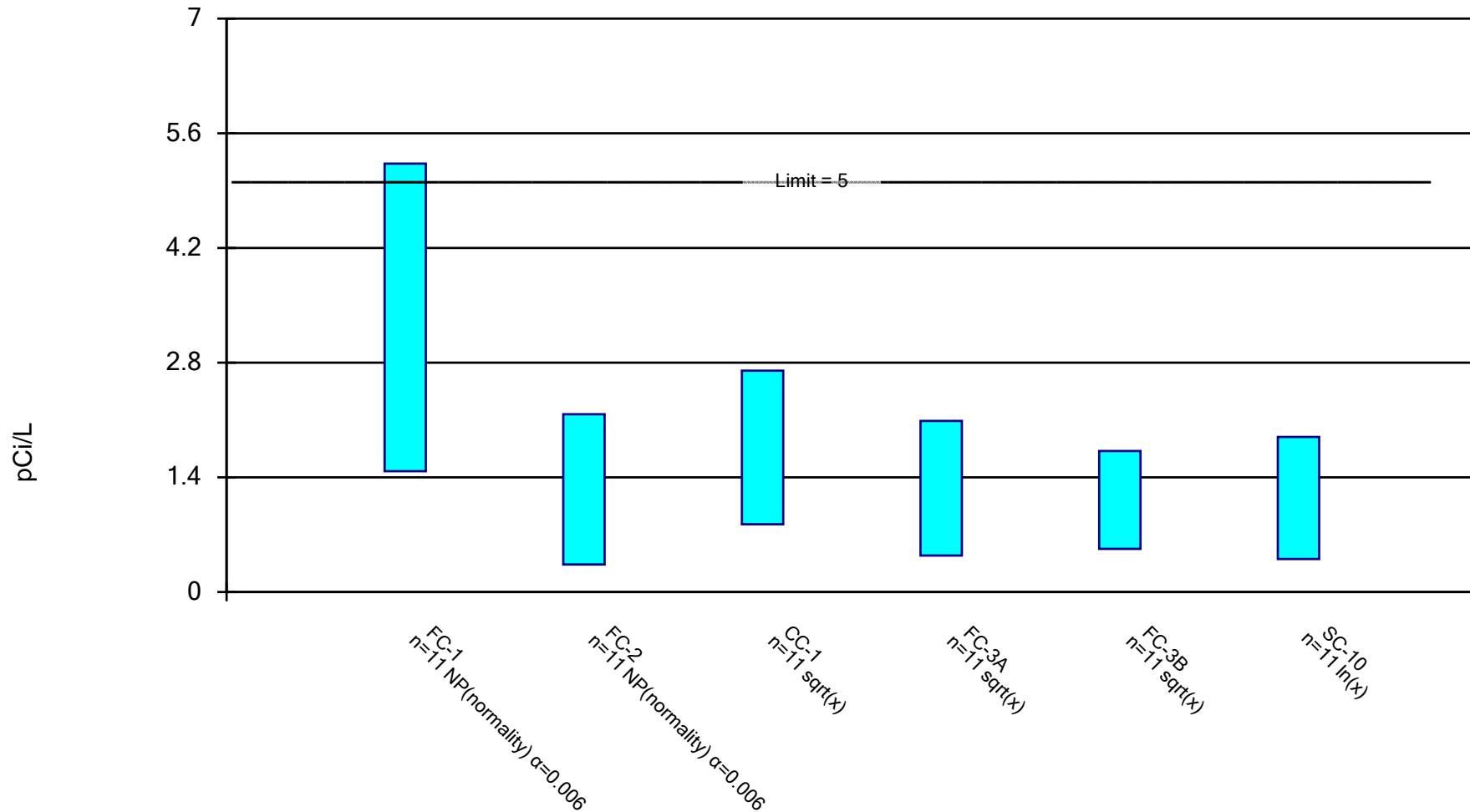
Constituent: Molybdenum, Total (mg/l) Analysis Run 1/13/2020 11:54 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.005	0.0128	<0.005	0.0079
8/3/2016	<0.005	0.0103	<0.005	0.00734
9/20/2016	<0.005 (D)	0.00983	<0.005	0.00819
10/13/2016	<0.005	0.0101 (D)	<0.005	0.00848
11/16/2016	<0.005	0.00951	<0.005 (D)	0.00897
1/19/2017	<0.005	0.00866	<0.005	0.00798
2/15/2017	<0.005	0.00909	<0.005	0.00821
3/1/2017	<0.005	0.00905 (D)	<0.005	0.00869
11/14/2017	0.00185 (D)	0.0067 (D)	0.0036 (D)	0.0072 (D)
2/15/2018	0.0033	0.0097	0.005	0.012
9/26/2018	0.003	0.0089	0.00375 (D)	0.0098
5/15/2019	0.0025 (D)	0.0081 (D)	0.0031 (D)	0.0086 (D)
9/24/2019		0.0041 (D)		
9/25/2019	0.0028 (D)		0.0031 (D)	0.0086 (D)
Mean	0.004112	0.008988	0.004504	0.008612
Std. Dev.	0.001212	0.002021	0.0007928	0.001221
Upper Lim.	0.005	0.01049	0.005	0.00941
Lower Lim.	0.0025	0.007485	0.0036	0.007753

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Rad 226+228 Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

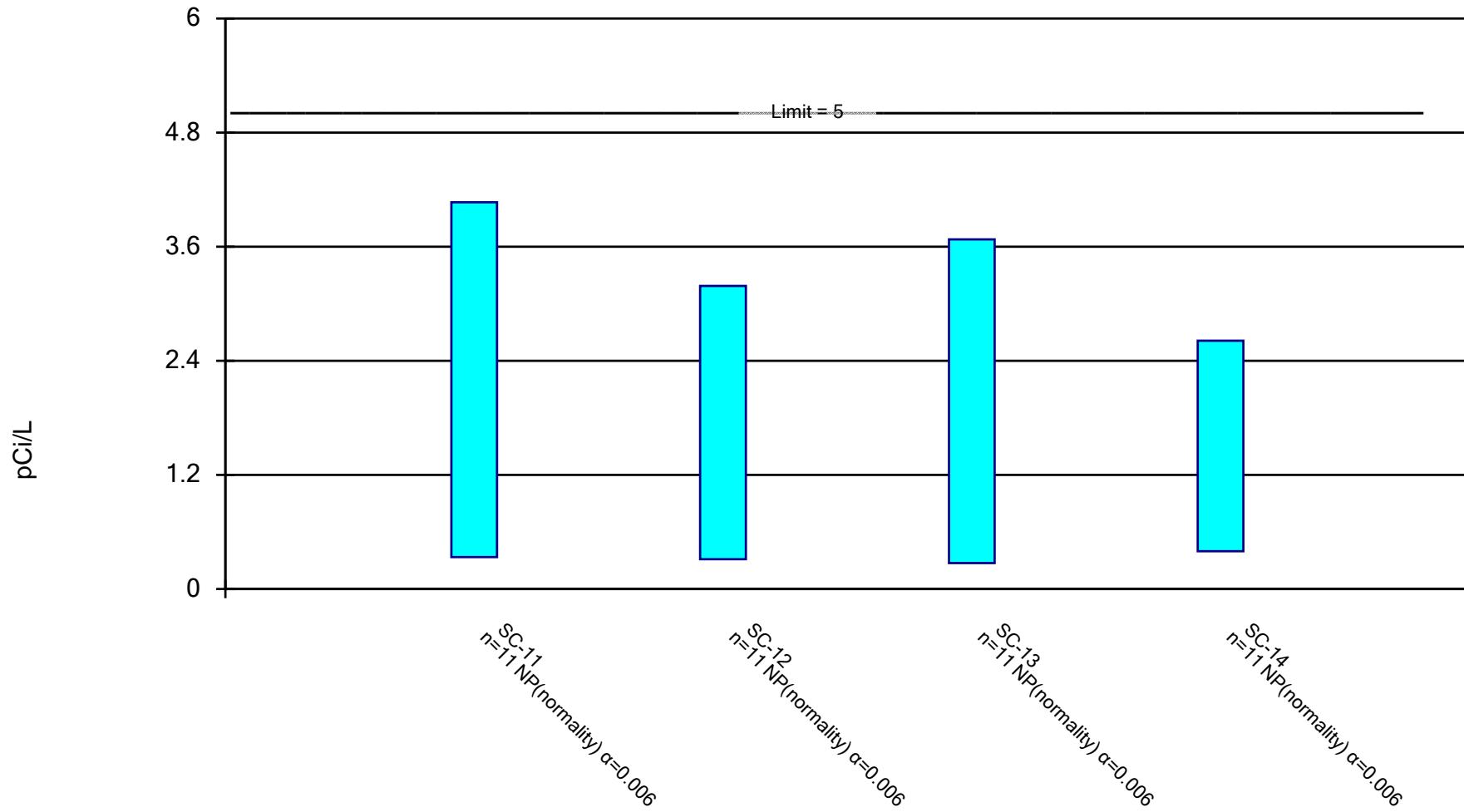
Confidence Interval

Constituent: Rad 226+228 (pCi/L) Analysis Run 1/13/2020 11:54 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	1.475	0.3375	1.317 (D)			1.257
6/23/2016				1.321		
6/27/2016					1.111	
8/2/2016	1.38	0.295	0.412	0.3135	1.7775	
8/3/2016						0.646
9/19/2016	2.136	0.363	0.6405	0.3795	0.496	
9/20/2016						0.361
10/12/2016	1.913	0.3475	1.404	0.616	0.4955	
10/13/2016						0.324
11/15/2016	2.128	0.854	1.354	0.395	0.6865	
11/16/2016						0.3775
1/18/2017	1.874	0.471	1.494 (D)	0.617	0.6095	
1/19/2017						0.704
2/14/2017	2.31 (D)	0.7225	1.841	2.636	1.366	
2/15/2017						1.114
2/28/2017	1.628	0.446	1.59325 (D)	1.8245	0.414	
3/1/2017						0.432
11/13/2017	6.445	4.255	5.16	3.575	2.225	
11/14/2017						5.16
2/14/2018	5.23	2.1715	3.22	2.23025 (D)	2.79	
2/15/2018						3.8
9/24/2019	1.628	0.4605	1.444	0.548	0.69	
9/25/2019						0.949
Mean	2.559	0.9749	1.807	1.314	1.151	1.375
Std. Dev.	1.669	1.213	1.32	1.106	0.8002	1.596
Upper Lim.	5.23	2.172	2.703	2.089	1.722	1.893
Lower Lim.	1.475	0.3375	0.8279	0.4463	0.5269	0.403

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Rad 226+228 Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

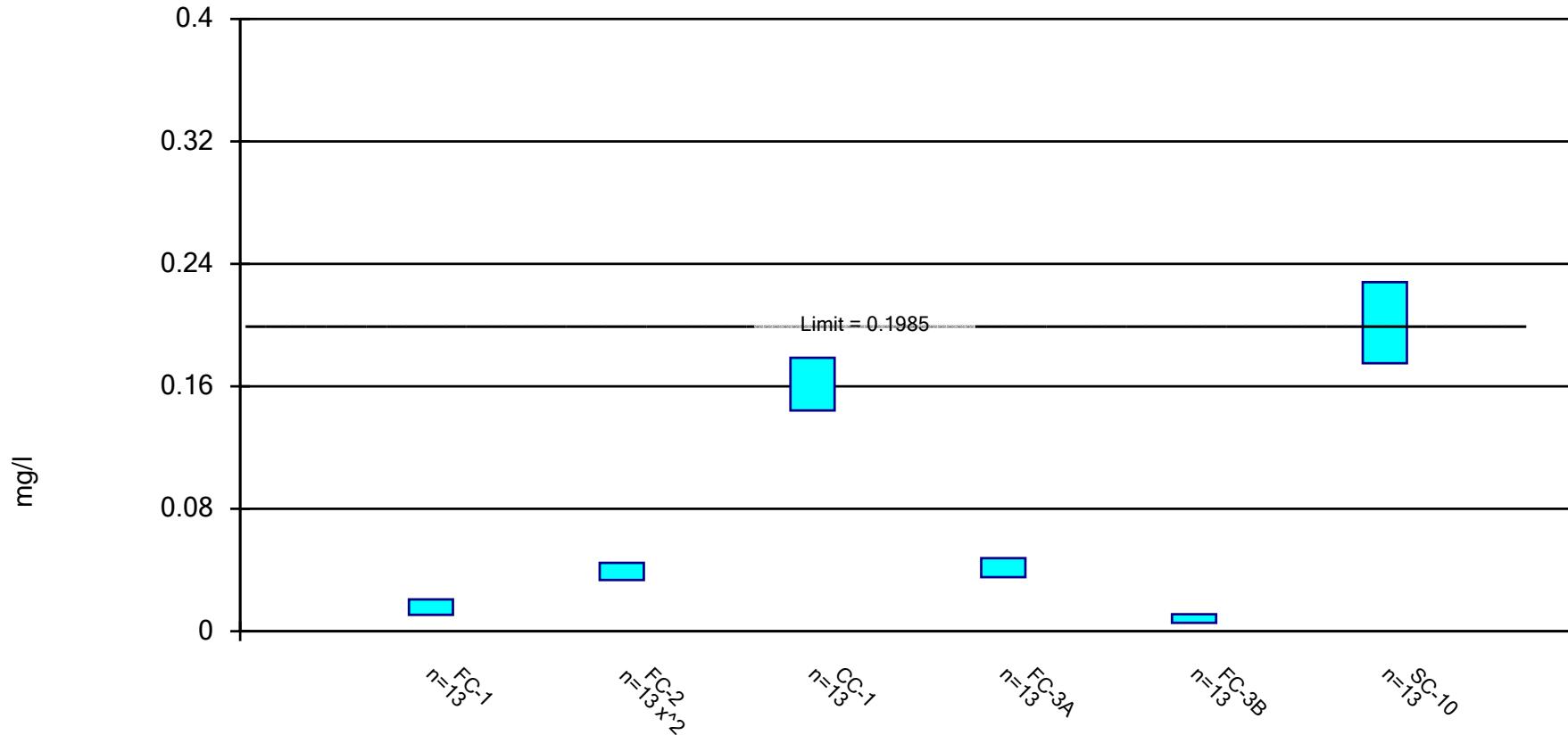
Confidence Interval

Constituent: Rad 226+228 (pCi/L) Analysis Run 1/13/2020 11:54 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	2.295	0.253	0.2705	0.786
8/3/2016	0.508	0.528	0.2735	0.6375
9/20/2016	0.4555	0.3585	0.448	0.603
10/13/2016	0.3365	0.437	0.305	0.4535
11/16/2016	0.286	0.3135	0.341	0.3695
1/19/2017	0.4185	0.393	0.661	0.497
2/15/2017	0.751	0.6565	0.581	0.3975
3/1/2017	0.7725	0.355	0.318	0.4345
11/14/2017	4.0675 (D)	3.94	4.55	4.465
2/15/2018	4.1	3.1875 (D)	3.677	2.612
9/25/2019	0.418	0.5735	0.596 (D)	0.4
Mean	1.31	0.9996	1.093	1.06
Std. Dev.	1.481	1.284	1.512	1.3
Upper Lim.	4.068	3.188	3.677	2.612
Lower Lim.	0.3365	0.3135	0.2735	0.3975

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

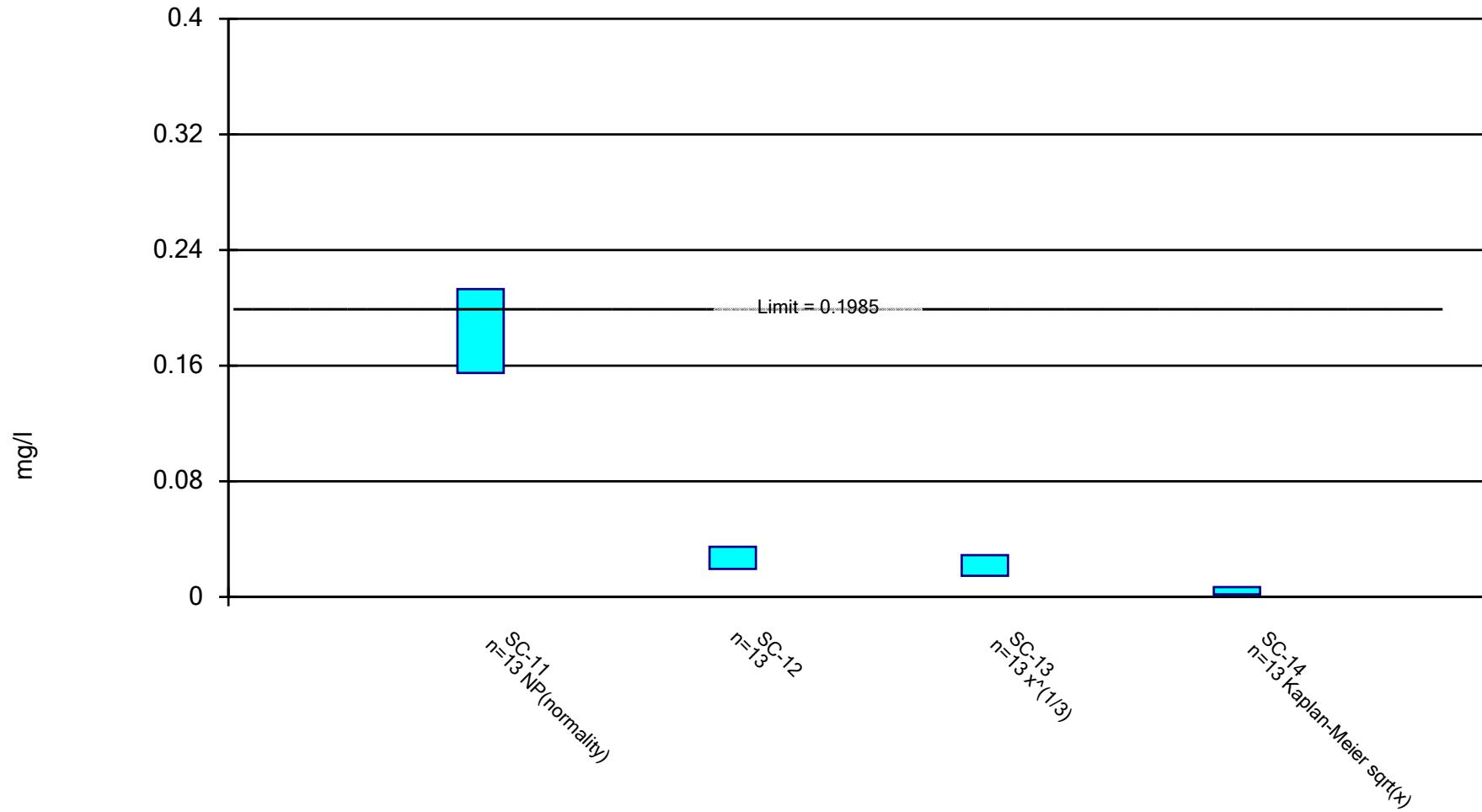
Confidence Interval

Constituent: Selenium, Total (mg/l) Analysis Run 1/13/2020 11:54 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.016	0.0471	0.1985 (D)			0.212
6/23/2016				0.0393		
6/27/2016					0.0057	
8/2/2016	0.0098 (D)	0.0412	0.186	0.0382	0.0069	
8/3/2016						0.216 (D)
9/19/2016	0.028 (D)	0.04895 (D)	0.157 (D)	0.0364 (D)	0.0112 (D)	
9/20/2016						0.201 (D)
10/12/2016	0.0167 (D)	<0.001 (D1)	0.138 (D)	0.04245 (D)	0.0115 (D)	
10/13/2016						0.194 (D)
11/15/2016	0.0136	0.0356 (D)	0.145 (D)	0.0355 (D)	0.0106 (D)	
11/16/2016						0.201 (DP1)
1/18/2017	0.0254 (D)	0.0452 (D)	0.1385 (D)	0.039 (D)	0.0067 (D)	
1/19/2017						0.22 (D)
2/14/2017	0.0141 (DT)	0.0388 (DT)	0.1415 (D)	0.0352 (DT)	0.0092 (D)	
2/15/2017						0.22 (D)
2/28/2017	0.00375 (D)	0.0367 (D)	0.143 (D)	0.0263 (D)	0.0011 (D)	
3/1/2017						0.224 (D)
11/13/2017	0.015 (D)	0.0381 (D)	0.135 (D)	0.0552 (D)	0.0107 (D)	
11/14/2017						0.168 (D)
2/14/2018	0.0068	0.044	0.169	0.0543 (D)	0.0036	
2/15/2018						0.249
9/25/2018	0.02165 (D)	0.0371	0.17	0.0512	0.0142	
9/26/2018						0.111 (D)
5/14/2019	0.0178 (D)	0.0402 (D)	0.188 (D)	0.04725 (D)	0.005 (D)	
5/15/2019						0.235 (D)
9/24/2019	0.01665 (D)	0.0376 (D)	0.19 (D)	0.0399 (D)	0.0115 (D)	
9/25/2019						0.17 (D)
Mean	0.01579	0.03777	0.1615	0.04155	0.0083	0.2016
Std. Dev.	0.006778	0.01197	0.02315	0.008351	0.003782	0.03565
Upper Lim.	0.02083	0.04469	0.1787	0.04776	0.01111	0.2281
Lower Lim.	0.01075	0.03348	0.1443	0.03534	0.005488	0.1751

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

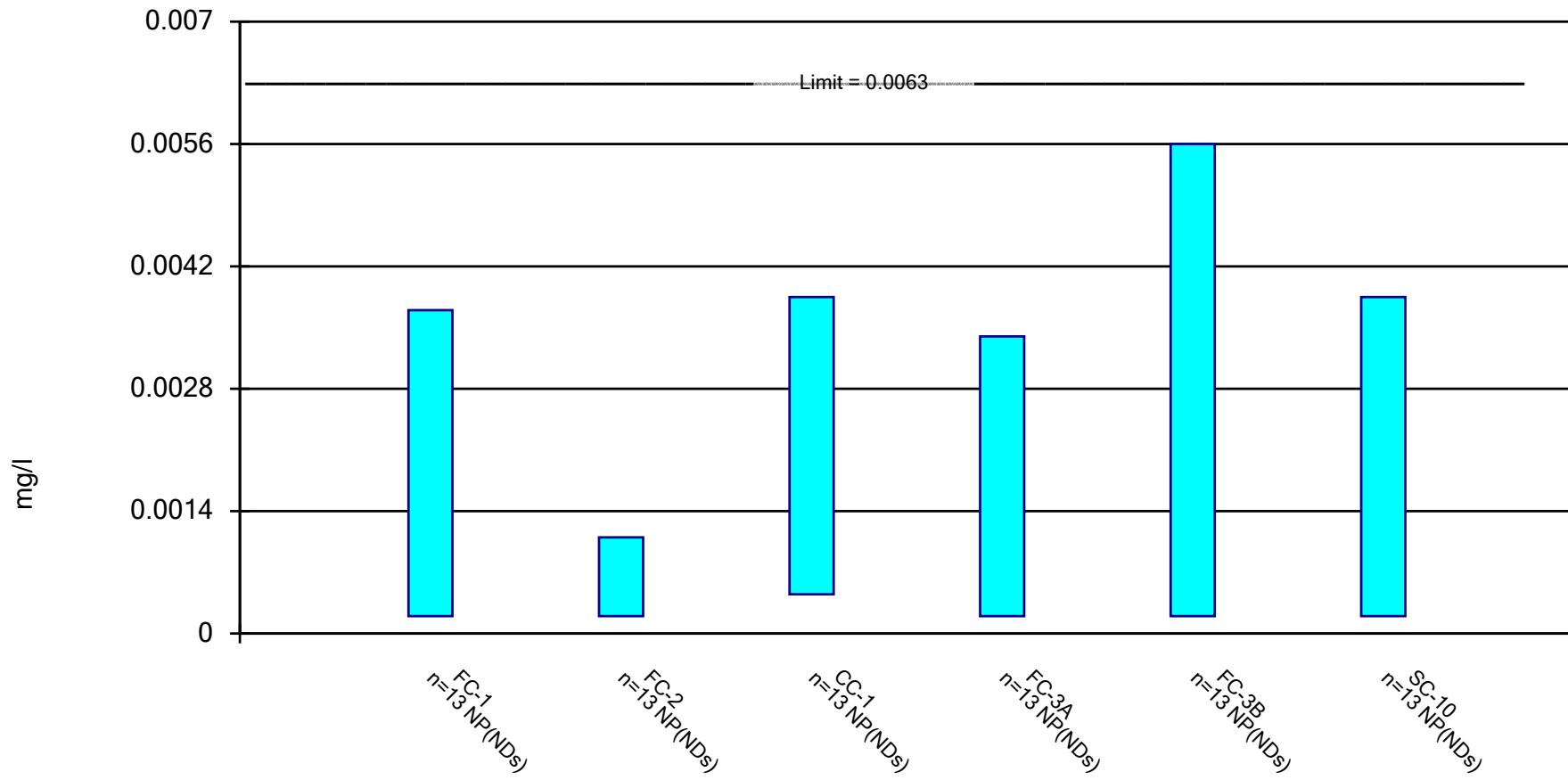
Confidence Interval

Constituent: Selenium, Total (mg/l) Analysis Run 1/13/2020 11:54 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	0.168	0.0203	0.0311	0.0031
8/3/2016	0.155	0.0197	0.0236	0.0035
9/20/2016	0.188 (D)	0.0252 (D)	0.0228 (D)	0.0062 (D)
10/13/2016	0.168 (D)	0.05055 (D)	0.0558 (D)	0.0192 (D)
11/16/2016	0.163 (DP1)	0.0237 (DP1)	0.00765 (D)	<0.001 (D1P)
1/19/2017	0.196 (D)	0.0337 (D)	0.0202 (D)	0.0013 (D)
2/15/2017	0.194 (D)	0.03 (D)	0.0164 (D)	0.0033 (D)
3/1/2017	0.189 (D)	0.02355 (D)	0.0177 (D)	<0.001 (D1)
11/14/2017	0.213 (D)	0.0252 (D)	0.0236 (D)	0.0046 (D)
2/15/2018	0.355	0.0437	0.0204	0.0055
9/26/2018	0.107 (D)	0.0231	0.01845 (D)	0.002
5/15/2019	0.186 (D)	0.0198 (D)	0.0185 (D)	0.005 (D)
9/24/2019		0.0134 (D)		
9/25/2019	0.169 (D)		0.015 (D)	0.0045 (D)
Mean	0.1885	0.02707	0.0224	0.004554
Std. Dev.	0.05631	0.01027	0.01142	0.004771
Upper Lim.	0.213	0.03471	0.02896	0.0068
Lower Lim.	0.155	0.01943	0.01465	0.001821

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

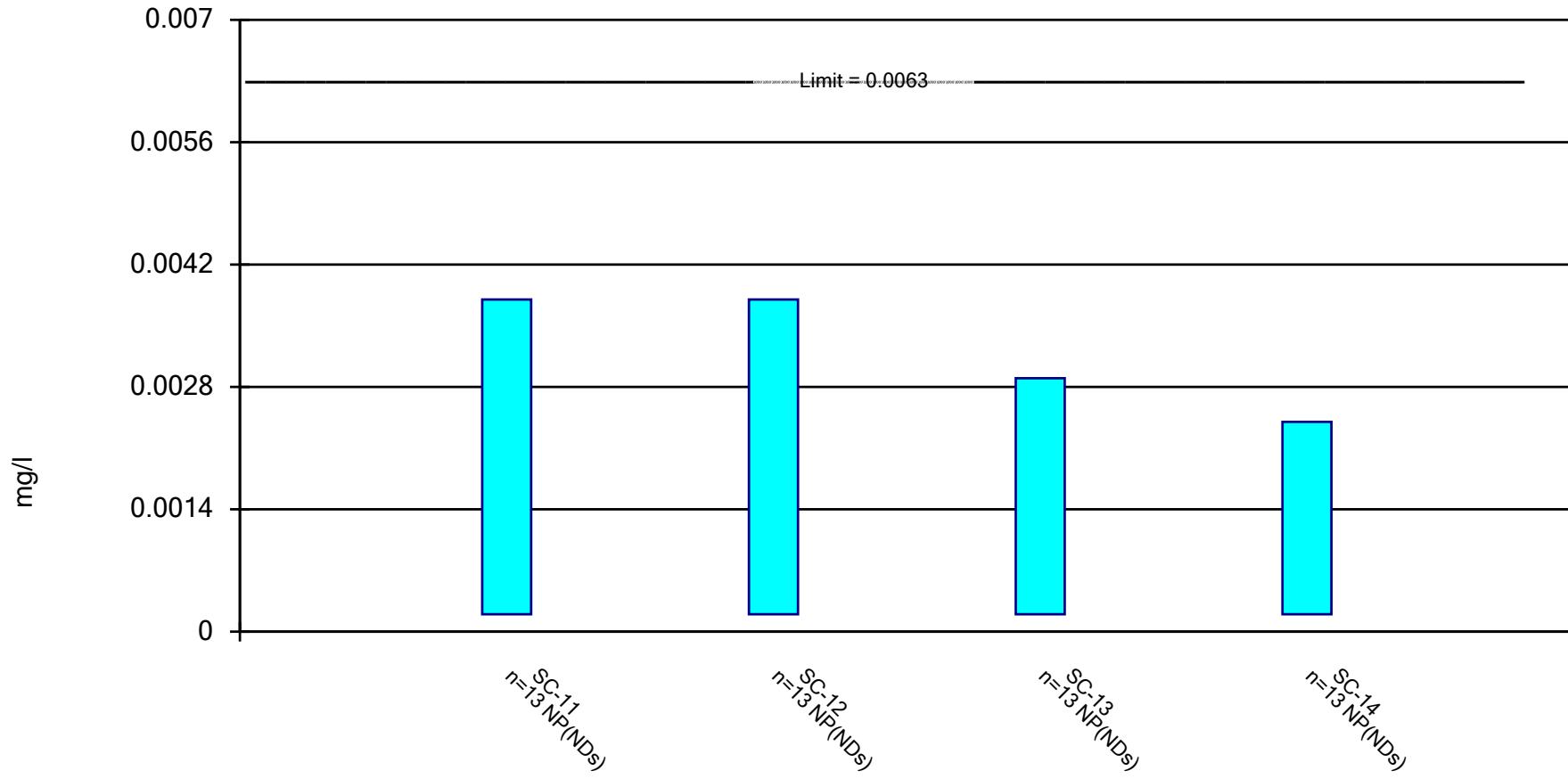
Confidence Interval

Constituent: Thallium, Total (mg/l) Analysis Run 1/13/2020 11:54 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	CC-1	FC-3A	FC-3B	SC-10
6/22/2016	0.0002	<0.0002	0.000455 (D)			<0.0002
6/23/2016				<0.0002		
6/27/2016					<0.0002	
8/2/2016	<0.0002 (D)	<0.0002	0.00045	<0.0002	<0.0002	
8/3/2016						<0.0002 (D)
9/19/2016	0.00027 (D)	0.000545 (D)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	
9/20/2016						<0.0002 (D1)
10/12/2016	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D)	<0.0002 (D1)	
10/13/2016						<0.0002 (D1)
11/15/2016	0.0061 (D)	<0.0002 (D1)	0.0063 (D)	0.0057 (D)	0.0056 (D)	
11/16/2016						0.0077 (D)
1/18/2017	<0.0005 (D1)	<0.0005 (D1)	0.0014 (D)	0.00069 (D)	0.00098 (D)	
1/19/2017						0.00091 (D)
2/14/2017	0.0037 (D)	0.0036 (D)	0.00385 (D)	0.0034 (D)	0.0062 (D)	
2/15/2017						0.00385 (D)
2/28/2017	0.0011 (D)	0.0011 (D)	0.0014 (D)	0.0011 (D)	0.00091 (D)	
3/1/2017						0.00082 (D)
11/13/2017	<0.0005 (D1)					
11/14/2017						<0.0005 (D1)
2/14/2018	<0.002	<0.001	<0.002	<0.001 (D)	<0.001	
2/15/2018						<0.0004
9/25/2018	<0.0005 (D)	<0.0005	<0.0005	<0.0005	<0.0005	
9/26/2018						<0.0005 (D1)
5/14/2019	<0.0005	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	
5/15/2019						<0.0005 (D1D)
9/24/2019	<0.0005 (D1D)					
9/25/2019						<0.0005 (D1D)
Mean	0.001252	0.0007342	0.001404	0.00113	0.001345	0.001268
Std. Dev.	0.00176	0.0009069	0.001786	0.001615	0.002046	0.002161
Upper Lim.	0.0037	0.0011	0.00385	0.0034	0.0056	0.00385
Lower Lim.	0.0002	0.0002	0.00045	0.0002	0.0002	0.0002

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium, Total Analysis Run 1/13/2020 11:52 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Confidence Interval

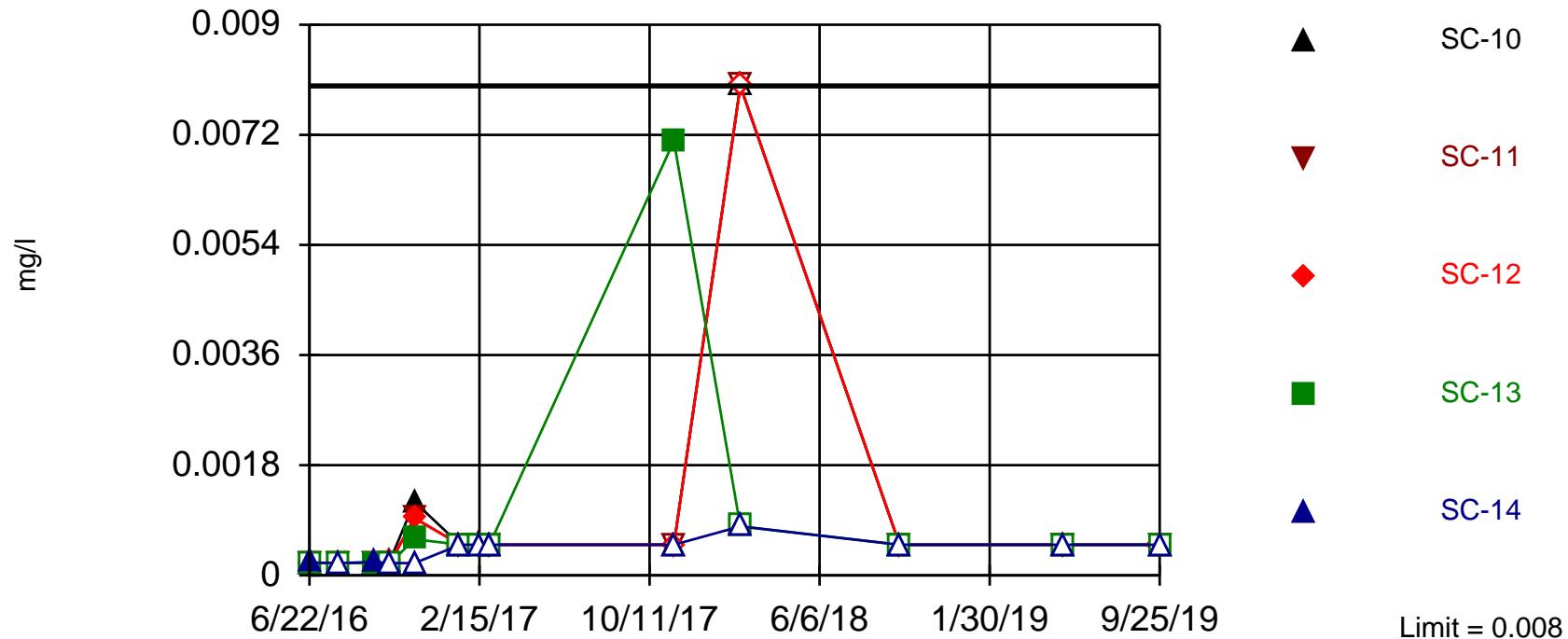
Constituent: Thallium, Total (mg/l) Analysis Run 1/13/2020 11:54 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	SC-11	SC-12	SC-13	SC-14
6/22/2016	<0.0002	<0.0002	<0.0002	<0.0002
8/3/2016	<0.0002	<0.0002	<0.0002	<0.0002
9/20/2016	<0.0002 (D)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)
10/13/2016	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)
11/16/2016	0.0063 (D)	0.006 (D)	0.0029 (D)	0.0024 (D)
1/19/2017	0.0012 (D)	0.0014 (D)	0.0015 (D)	0.0014 (D)
2/15/2017	0.0038 (D)	0.0038 (D)	0.0038 (D)	0.0035 (D)
3/1/2017	0.00077 (D)	0.00076 (D)	0.00077 (D)	0.00075 (D)
11/14/2017	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
2/15/2018	<0.0004	<0.002	<0.001	<0.001
9/26/2018	<0.0005 (D1)	<0.0005	<0.0005 (D)	<0.0005
5/15/2019	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
9/24/2019		<0.0005 (D1D)		
9/25/2019	<0.0005 (D1D)		<0.0005 (D1D)	<0.0005
Mean	0.001175	0.001289	0.0009823	0.0009115
Std. Dev.	0.001815	0.001745	0.001129	0.0009954
Upper Lim.	0.0038	0.0038	0.0029	0.0024
Lower Lim.	0.0002	0.0002	0.0002	0.0002

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 65 background values. 81.54% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Antimony, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Antimony, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

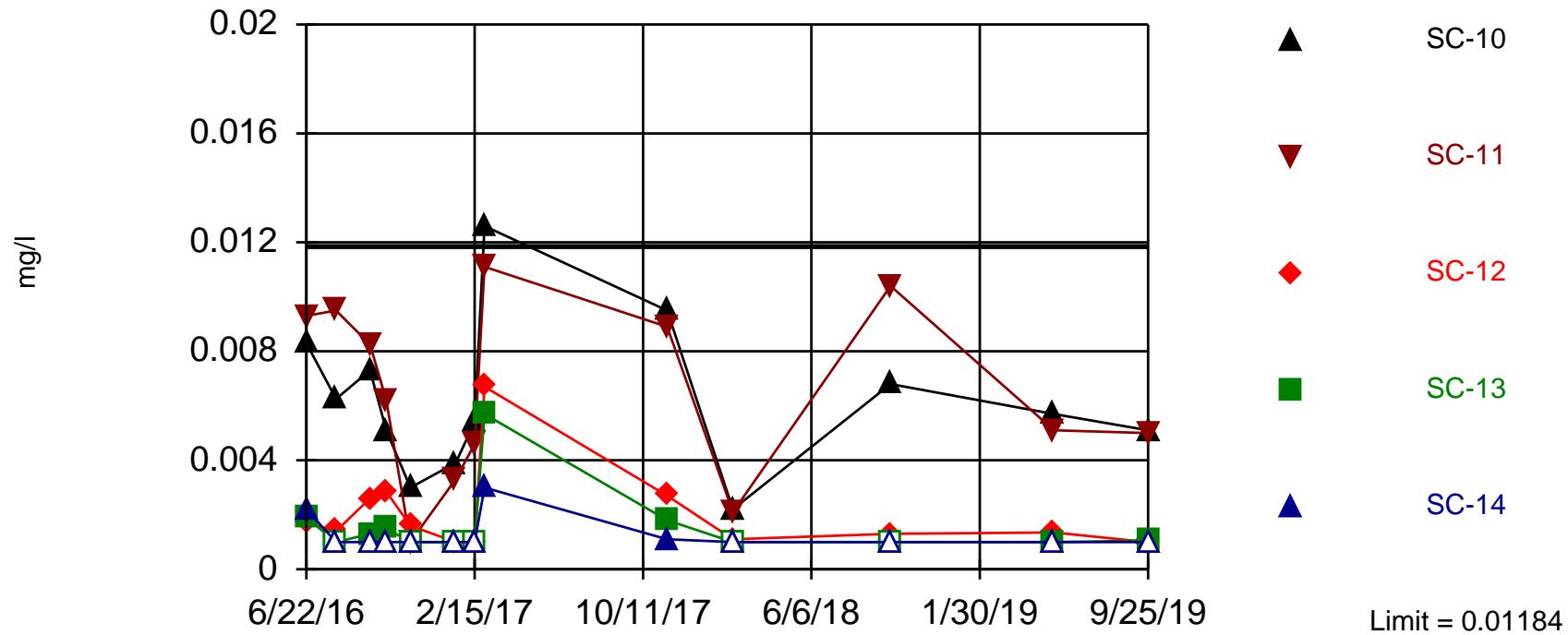
	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	<0.0002	<0.0002 (D)	0.00021	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
6/23/2016									0.00021	
6/27/2016										0.00065
8/2/2016	<0.0002 (D)	<0.0002					<0.0002		<0.0002	0.00061
8/3/2016			<0.0002	<0.0002	<0.0002 (D)	<0.0002		<0.0002		
9/19/2016	<0.0002 (D1)	<0.0002 (D1)					<0.0002 (D1)		<0.0002 (D1)	<0.0002 (D1)
9/20/2016			0.00022 (D)	0.0002 (D)	<0.0002 (D1)	<0.0002 (D1)		<0.0002 (D1)		
10/12/2016	<0.0002 (D1)	0.0004 (D)					<0.0002 (D1)		0.00026 (D)	0.00032 (D)
10/13/2016			<0.0002 (D1)	<0.0002 (D1)	0.00025 (D)	0.00023 (D)		0.0002 (D)		
11/15/2016	0.0016 (D)	0.0015 (D)					<0.0002 (D1)		0.0015 (D)	0.0015 (D)
11/16/2016			<0.0002 (D1)	0.00059 (D)	0.0012 (D)	0.00093 (D)		0.00094 (D)		
1/18/2017	<0.0005 (D1P)	<0.0005 (D1)					<0.0005 (D1P)		0.00055 (D)	<0.0005 (D1)
1/19/2017			<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)		<0.0005 (D1)		
2/14/2017	<0.0005 (D1)	<0.0005 (D1)					<0.0005 (D1)		<0.0005 (D1)	0.00066 (D)
2/15/2017			<0.0005 (D1)	<0.0005 (D1)	0.00054 (D)	<0.0005 (D1)		<0.0005 (D1)		
2/28/2017	<0.0005 (D1)	<0.0005 (D1)					<0.0005 (D1)		<0.0005 (D1)	<0.0005 (D1)
3/1/2017			<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)		<0.0005 (D1)		
11/13/2017	<0.0005 (D1)	<0.0005 (D1)					<0.0005 (D1)		<0.0005 (D1)	<0.0005 (D1)
11/14/2017			<0.0005 (D1)	0.0071 (DT)	<0.0005 (D1)	<0.0005 (D1)		<0.0005 (D1)		
2/14/2018	<0.008	<0.008					<0.0008		<0.0008 (D)	<0.0008
2/15/2018			<0.0008	<0.0008	<0.008	<0.008		<0.008		
9/25/2018	<0.0005 (D)	<0.0005					<0.0005		<0.0005	<0.0005
9/26/2018			<0.0005	<0.0005 (D)	<0.0005	<0.0005		<0.0005		
5/14/2019	<0.0005 (D1D)	<0.0005 (D1D)					<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)
5/15/2019			<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)		<0.0005 (D1D)		
9/24/2019	<0.0005 (D1D)	<0.0005 (D1D)					<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
9/25/2019			<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)		<0.0005 (D1D)		

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.06086, Std. Dev.=0.02244, n=64, 14.06% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9519, critical = 0.947. Kappa = 2.138 (c=23, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002288. Individual comparison alpha = 0.000458. Comparing 5 points to limit.

Constituent: Arsenic, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

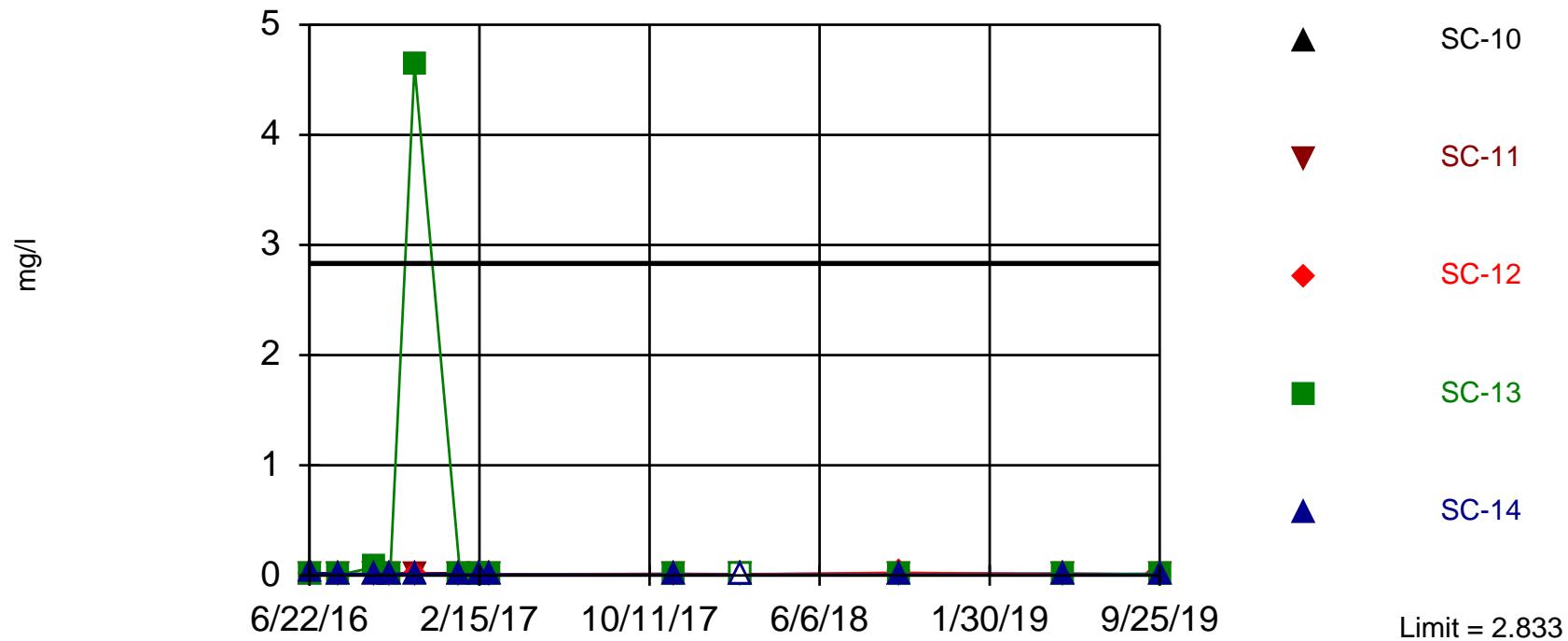
Constituent: Arsenic, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-14	SC-13	SC-12	SC-11	CC-1	FC-2	SC-10	FC-3A	FC-3B
6/22/2016	0.0042	0.0022	0.0019	0.0017	0.0093	0.0109 (D)	0.0025	0.0083		
6/23/2016									0.0031	
6/27/2016										0.0026
8/2/2016	0.0025 (D)					0.0105	0.0016		0.0021	0.0031
8/3/2016	<0.001	<0.001		0.0014	0.0095			0.00625 (D)		
9/19/2016	0.0094 (D)					0.0089 (D)	0.0036 (D)		0.0029 (D)	0.0051 (D)
9/20/2016	<0.001 (D1)	0.0013 (D)		0.0026 (D)	0.00825 (D)			0.0073 (D)		
10/12/2016	0.0023 (D)					0.0071 (D)	<0.001 (D1)		0.001325 (D)	0.0056 (D)
10/13/2016	<0.001 (D1)	0.0015 (D)		0.00285 (D)	0.0062 (D)			0.0051 (D)		
11/15/2016	0.0036 (D)					0.0054 (D)	<0.001 (D1)		0.0018 (D)	0.007 (D)
11/16/2016	<0.001 (D1)	<0.001 (D)		0.0016 (D)	<0.001 (D1)			0.003 (D)		
1/18/2017	0.0061 (D)			<0.001 (D1)	0.0033 (D)		0.00255 (D)	0.0011 (D)		<0.001 (D1)
1/19/2017	<0.001 (D1)	<0.001 (D1)		<0.001 (D1)	0.0033 (D)			0.0039 (D)		0.0057 (D)
2/14/2017	<0.001 (D1)					0.00495 (D)	<0.001 (D1)			<0.001 (D1)
2/15/2017	<0.001 (D)	<0.001 (D1)		<0.001 (D1)	0.0046 (D)			0.0054 (D)		
2/28/2017	0.00625 (D)					0.011 (D)	0.0076 (D)		0.0069 (D)	0.0081 (D)
3/1/2017	0.003 (D)	0.0057 (D)		0.0067 (D)	0.0111 (D)			0.0126 (D)		
11/13/2017	0.0041 (D)					0.008 (D)	0.0025 (D)		0.0022 (D)	0.0064 (D)
11/14/2017	0.0011 (D)	0.0018 (D)		0.0027 (D)	0.0089 (D)			0.0095 (D)		
2/14/2018	<0.002						<0.001		0.00115 (D)	0.0026
2/15/2018	<0.001	<0.001		0.0011	0.0021			0.0022		
9/25/2018	0.005 (D)					0.0115	0.0014		0.003	0.0074
9/26/2018	<0.001	<0.001 (D)		0.0013	0.0104			0.0068		
5/14/2019	0.0029					0.0072 (D)	0.0013 (D)		0.0017 (D)	0.002 (D)
5/15/2019	<0.001 (D)	0.001 (D)		0.00135 (D)	0.0051 (D)			0.0057 (D)		
9/24/2019	0.00295 (D)				<0.001 (D1D)		0.0081 (D)	<0.001 (D1D)		0.0016 (D)
9/25/2019	<0.001 (D1D)	0.00105 (D)			0.005 (D)			0.0051 (D)		0.0044 (D)

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. 6.154% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Barium, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

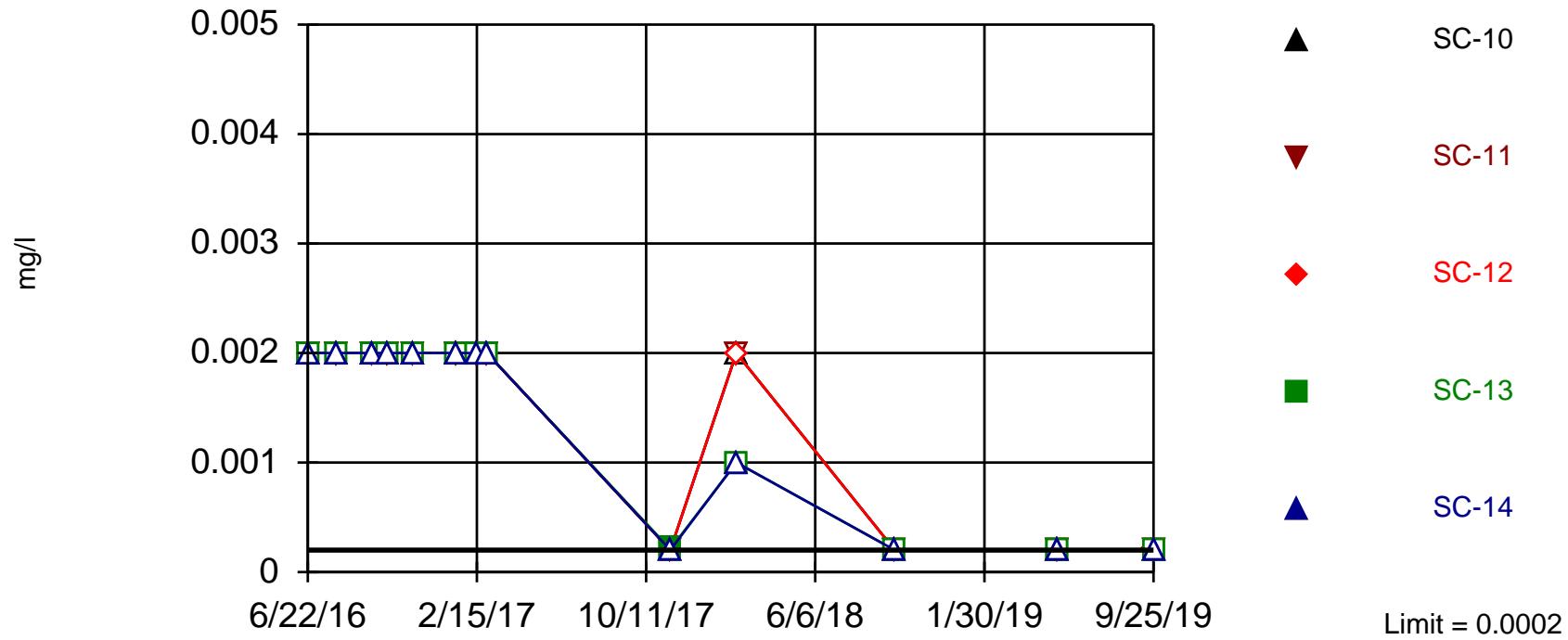
Constituent: Barium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-10	CC-1	SC-11	SC-12	SC-13	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	0.00954	0.0184	2.83285 (D)	0.017	0.0112	0.00979	0.00503	0.024		
6/23/2016								0.034		
6/27/2016										0.0336
8/2/2016	0.008725 (D)		0.00512				<0.005		0.0202	0.0253
8/3/2016		0.0138 (D)		0.0165	0.0133	0.00703		0.0131		
9/19/2016	0.00928		0.00542				0.00525 (D)		0.0218	0.0183
9/20/2016		0.013		0.009275 (D)		0.0736		0.0109		
10/12/2016	0.00905		0.00593				0.00536		0.03735 (D)	0.0184
10/13/2016		0.0141		0.0225	0.01415 (D)	0.00797		0.0163		
11/15/2016	0.0102		0.00608				0.00516		0.01735 (D)	0.0652
11/16/2016		0.0178		0.016	0.0178	4.629645 (D)		0.0136		
1/18/2017	0.00929		0.005675 (D)				0.00539		0.0164	0.0244
1/19/2017		0.0216		0.0117	0.0108	0.0075		0.00905		
2/14/2017	0.01		0.006005 (D)				0.00566		0.0167	0.023
2/15/2017		0.0145 (D)		0.0156	0.0127	0.00742		0.00766		
2/28/2017	0.009 (D)		<0.005				0.0054		0.0148	0.0208
3/1/2017		0.0105		0.00732	0.00781 (D)	0.00603		0.0063		
11/13/2017	0.0082 (D)		0.004 (D)				0.00435 (D)		0.0259 (D)	0.0154 (D)
11/14/2017		0.014 (D)		0.01395 (D)	0.0063 (D)	0.006 (D)		0.0052 (D)		
2/14/2018	0.0105		<0.01				<0.01		0.01205 (D)	0.0196
2/15/2018		0.0124		0.0089	0.0079	<0.01		<0.01		
9/25/2018	0.00665 (D)		0.0039				0.004		0.021	0.037
9/26/2018		0.0165		0.0099	0.0245	0.00575 (D)		0.0057		
5/14/2019	0.0073		0.0044 (D)				0.0043 (D)		0.0265 (D)	0.0146 (D)
5/15/2019		0.0168 (D)		0.0086 (D)	0.00755 (D)	0.0046 (D)		0.005 (D)		
9/24/2019	0.0073 (D)		0.0041 (D)		0.007 (D)		0.0056 (D)		0.0276 (D)	0.0268 (D)
9/25/2019		0.0124 (D)		0.0099 (D)		0.0168 (D)		0.0049 (D)		

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values ($n = 65$) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Beryllium, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Beryllium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

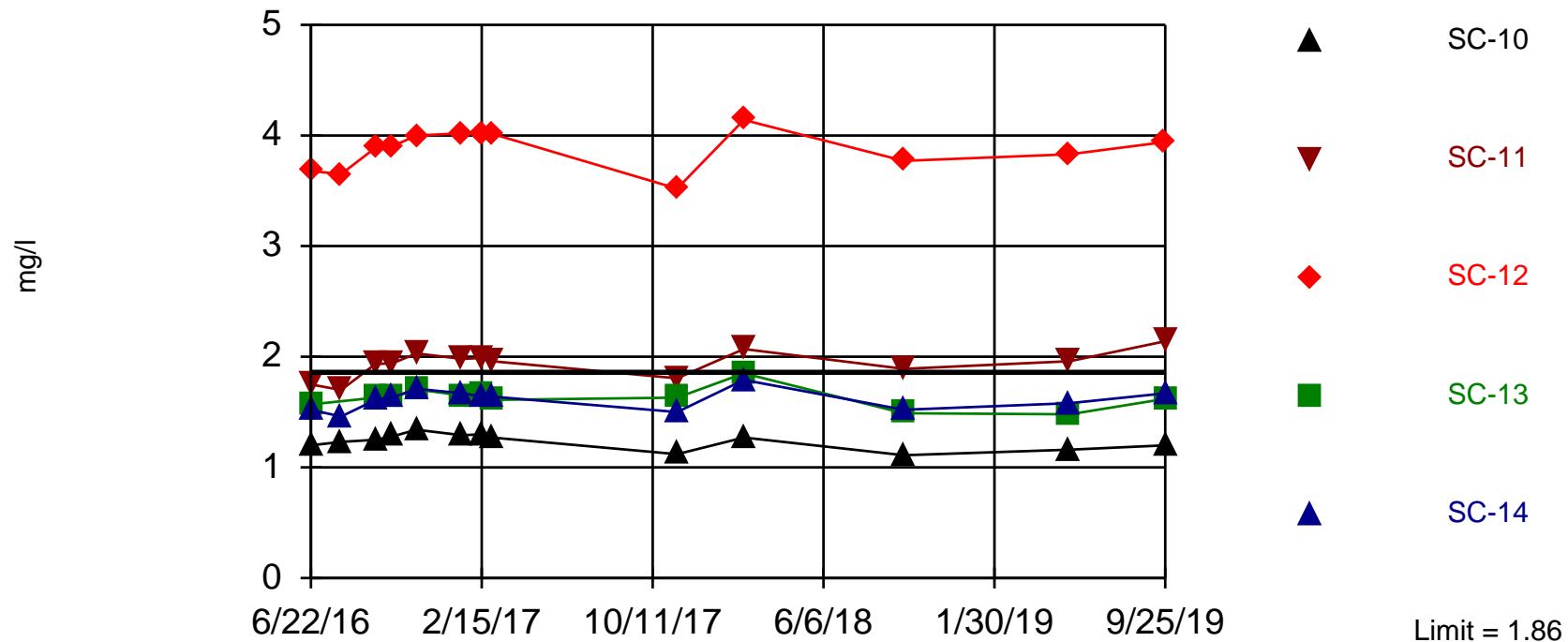
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	<0.002	<0.002 (D)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		
6/23/2016									<0.002	
6/27/2016										<0.002
8/2/2016	<0.002 (D)	<0.002		<0.002	<0.002 (D)	<0.002	<0.002		<0.002	<0.002
8/3/2016								<0.002		
9/19/2016	<0.002	<0.002		<0.002	<0.002 (D)	<0.002		<0.002 (D)	<0.002	<0.002
9/20/2016				<0.002	<0.002	<0.002		<0.002 (D)		
10/12/2016	<0.002	<0.002		<0.002	<0.002	<0.002 (D)			<0.002 (D)	<0.002
10/13/2016				<0.002	<0.002	<0.002 (D)			<0.002 (D)	<0.002
11/15/2016	<0.002	<0.002		<0.002	<0.002		<0.002		<0.002 (D)	<0.002
11/16/2016				<0.002	<0.002 (D)	<0.002	<0.002		<0.002	
1/18/2017	<0.002	<0.002 (D)		<0.002	<0.002	<0.002	<0.002		<0.002	<0.002
1/19/2017				<0.002	<0.002	<0.002		<0.002		
2/14/2017	<0.002	<0.002 (D)		<0.002	<0.002 (D)	<0.002	<0.002		<0.002	<0.002
2/15/2017				<0.002	<0.002	<0.002		<0.002		
2/28/2017	<0.002 (D)	<0.002		<0.002	<0.002	<0.002 (D)		<0.002	<0.002	<0.002
3/1/2017				<0.002	<0.002	<0.002 (D)		<0.002		
11/13/2017	<0.0002 (D1)	<0.0002 (D1)					<0.0002 (D1)		<0.0002 (D1)	<0.0002 (D1)
11/14/2017				<0.0002 (D1)	0.00021 (D)	<0.0002 (D1)	<0.0002 (D1)		<0.0002 (D1)	
2/14/2018	<0.001 (T)	<0.001 (T)		<0.001 (T)	<0.001 (T)	<0.002	<0.002		<0.0004 (T)	<0.0004 (TD)
2/15/2018				<0.001 (T)	<0.001 (T)	<0.002	<0.002		<0.002	<0.001 (T)
9/25/2018	<0.0002 (D)	<0.0002		<0.0002	<0.0002 (D)	<0.0002	<0.0002		<0.0002	<0.0002
9/26/2018				<0.0002	<0.0002 (D)	<0.0002	<0.0002		<0.0002	
5/14/2019	<0.0002	<0.0002 (D1D)		<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)		<0.0002 (D1D)	<0.0002 (D1D)
5/15/2019				<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)		<0.0002 (D1D)	
9/24/2019	<0.0002 (D1D)	<0.0002 (D1D)		<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (DD1)		<0.0002 (DD1)
9/25/2019				<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)		<0.0002 (D1D)	<0.0002 (D1D)

Exceeds Limit: SC-11, SC-12

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Prediction Limit

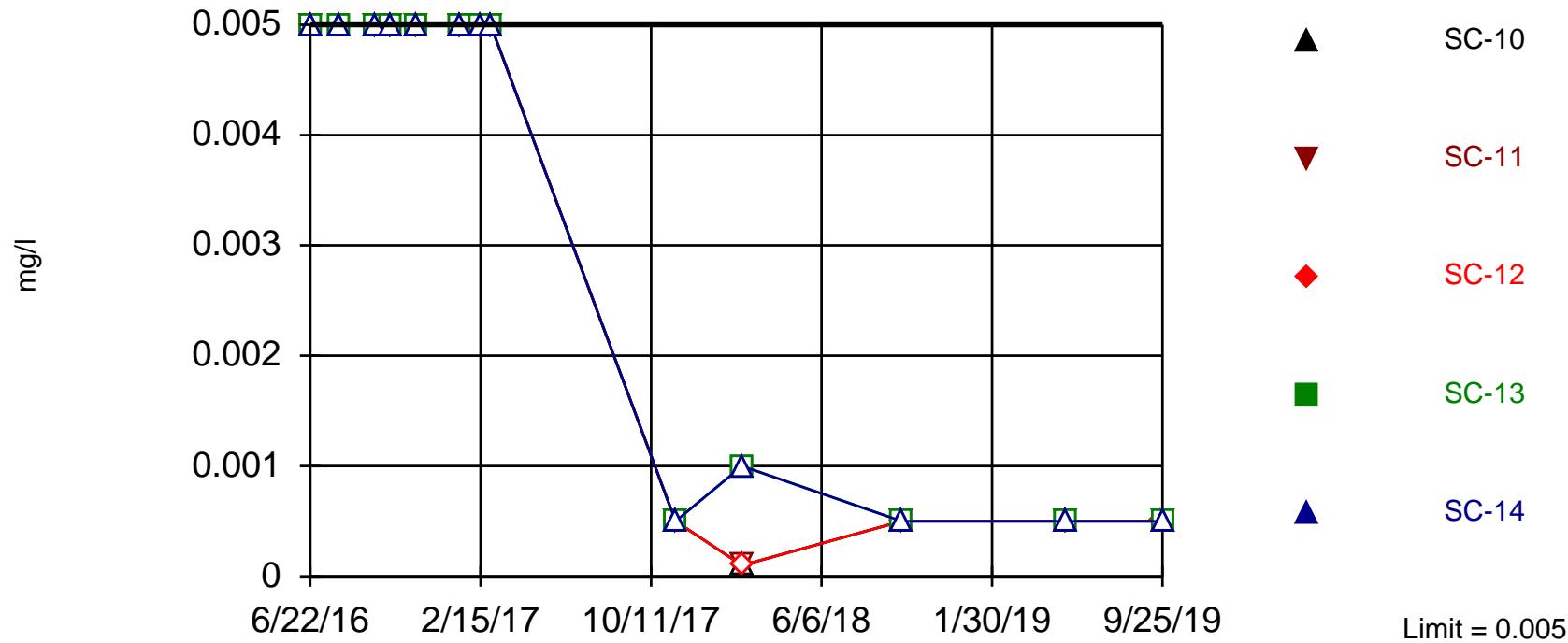
Constituent: Boron, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-10	CC-1	SC-11	SC-12	FC-2	SC-14	SC-13	FC-3A	FC-3B
6/22/2016	0.976 (T)	1.2	1.07 (D)	1.75	3.68	0.901 (T)	1.52	1.57		
6/23/2016									1.31	
6/27/2016										1.09
8/2/2016	0.9285 (D)		1.03			0.902			1.08	1.28
8/3/2016		1.23 (D)		1.7	3.65		1.46			
9/19/2016	0.932		1.05			0.937 (D)			1.2	1.46
9/20/2016		1.25		1.935 (D)	3.89		1.61	1.63		
10/12/2016	0.931		1.1			0.923			1.175 (D)	1.53
10/13/2016		1.28		1.94	3.9 (D)		1.63	1.63		
11/15/2016	1.03		1.12			0.936			1.185 (D)	1.68
11/16/2016		1.34		2.03	4		1.71	1.705 (D)		
1/18/2017	0.98		1.125 (D)			0.946			1.19	1.66
1/19/2017		1.29		1.98	4.02		1.67	1.65		
2/14/2017	0.972		1.115 (D)			0.934			1.14	1.59
2/15/2017		1.3 (D)		1.99	4.02		1.64	1.67		
2/28/2017	0.9495 (D)		1.03 (D)			0.956 (D)			1.14 (D)	1.73 (D)
3/1/2017		1.27 (DT1)		1.96 (DT1)	4.015 (DT1)		1.64 (D)	1.61 (DT1)		
11/13/2017	0.884		1.04			0.925 (D)			1.05	1.69
11/14/2017		1.12		1.805 (D)	3.52		1.5	1.63		
2/14/2018	1.05 (D)		1.08 (D)			0.957 (D)			1.13 (D)	1.86 (D)
2/15/2018		1.27 (DT)		2.07 (DT)	4.14 (DT)		1.79 (DT)	1.85 (DT)		
9/25/2018	0.887 (D)		1 (D)			0.887 (D)			1.03 (D)	1.73 (D)
9/26/2018		1.11 (D)		1.89 (D)	3.77 (D)		1.52 (D)	1.49 (D)		
5/14/2019	1.02		1.07			0.926			1.04 (D)	1.3
5/15/2019		1.16 (T)		1.96 (T)	3.83 (TD)		1.58 (T)	1.48 (T)		
9/24/2019	0.969 (D)		1.05		3.94	0.948			1.07	1.42
9/25/2019		1.2		2.14			1.67	1.62 (D)		

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 65 background values. 95.38% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Cadmium, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Cadmium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

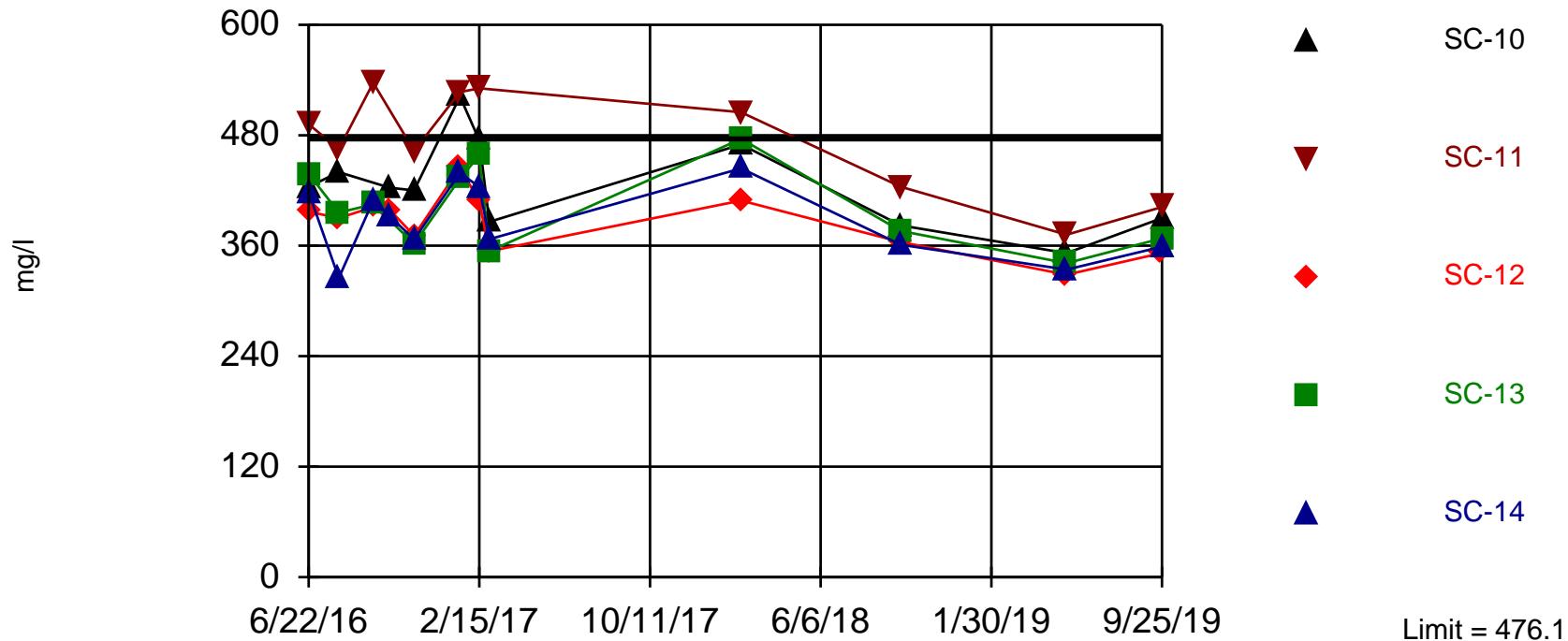
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-10	CC-1	SC-11	SC-12	SC-13	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	<0.005	<0.005	<0.005 (D)	<0.005	<0.005	<0.005	<0.005	<0.005		
6/23/2016									<0.005	
6/27/2016										<0.005
8/2/2016	<0.005 (D)		<0.005				<0.005		<0.005	<0.005
8/3/2016		<0.005 (D)				<0.005	<0.005		<0.005	
9/19/2016	<0.005		<0.005				<0.005		<0.005	<0.005
9/20/2016		<0.005		<0.005 (D)	<0.005	<0.005			<0.005	
10/12/2016	<0.005		<0.005				<0.005		<0.005 (D)	<0.005
10/13/2016		<0.005		<0.005	<0.005 (D)	<0.005			<0.005	
11/15/2016	<0.005		<0.005				<0.005		<0.005 (D)	<0.005
11/16/2016		<0.005		<0.005	<0.005	<0.005 (D)			<0.005	
1/18/2017	<0.005		<0.005 (D)				<0.005		<0.005	<0.005
1/19/2017		<0.005		<0.005	<0.005	<0.005			<0.005	
2/14/2017	<0.005		<0.005 (D)				<0.005		<0.005	<0.005
2/15/2017		<0.005 (D)		<0.005	<0.005	<0.005			<0.005	
2/28/2017	<0.005 (D)		<0.005				<0.005		<0.005	<0.005
3/1/2017		<0.005		<0.005	<0.005 (D)	<0.005			<0.005	
11/13/2017	<0.0005 (D1)		<0.0005 (D1)				<0.0005 (D1)		<0.0005 (D1)	<0.0005 (D1)
11/14/2017		<0.0005 (D1)		<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)			<0.0005 (D1)	
2/14/2018	<0.001		<0.001				0.00031		0.000365 (D)	0.00032
2/15/2018		<0.0001		<0.0001	<0.0001	<0.001			<0.001	
9/25/2018	<0.0005 (D)		<0.0005				<0.0005		<0.0005	<0.0005
9/26/2018		<0.0005		<0.0005	<0.0005	<0.0005 (D)			<0.0005	
5/14/2019	<0.0005		<0.0005 (D1D)				<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)
5/15/2019		<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)			<0.0005 (D1D)	
9/24/2019	<0.0005 (D1D)		<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)			<0.0005 (D1D)	<0.0005 (D1D)
9/25/2019		<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)			<0.0005 (D1D)	

Within Limit

Prediction Limit

Interwell Parametric



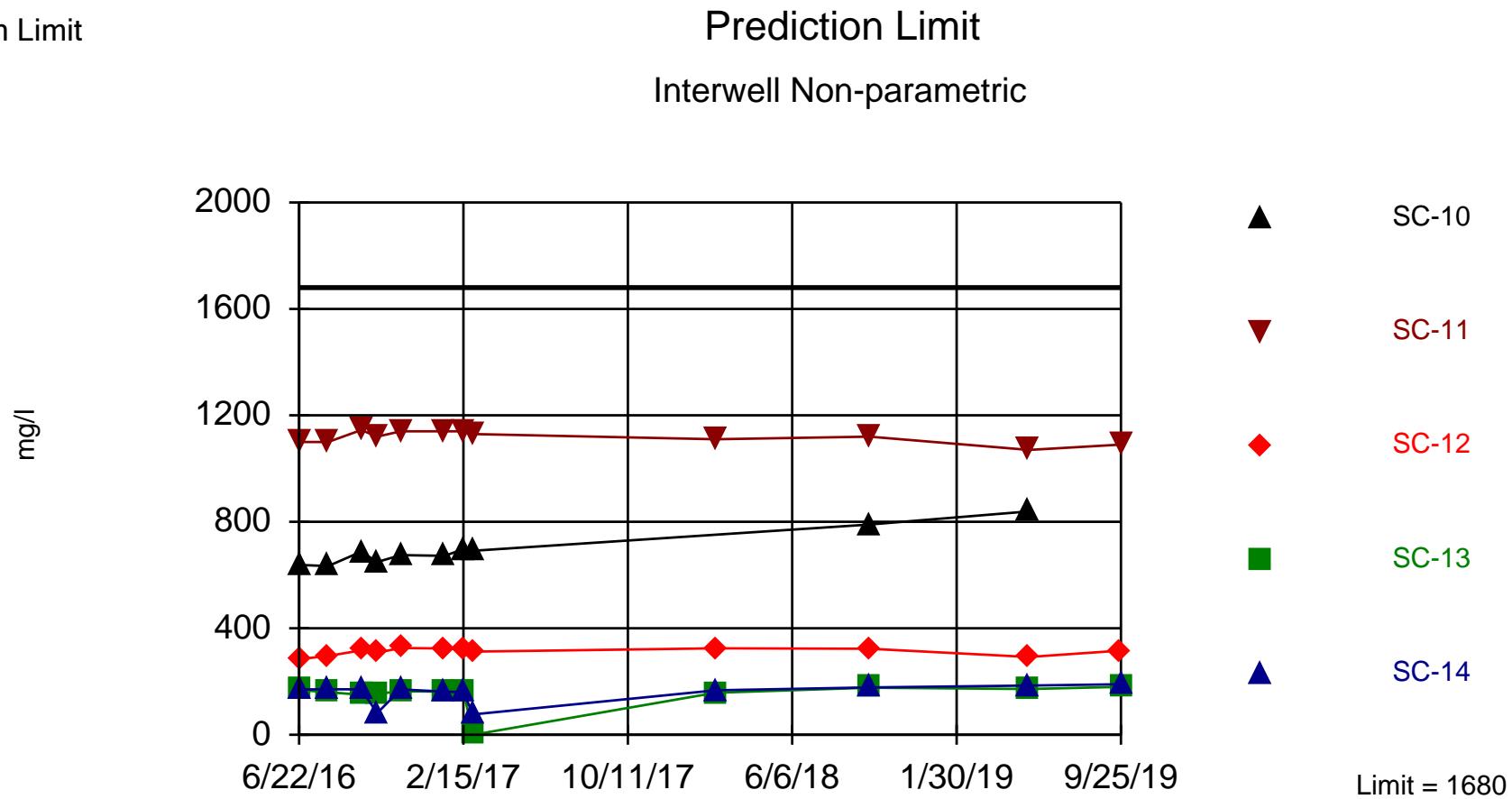
Prediction Limit

Constituent: Calcium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	SC-10	SC-11	SC-12	CC-1	SC-14	SC-13	FC-3A	FC-3B
6/22/2016	404	405 (T1D)	424 (DT1)	492 (DT1)	397 (DT1)	472 (DT1)	418 (DT1)	438 (DT1)		
6/23/2016									440 (DT1)	453 (DT1)
6/27/2016										
8/2/2016	410 (DT1)	440 (DT1)		440 (DT1)	465 (DT1)	390 (DT1)		325	396 (DT1)	417 (DT1) 412 (DT1)
8/3/2016										
9/19/2016	388 (DT1)	393.5 (DT1)				483 (DT1)			433 (DT1)	424 (DT1)
9/20/2016					537 (DT1)	402 (DT1)		409 (D)	405 (D)	
10/12/2016	389 (D)	390 (D)					398 (DT1)			398 (DT1)
10/13/2016					423 (DT1)		399 (DT1)			
11/15/2016									385 (D)	331 (D)
11/16/2016					420 (DT1)	463 (DT1)	371 (DT1)		362 (DT1)	
1/18/2017	438 (T1D)	438 (T1D)							445 (DT1)	282 (DT1)
1/19/2017					522 (DT1)	527 (DT1)	445 (D)	439 (DT1)	433 (DT1)	
2/14/2017	408 (DT1)						431.5 (DT1)			420 (DT1) 296 (DT1)
2/15/2017					474.5 (DT1)	531 (DT1)	408 (DT1)	424 (DT1)	458 (DT1)	
2/28/2017	376.5 (DT1)	381 (DT1)					379 (DT1)		390 (DT1)	325 (DT1)
3/1/2017					386 (DT1)		354 (DT1)	367 (DT1)	354 (DT1)	
2/14/2018	397 (DT)	387 (DT)					392 (DT)		401 (DT)	246 (DT)
2/15/2018					470 (DT)	505 (DT)	409 (DT)	444 (DT)	476 (DT)	
9/25/2018	370 (D)	368 (D)							386 (D)	233 (D)
9/26/2018					382 (D)	424 (D)	364 (D)	361 (D)	376 (D)	
5/14/2019	337 (T1)	344					340 (T1)			353.5 (T1D) 196 (T1)
5/15/2019					352 (T1)	372 (T1)	328.5 (T1D)		334 (T1) 341 (T1)	
9/24/2019	368.5 (D)	374 (D)				352 (DT1)	400 (D)			379 (D) 201 (D)
9/25/2019					390	402 (D)		359 (DT1)	368 (DT1)	

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit.

Constituent: Chloride Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

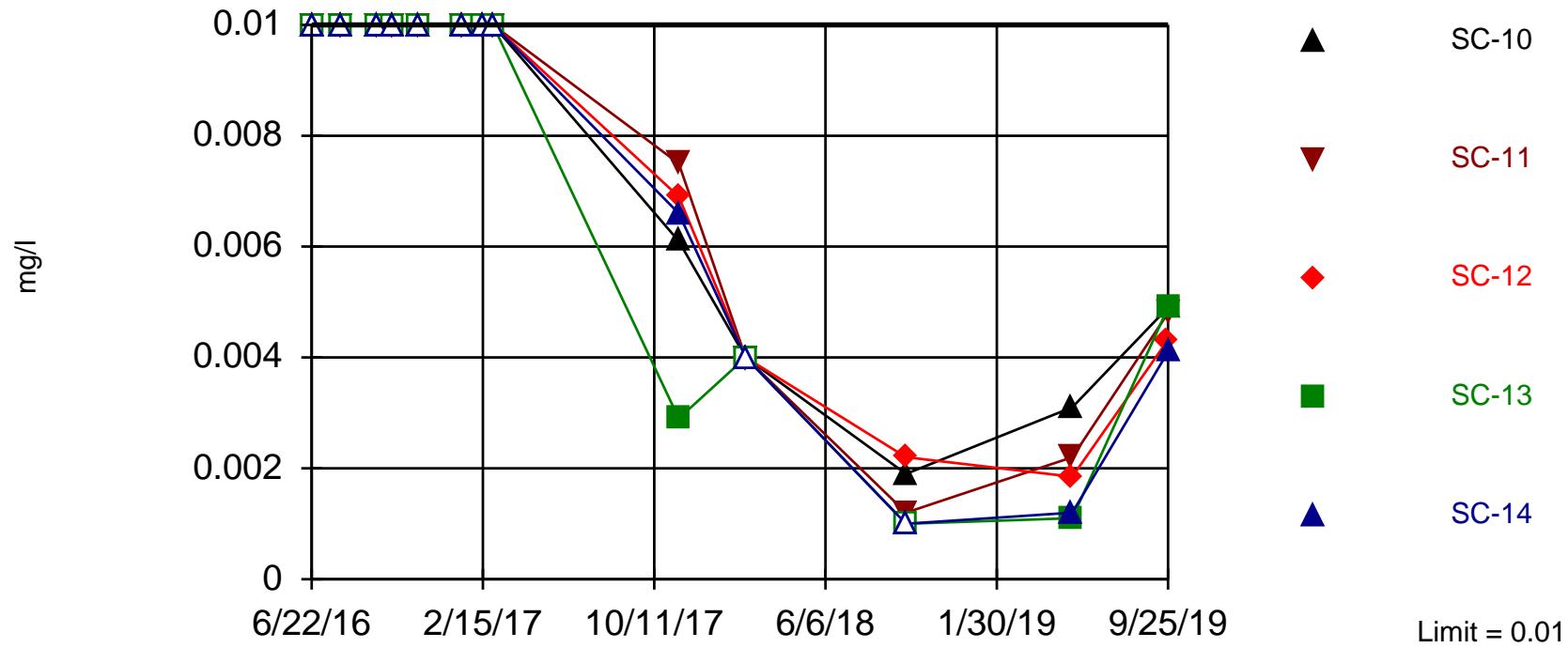
Constituent: Chloride (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-13	SC-12	SC-11	SC-10	SC-14	CC-1	FC-2	FC-3A	FC-3B
6/22/2016	772 (D)	168 (D)	284 (D)	1100 (D)	638 (D)	170 (D)	1535 (D)	132 (D)		
6/23/2016									92.5 (D)	
6/27/2016										319 (D)
8/2/2016	761.5 (D)						1540 (D)	128 (D)	91 (D)	504 (D)
8/3/2016		160 (D)	296 (D)	1100 (D)	633.5 (D)	171 (D)				
9/19/2016	760 (D)		150 (D)	317 (D)	1145 (D)	688 (D)	171 (D)		130 (D)	96.3 (D)
9/20/2016									96.3 (D)	594 (D)
10/12/2016	750 (D)		154 (D)	308.5 (D)	1120 (D)	649 (D)	81.2 (D)		124 (D)	99.55 (D)
10/13/2016										687 (D)
11/15/2016	71.2 (D)		163 (D)	326 (D)	1140 (D)	675 (D)	170 (D)		127 (D)	101.5 (D)
11/16/2016										676 (D)
1/18/2017	741 (D)		162 (D)	324 (D)	1140 (D)	672 (D)	162 (D)		125 (D)	104 (D)
1/19/2017										631 (D)
2/14/2017	738 (D)						1515 (D)	123 (D)	107 (D)	732 (D)
2/15/2017		165 (D)	320 (D)	1140 (D)	697.5 (D)	160 (D)				
2/28/2017	769 (D)		0.163 (D)	312.5 (D)	1130 (D)	691 (D)	76.5 (D)		122 (D)	107 (D)
3/1/2017										818 (D)
2/14/2018	756 (D)		158 (DT)	325 (TD)	1110 (DT)		167 (DT)		124 (D)	115.5 (D)
2/15/2018										652 (D)
9/25/2018	783.5 (D)		177 (D)	323 (D)	1120 (D)	790 (D)	178 (D)		118 (D)	122 (D)
9/26/2018										1210 (D)
5/14/2019	782 (D)		172 (D)	292 (D)	1070 (D)	839 (D)	185 (D)		113 (D)	124 (D)
5/15/2019										199 (D)
9/24/2019	811 (D)			316 (D)				1580 (D)	116 (D)	127 (D)
9/25/2019		180 (D)			1090 (D)		190 (D)			220 (D)

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 65 background values. 69.23% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Chromium, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Chromium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

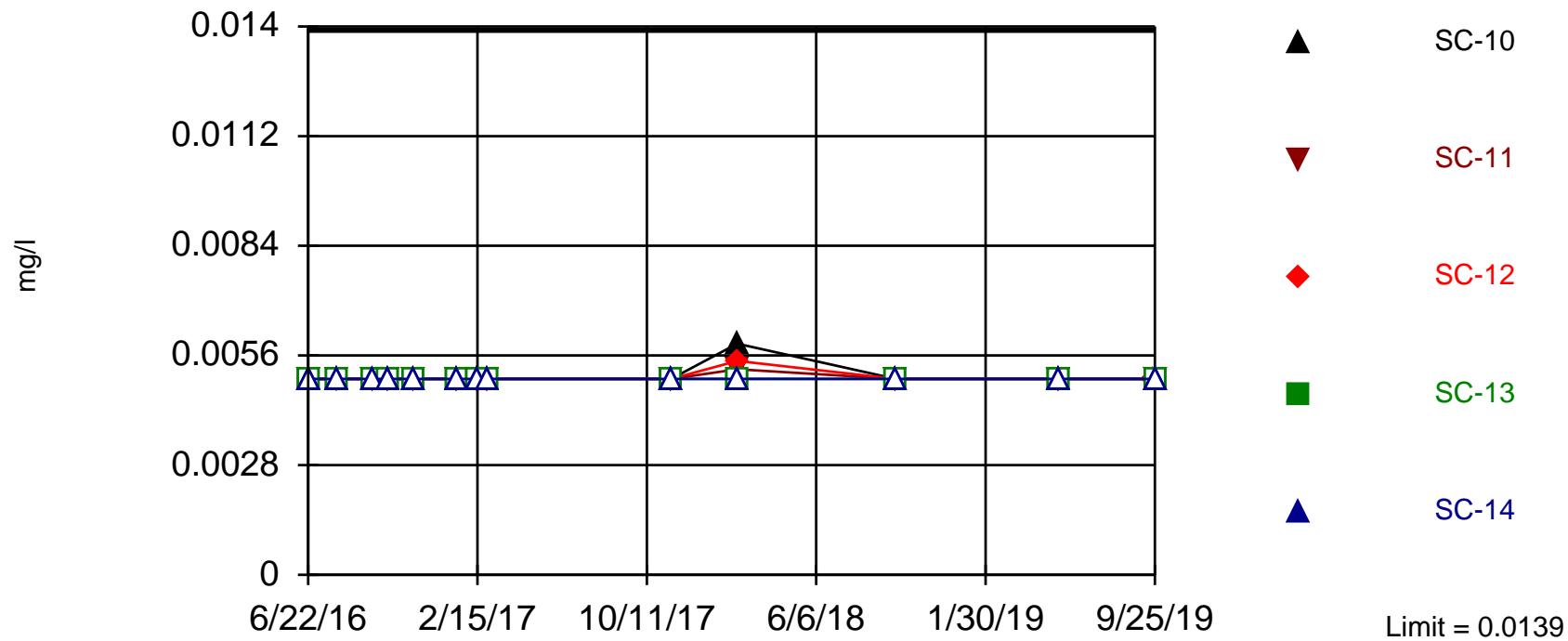
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	<0.01	<0.01 (D)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
6/23/2016									<0.01	
6/27/2016										<0.01
8/2/2016	<0.01 (D)	<0.01		<0.01	<0.01 (D)	<0.01	<0.01		<0.01	<0.01
8/3/2016								<0.01		
9/19/2016	<0.01	<0.01		<0.01	<0.01 (D)	<0.01		<0.01 (D)	<0.01	<0.01
9/20/2016									<0.01 (D)	
10/12/2016	<0.01	<0.01		<0.01	<0.01	<0.01			<0.01 (D)	<0.01
10/13/2016									<0.01	
11/15/2016	<0.01	<0.01		<0.01	<0.01 (D)	<0.01			<0.01 (D)	<0.01
11/16/2016									<0.01	
1/18/2017	<0.01	<0.01 (D)		<0.01	<0.01	<0.01			<0.01	<0.01
1/19/2017										
2/14/2017	<0.01	<0.01 (D)		<0.01	<0.01 (D)	<0.01			<0.01	<0.01
2/15/2017									<0.01	
2/28/2017	<0.01 (D)	<0.01		<0.01	<0.01	<0.01 (D)			<0.01	<0.01
3/1/2017										
11/13/2017	0.006 (D)	0.0064 (D)					0.0051 (D)		0.0062 (D)	0.0086 (D)
11/14/2017			0.0066 (D)	0.0029 (D)	0.0061 (D)	0.0069 (D)		0.0075 (D)		
2/14/2018	<0.004	<0.004		<0.004	<0.004	<0.004		<0.004		<0.004 (D)
2/15/2018								<0.004		0.0058
9/25/2018	0.001 (D)	0.0017		<0.001	<0.001 (D)	0.0019	0.0022			0.0025
9/26/2018								0.0012		0.0061
5/14/2019	0.0013	0.0018 (D)		0.0012 (D)	0.0011 (D)	0.0031 (D)	0.00185 (D)	<0.001 (D)	0.0031 (D)	0.0049 (D)
5/15/2019									0.0022 (D)	
9/24/2019	0.0042 (D)	0.0036 (D)		0.0041 (D)	0.0049 (D)	0.0049 (D)	0.0043 (D)	0.0035 (D)		0.0054 (D)
9/25/2019									0.0048 (D)	0.0089 (D)

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 63 background values. 84.13% NDs. Annual per-constituent alpha = 0.004816. Individual comparison alpha = 0.0004826 (1 of 2). Comparing 5 points to limit.

Constituent: Cobalt, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Cobalt, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

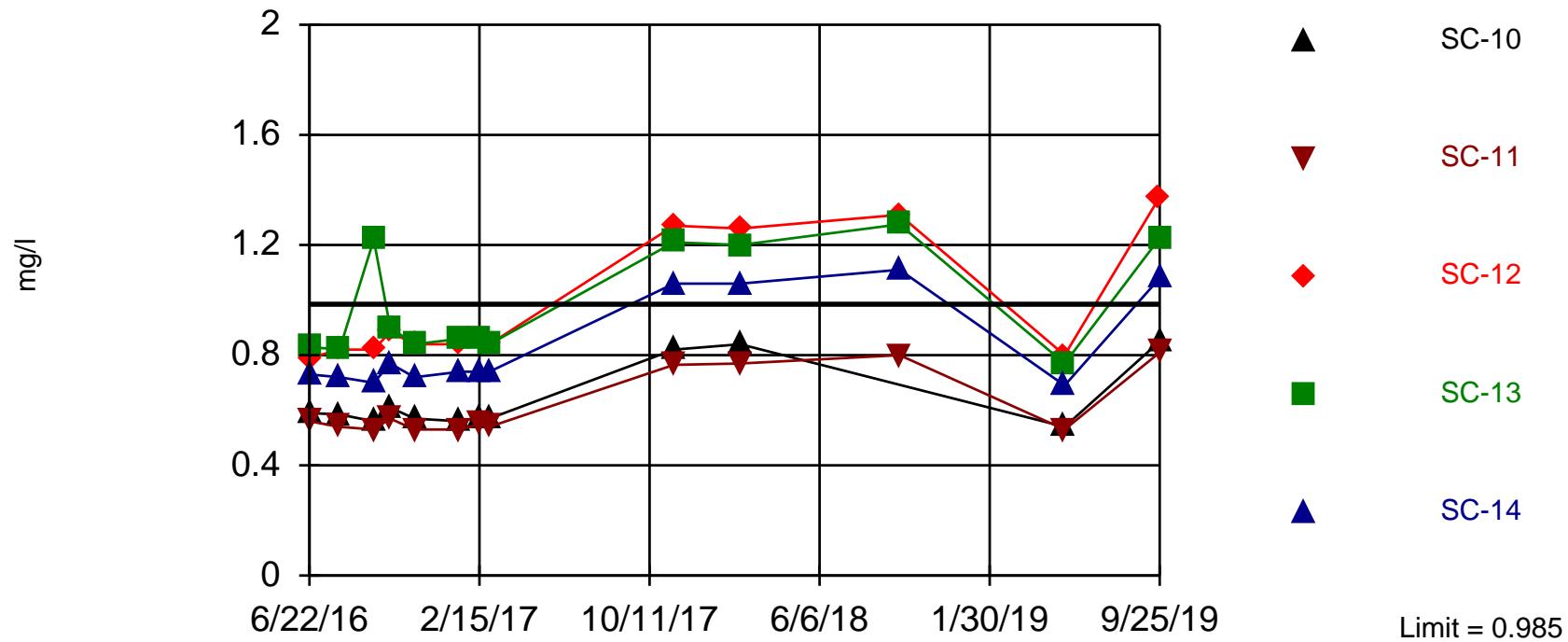
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-14	SC-13	SC-12	SC-11	CC-1	FC-2	SC-10	FC-3A	FC-3B
6/22/2016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005 (D)	<0.005	<0.005		
6/23/2016									<0.005	
6/27/2016										0.0078
8/2/2016	<0.005 (D)						<0.005		<0.005	0.005
8/3/2016		<0.005	<0.005	<0.005	0.005			<0.005 (D)		
9/19/2016	<0.005		<0.005	<0.005	<0.005 (D)		<0.005	<0.005 (D)		<0.005
9/20/2016		<0.005		<0.005					<0.005 (D)	<0.005
10/12/2016	<0.005			<0.005			<0.005	<0.005		
10/13/2016		<0.005	<0.005	<0.005 (D)	<0.005				<0.005 (D)	<0.005
11/15/2016	<0.005						<0.005	<0.005		
11/16/2016		<0.005	<0.005 (D)	<0.005	<0.005				<0.005	
1/18/2017	<0.005						<0.005 (D)	<0.005		<0.005
1/19/2017		<0.005	<0.005	<0.005	<0.005				<0.005	0.00778
2/14/2017	<0.005						<0.005 (D)	<0.005		<0.005
2/15/2017		<0.005	<0.005	<0.005	<0.005				<0.005 (D)	
2/28/2017	<0.005 (D)						<0.005	<0.005		<0.005
3/1/2017		<0.005	<0.005	<0.005 (D)	<0.005				<0.005	0.00553
11/13/2017	<0.005						<0.005	<0.005 (D)		<0.005
11/14/2017		<0.005	<0.005	<0.005	<0.005 (D)				<0.005	0.0118
2/14/2018						0.00636	<0.005			<0.005 (D)
2/15/2018	<0.005		<0.005	0.00546	0.00525				0.0059	
9/25/2018	<0.005 (DD1)					<0.005 (DD1)	<0.005 (DD1)			<0.005 (DD1)
9/26/2018		<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)				<0.005 (DD1)	0.0108 (D)
5/14/2019	<0.005						<0.005	<0.005		<0.005 (D)
5/15/2019		<0.005	<0.005	<0.005	<0.005				<0.005	<0.005
9/24/2019	<0.005 (D)				<0.005		<0.005	<0.005		<0.005
9/25/2019		<0.005	<0.005 (D)		<0.005			<0.005		

Exceeds Limit: SC-12, SC-13, SC-14

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Fluoride, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Fluoride, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

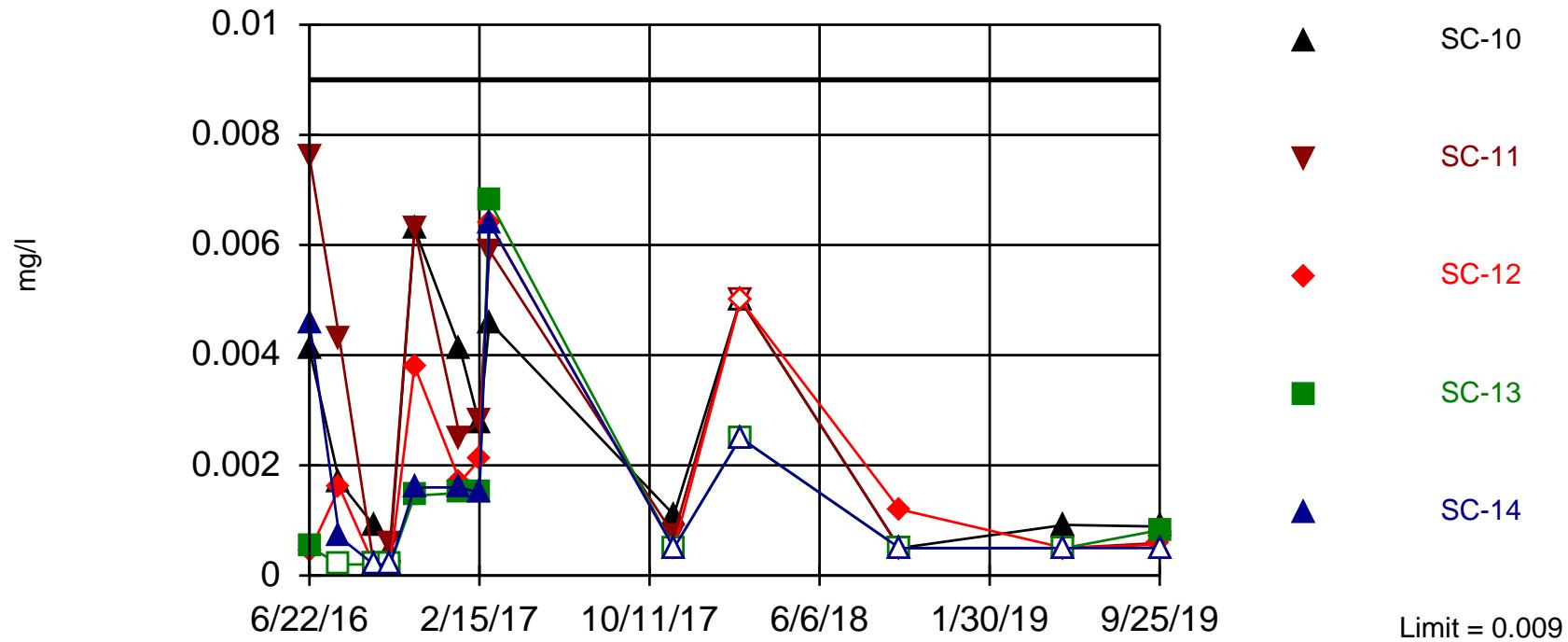
	FC-1	SC-13	SC-12	SC-11	SC-14	SC-10	CC-1	FC-2	FC-3A	FC-3B
6/22/2016	0.12 (T)	0.83 (T)	0.79 (T)	0.56 (T)	0.73 (T)	0.59 (T)	0.215 (TD)	0.51 (T)		
6/23/2016									0.46 (T)	
6/27/2016										0.55
8/2/2016	0.06006 (TD)						0.21 (T)	0.5 (T)	0.46 (T)	0.00048 (T)
8/3/2016		0.82 (T)	0.82 (T)	0.54 (T)	0.72 (T)	0.585 (TD)				
9/19/2016	0.13	1.22 (D)	0.82	0.53 (D)	0.7	0.56		0.22	0.985 (D)	0.48
9/20/2016										0.48
10/12/2016	0.12 (T)						0.21 (T)	0.52 (T)	0.465 (TD)	0.51 (T)
10/13/2016		0.9 (T)	0.885 (TD)	0.57 (T)	0.77 (T)	0.61 (T)				
11/15/2016	0.12 (T)						0.2 (T)	0.51 (T)	0.46 (TD)	0.46 (T)
11/16/2016		0.84 (D)	0.84 (T)	0.53 (T)	0.72 (T)	0.57 (T)				
1/18/2017	0.13 (T)						0.2 (TD)	0.52 (T)	0.46 (T)	0.56 (T)
1/19/2017		0.86 (T)	0.84 (T)	0.53 (T)	0.74 (T)	0.56 (T)				
2/14/2017	0.13 (T)						0.22 (TD)	0.55 (T)	0.48 (T)	0.51 (T)
2/15/2017		0.86 (T)		0.55 (T)	0.74 (T)	0.575 (TD)				
2/28/2017	0.13 (TD)						0.22 (T)	0.53 (T)	0.47 (T)	0.42 (T)
3/1/2017		0.84 (T)	0.84 (TD)	0.54 (T)	0.74 (T)	0.57 (T)				
11/13/2017	0.2	1.21	1.27	0.765 (D)	1.06	0.82		0.45	0.7 (D)	0.56
11/14/2017										0.48
2/14/2018	0.21	1.2	1.26	0.77	1.06	0.84		0.5	0.74	0.615 (D)
2/15/2018							0.48	0.73	0.62	0.52
9/25/2018	0.195 (D)		1.275 (D)	1.31	0.8	1.11				
9/26/2018										
5/14/2019	0.13	0.77	0.8 (D)	0.53	0.69	0.54		0.2	0.51	0.44 (D)
5/15/2019										0.69
9/24/2019	0.195 (D)		1.37					0.53	0.72	0.59
9/25/2019		1.225 (D)		0.81	1.08	0.85				0.72

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. 46.15% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Lead, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Lead, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

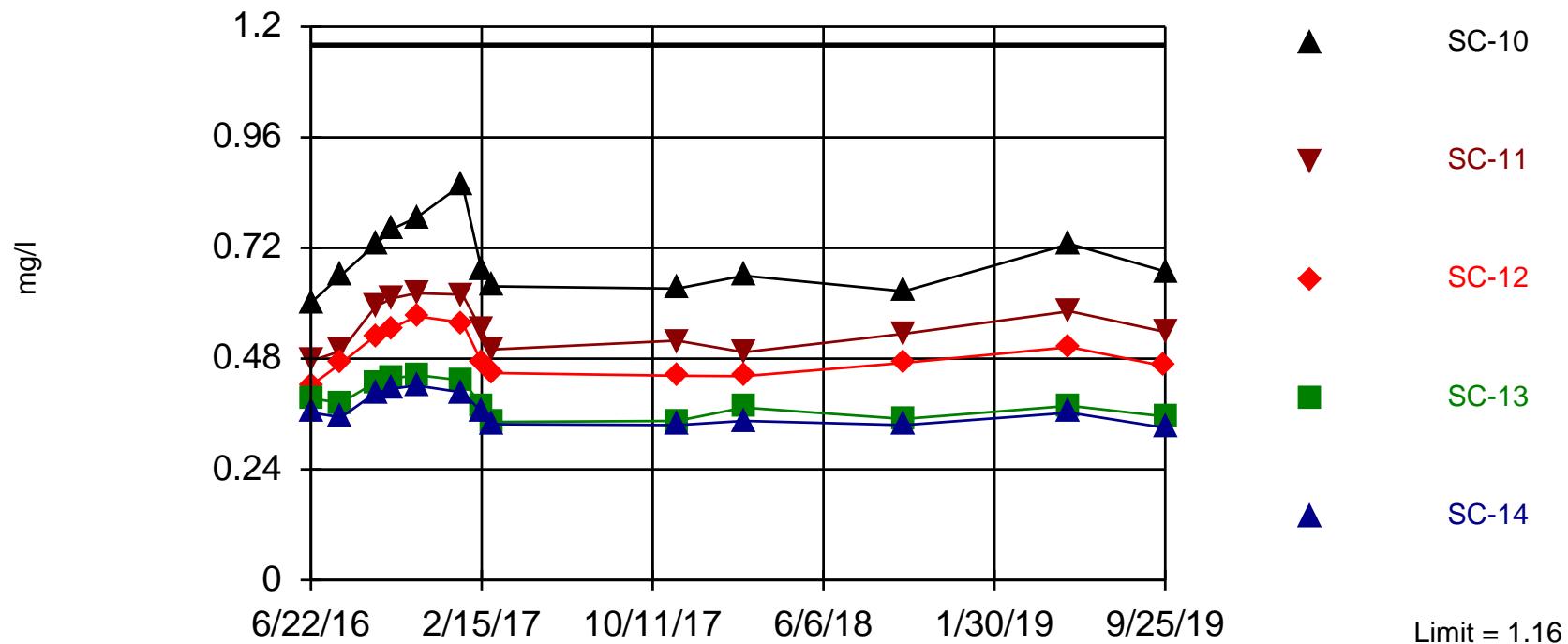
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	<0.0002	<0.0002 (D)	0.0046	0.00052	0.0041	0.00043	0.0002	0.0076		
6/23/2016									0.0052	
6/27/2016										0.0039
8/2/2016	<0.0002 (D)	<0.0002					<0.0002		0.0015	0.0021
8/3/2016			0.0007	<0.0002	0.0017 (D)	0.0016		0.0043		
9/19/2016	0.00032 (D)	<0.0002 (D1)		<0.0002 (D1)	<0.0002 (D1)	0.00091 (D)	<0.0002 (D1)		0.001 (D)	0.00042 (D)
9/20/2016								<0.0002 (D1)		
10/12/2016	<0.0002 (D1)	<0.0002 (D1)		<0.0002 (D1)	<0.0002 (D1)	0.00044 (D)	<0.0002 (D)		0.000835 (D)	<0.0002 (D1)
10/13/2016								0.0006 (D)		
11/15/2016	0.0037 (D)	0.0052 (D)		0.0016 (D)	0.00145 (D)	0.0063 (D)	0.0038 (D)	<0.0002 (D1)	0.0031 (D)	0.0065 (D)
11/16/2016								0.0063 (D)		
1/18/2017	<0.0005 (D1)	0.0035 (D)		0.0016 (D)	0.0015 (D)	0.0041 (D)	0.0017 (D)	<0.0005 (D1)	0.0035 (D)	0.0035 (D)
1/19/2017								0.0025 (D)		
2/14/2017	0.0027 (D)	0.0028 (D)					0.0018 (D)		0.0017 (D)	0.00099 (D)
2/15/2017				0.0015 (D)	0.0015 (D)	0.00275 (D)	0.0021 (D)		0.0028 (D)	
2/28/2017	0.0081 (D)	0.0049 (D)		0.0064 (D)	0.0068 (D)	0.0046 (D)	0.0064 (D)	0.0089 (D)		0.009
3/1/2017								0.0059 (D)		0.0089 (D)
11/13/2017	<0.0005 (D1)	<0.0005 (D1)					<0.0005 (D1)		0.00091 (D)	<0.0005 (D1)
11/14/2017				<0.0005 (D1)	<0.0005 (D1)	0.0011 (D)	<0.0005 (D1)		0.00073 (D)	
2/14/2018	<0.005	<0.005					<0.0025		<0.0025 (D)	<0.0025
2/15/2018								<0.005		
9/25/2018	<0.0005 (D)	<0.0005		<0.0025	<0.0025	<0.005	<0.005	<0.0005	0.00086	0.0046
9/26/2018								<0.0005 (D1)		
5/14/2019	<0.0005	<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)	0.00092 (D1D)	<0.0005 (D)	<0.0005 (D1D)	0.0011 (D1D)	0.00073 (D1D)
5/15/2019									<0.0005 (D1D)	
9/24/2019	<0.0005 (D1D)	0.00072 (D)		<0.0005 (D1D)	0.000825 (D)	0.00089 (D)	0.00056 (D)	0.0014 (D)	0.0018 (D)	0.0012 (D)
9/25/2019								0.00059 (D)		

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Lithium, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

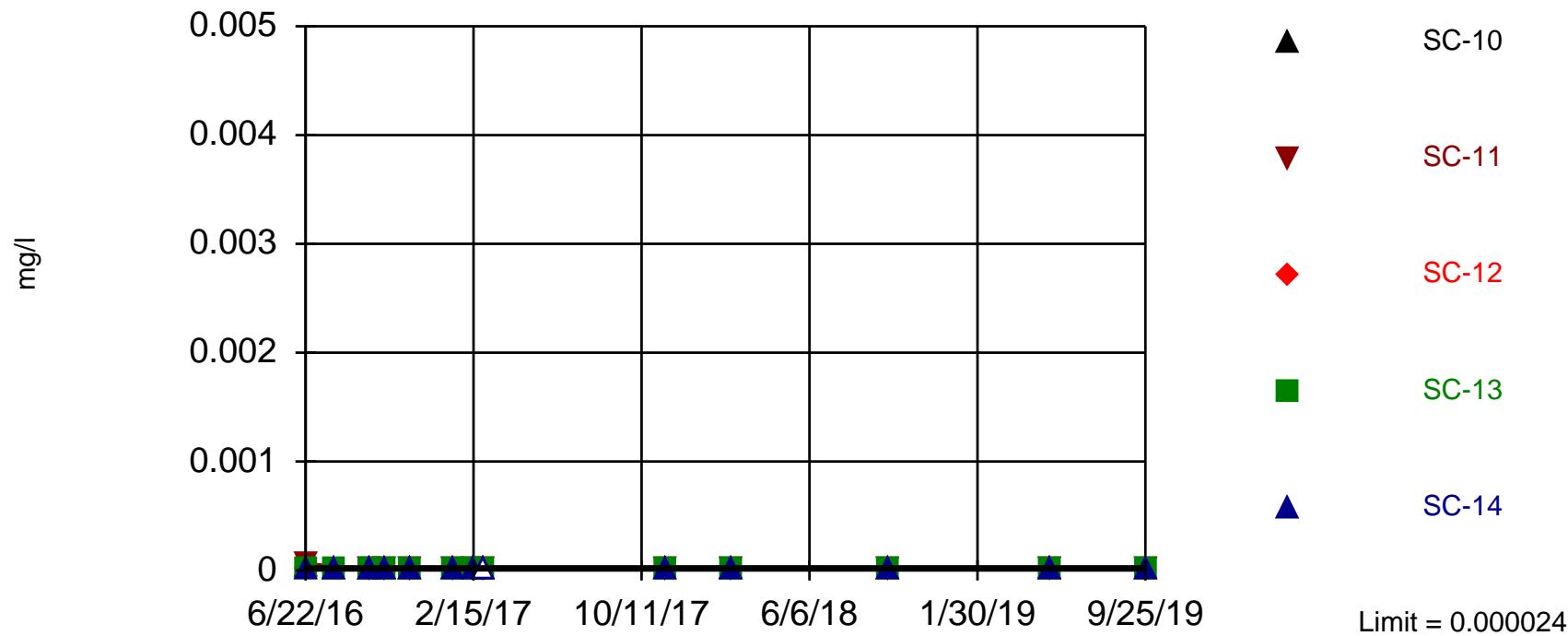
Constituent: Lithium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	0.904	0.671 (D)	0.363	0.394	0.601	0.422	0.269	0.475		
6/23/2016									0.303	
6/27/2016										0.232
8/2/2016	0.984 (D)	0.731		0.353	0.384	0.661 (D)	0.47	0.305	0.311	0.274
8/3/2016								0.497		
9/19/2016	1.01	0.779		0.406	0.429	0.728	0.53	0.306 (D)	0.343	0.295
9/20/2016								0.593 (D)		
10/12/2016	1.03	0.825		0.415	0.437	0.761	0.546 (D)		0.3455 (D)	0.315
10/13/2016										
11/15/2016	1.16	0.822		0.422	0.4445 (D)	0.786	0.572	0.325 (T)	0.3375 (D)	0.344
11/16/2016								0.611		
1/18/2017	1.08	0.791 (D)		0.407 (D)	0.433 (D)	0.858 (D)	0.558 (D)	0.318	0.343 (D)	0.335
1/19/2017								0.619 (D)		
2/14/2017	1	0.73 (D)		0.365	0.379	0.671 (D)	0.472	0.298	0.312	0.334
2/15/2017								0.542		
2/28/2017	0.9125 (D)	0.641		0.338 (D)	0.343 (D)	0.637 (D)	0.449 (D)	0.275 (D)	0.283 (D)	0.326 (D)
3/1/2017								0.5 (D)		
11/13/2017	0.894	0.63		0.336	0.345	0.632	0.443	0.2665 (D)	0.288	0.31
11/14/2017								0.519 (D)		
2/14/2018	0.9 (D)	0.576 (D)		0.345 (D)	0.374 (D)	0.66 (D)	0.442 (D)	0.265 (D)	0.2635 (D)	0.341 (D)
2/15/2018								0.494 (D)		
9/25/2018	0.9085 (D)	0.664 (D)		0.336 (D)	0.3495 (D)	0.626 (D)	0.471 (D)	0.276 (D)	0.302 (D)	0.316 (D)
9/26/2018								0.534 (D)		
5/14/2019	1.13	0.798		0.363	0.378	0.729	0.505 (D)		0.3265 (D)	0.321
5/15/2019								0.583		
9/24/2019	0.9695 (D)	0.722 (D)		0.33 (D)	0.3545 (D)	0.669 (D)		0.274 (D)	0.303 (D)	0.284 (D)
9/25/2019								0.538		

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 64 background values. Annual per-constituent alpha = 0.004681. Individual comparison alpha = 0.0004691 (1 of 2). Comparing 5 points to limit.

Constituent: Mercury, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Mercury, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

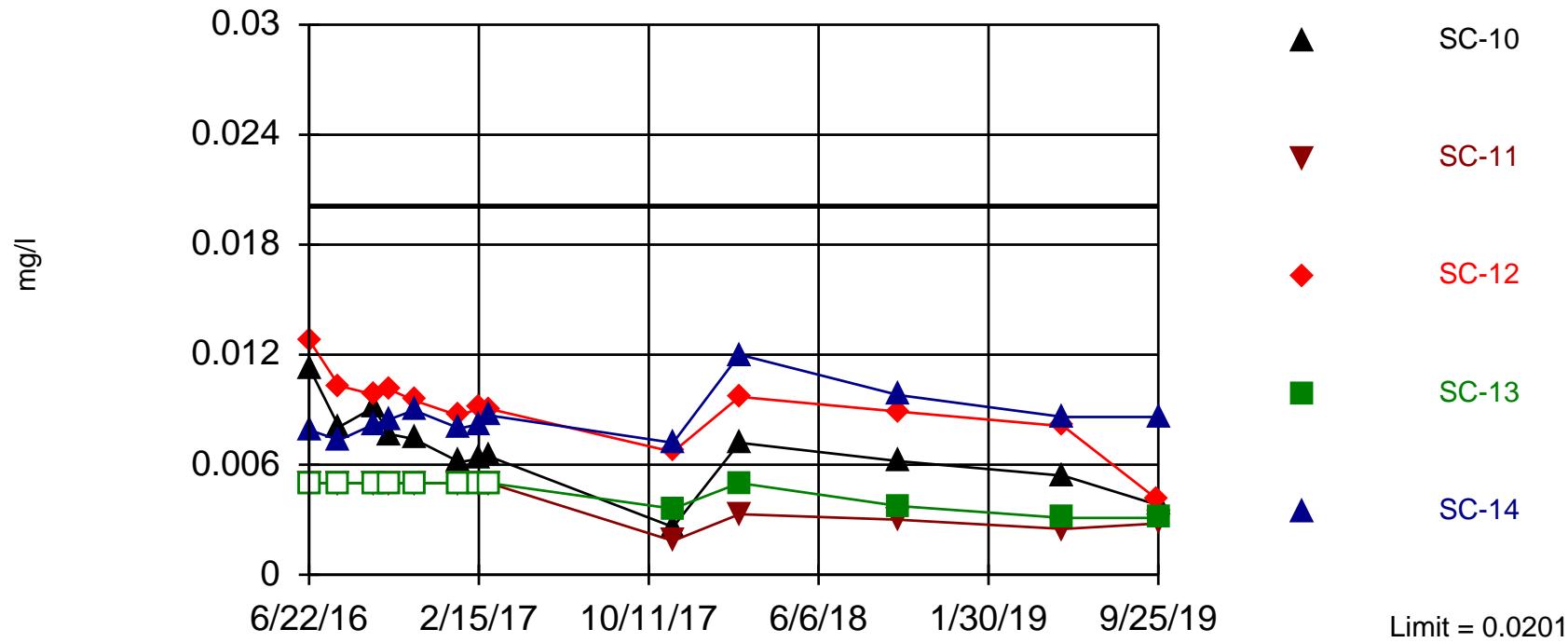
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-10	SC-11	SC-12	SC-13	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	1.3E-06	4.7E-06 (D)	3.6E-05	6.7E-05	4.5E-06	3.6E-06	2.8E-06	1.2E-05		
6/23/2016									5.4E-06	
6/27/2016										1.3E-05
8/2/2016	2E-06 (D)	6E-06					4E-06		7E-06	6E-06
8/3/2016			1.05E-05 (D)		6E-06	2E-06		3E-06		
9/19/2016	2E-06	6E-06		1.6E-05	9.5E-06 (D)	5E-06	3E-06		4E-06	3E-06
9/20/2016										
10/12/2016	2E-06	6E-06		1E-05	1E-05	3E-06 (D)	2E-06		5E-06 (D)	3E-06
10/13/2016										
11/15/2016	2E-06	6E-06		1E-05	1E-05	4E-06	2E-06 (D)		2E-06 (D)	9E-06
11/16/2016										
1/18/2017	2E-06	7.5E-06 (D)		1.1E-05	1E-05	4E-06	3E-06		2E-06	8E-06
1/19/2017										
2/14/2017	2E-06	6E-06 (D)					4E-06		2E-06	4E-06
2/15/2017			9E-06 (D)	8E-06	3E-06	2E-06		2E-06		
2/28/2017	2E-06 (D)	6E-06		9E-06	9E-06	3E-06 (D)	3E-06		2E-06	5E-06
3/1/2017										
11/13/2017	2E-06 (T)	6E-06 (T)		1E-05	7.5E-06 (D)	4E-06	2E-06		4E-06 (T)	7E-06 (T)
11/14/2017										
2/14/2018	2E-06	5E-06		1.1E-05	1.3E-05	4E-06	2E-06		2E-06 (D)	5E-06
2/15/2018										
9/25/2018	2.5E-06 (D)	5E-06		9E-06	8E-06	5E-06	2E-06 (D)		3E-06	2.4E-05
9/26/2018										
5/14/2019	2E-06	6E-06		1E-05	9E-06	4E-06 (D)	2E-06		7.5E-06 (D)	3E-06
5/15/2019										
9/24/2019	2E-06 (D)	5E-06				4E-06		5E-06		8E-06
9/25/2019				1E-05	9E-06		4E-06 (D)		2E-06	5E-06

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. 43.08% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Molybdenum, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Molybdenum, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

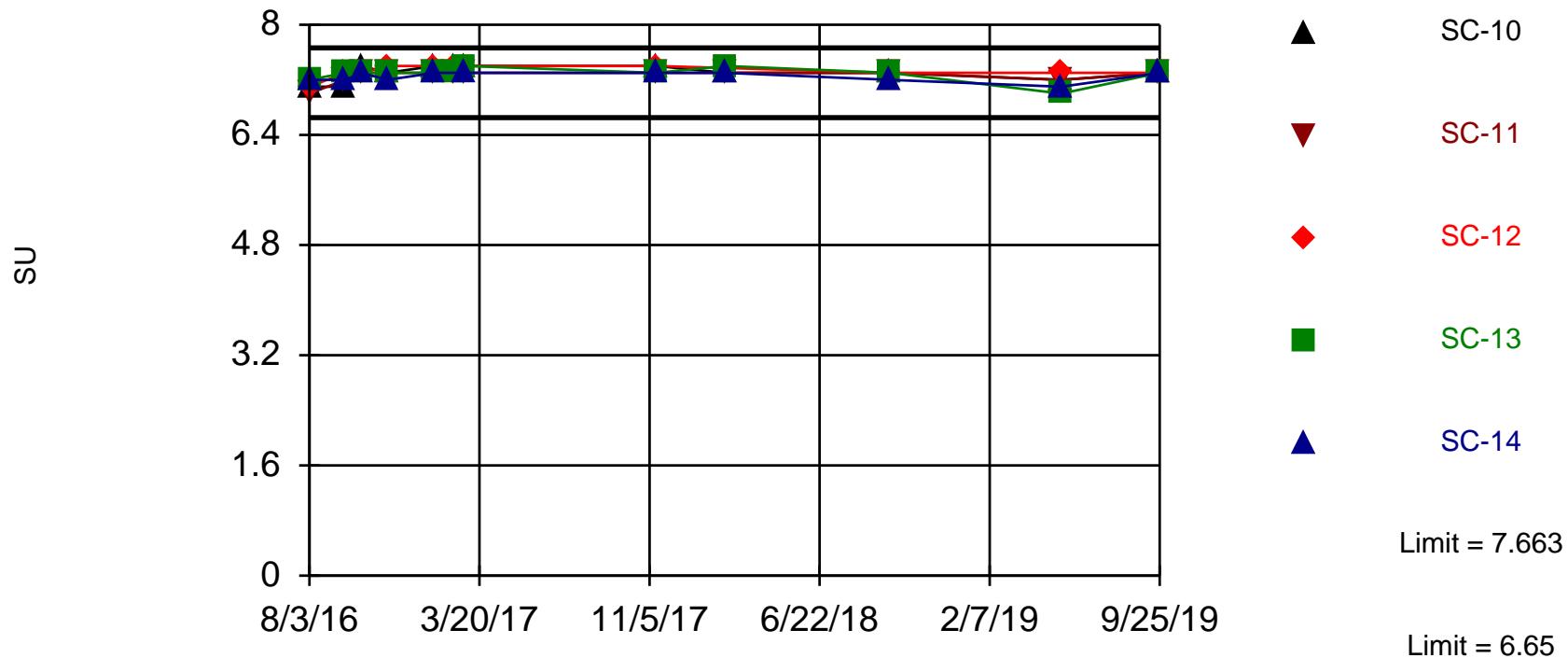
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	<0.005	<0.005 (D)	0.0079	<0.005	0.0113	0.0128	<0.005	<0.005		
6/23/2016									<0.005	
6/27/2016										0.0201
8/2/2016	<0.005 (D)	<0.005					<0.005		0.00838	0.0198
8/3/2016			0.00734	<0.005	0.008055 (D)	0.0103		<0.005		
9/19/2016	<0.005	<0.005					<0.005 (D)		0.0122	0.00609
9/20/2016			0.00819	<0.005	0.00911	0.00983		<0.005 (D)		
10/12/2016	<0.005	<0.005					0.001252 (D)		0.009175 (D)	0.00525
10/13/2016			0.00848	<0.005	0.00767	0.0101 (D)		<0.005		
11/15/2016	<0.005	<0.005					<0.005		0.01065 (D)	0.0117
11/16/2016			0.00897	<0.005 (D)	0.0074	0.00951		<0.005		
1/18/2017	<0.005	<0.005 (D)					<0.005		0.00969	<0.005
1/19/2017			0.00798	<0.005	0.00614	0.00866		<0.005		
2/14/2017	<0.005	<0.005 (D)					<0.005		0.0104	0.00716
2/15/2017			0.00821	<0.005	0.006325 (D)	0.00909		<0.005		
2/28/2017	<0.005 (D)	<0.005					<0.005		0.0109	0.00842
3/1/2017			0.00869	<0.005	0.00646	0.00905 (D)		<0.005		
11/13/2017	0.0015 (D)	<0.0002 (D1)					0.0014 (D)		0.005 (D)	0.0042 (D)
11/14/2017			0.0072 (D)	0.0036 (D)	0.0026 (D)	0.0067 (D)		0.00185 (D)		
2/14/2018	<0.01	<0.01					0.003		0.0112 (D)	0.0055
2/15/2018			0.012	0.005	0.0072	0.0097		0.0033		
9/25/2018	0.0015 (D)	0.0006					0.002		0.0086	0.0027
9/26/2018			0.0098	0.00375 (D)	0.0062	0.0089		0.003		
5/14/2019	0.0018	0.00068 (D)					0.002 (D)		0.0069 (D)	0.0014 (D)
5/15/2019			0.0086 (D)	0.0031 (D)	0.0054 (D)	0.0081 (D)		0.0025 (D)		
9/24/2019	0.00165 (D)	0.00067 (D)				0.0041 (D)	0.0021 (D)		0.0066 (D)	0.002 (D)
9/25/2019			0.0086 (D)	0.0031 (D)	0.0038 (D)			0.0028 (D)		

Within Limits

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=7.157, Std. Dev.=0.236, n=60. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.962, critical = 0.945. Kappa = 2.146 (c=23, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002288. Individual comparison alpha = 0.000229. Comparing 5 points to limit.

Constituent: pH Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

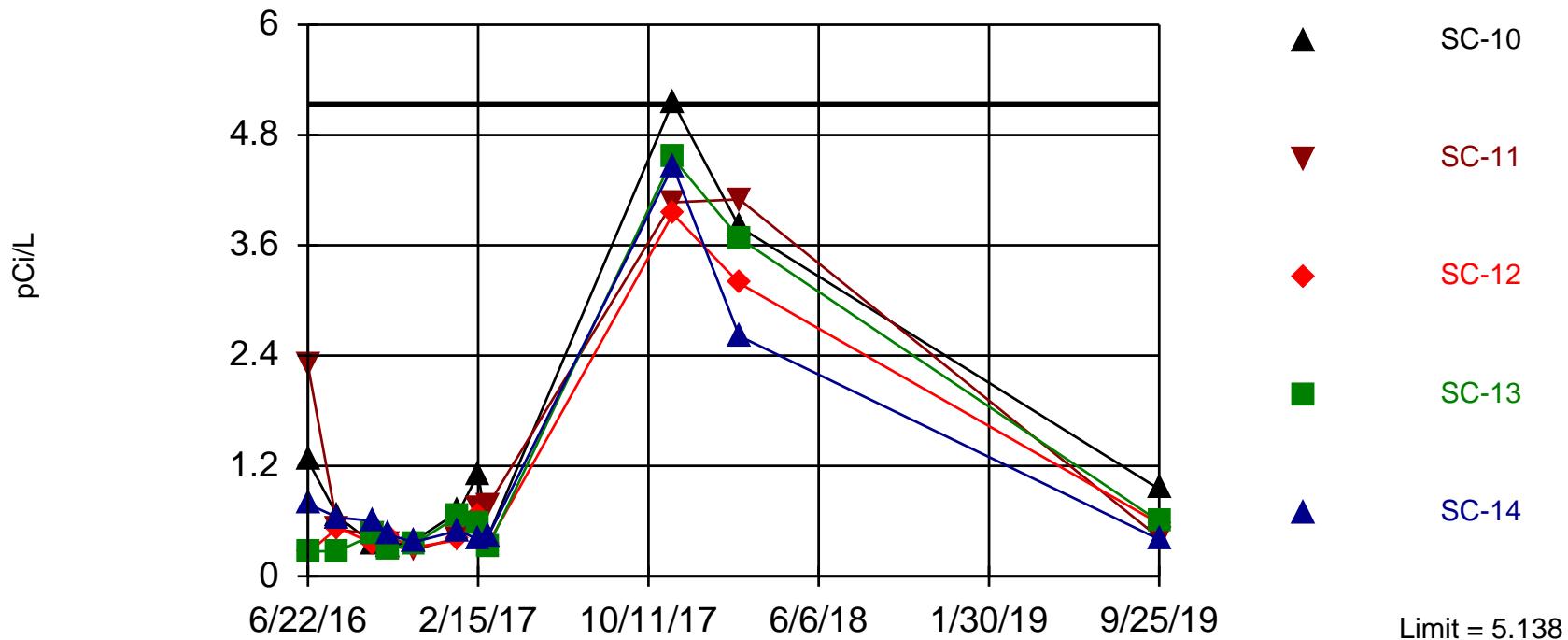
Constituent: pH (SU) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-3A	CC-1	FC-2	FC-3B	SC-10	SC-13	SC-12	SC-14	SC-11
8/2/2016	7 (D)	7.5	6.8	7.2	7.2					
8/3/2016						7.1 (D)	7.2	7.1	7.2	7
9/19/2016	7.1	7.5	6.7	7.2	6.9					
9/20/2016						7.1	7.3	7.3	7.2	7.2
10/12/2016	7.1	7.5	6.9	7.2	7					
10/13/2016						7.4	7.3	7.3	7.3	7.3
11/15/2016	7.1	7.6	6.9	7.3	7					
11/16/2016						7.3	7.3	7.4	7.2	7.3
1/18/2017	7.1	7.6	6.9	7.3	7					
1/19/2017						7.4	7.3	7.4	7.3	7.3
2/14/2017	7.1	7.6	6.9	7.3	7					
2/15/2017						7.4	7.3	7.4		7.3
2/28/2017	7.2	7.5	6.9	7.3	7					
3/1/2017						7.4	7.4	7.4	7.3	7.3
11/13/2017	7.2	7.6	7	7.3	7					
11/14/2017						7.4	7.3	7.4	7.3	7.3
2/14/2018	7.1	7.6	6.9	7.3	6.8					
2/15/2018						7.3	7.4		7.3	7.3
9/25/2018	7	7.3	6.8	7.3	7.1					
9/26/2018						7.3	7.3	7.3	7.2	7.3
5/14/2019	7.1	7.5	6.8	7.2	7.2					
5/15/2019						7.2	7	7.3	7.1	7.2
9/24/2019	7.1	7.4	7	7.3	7.1					
9/25/2019						7.3	7.3		7.3	7.3

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=1.081, Std. Dev.=0.2992, n=55. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9464, critical = 0.94. Kappa = 2.156 (c=23, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002288. Individual comparison alpha = 0.000458. Comparing 5 points to limit.

Constituent: Rad 226+228 Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Rad 226+228 (pCi/L) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

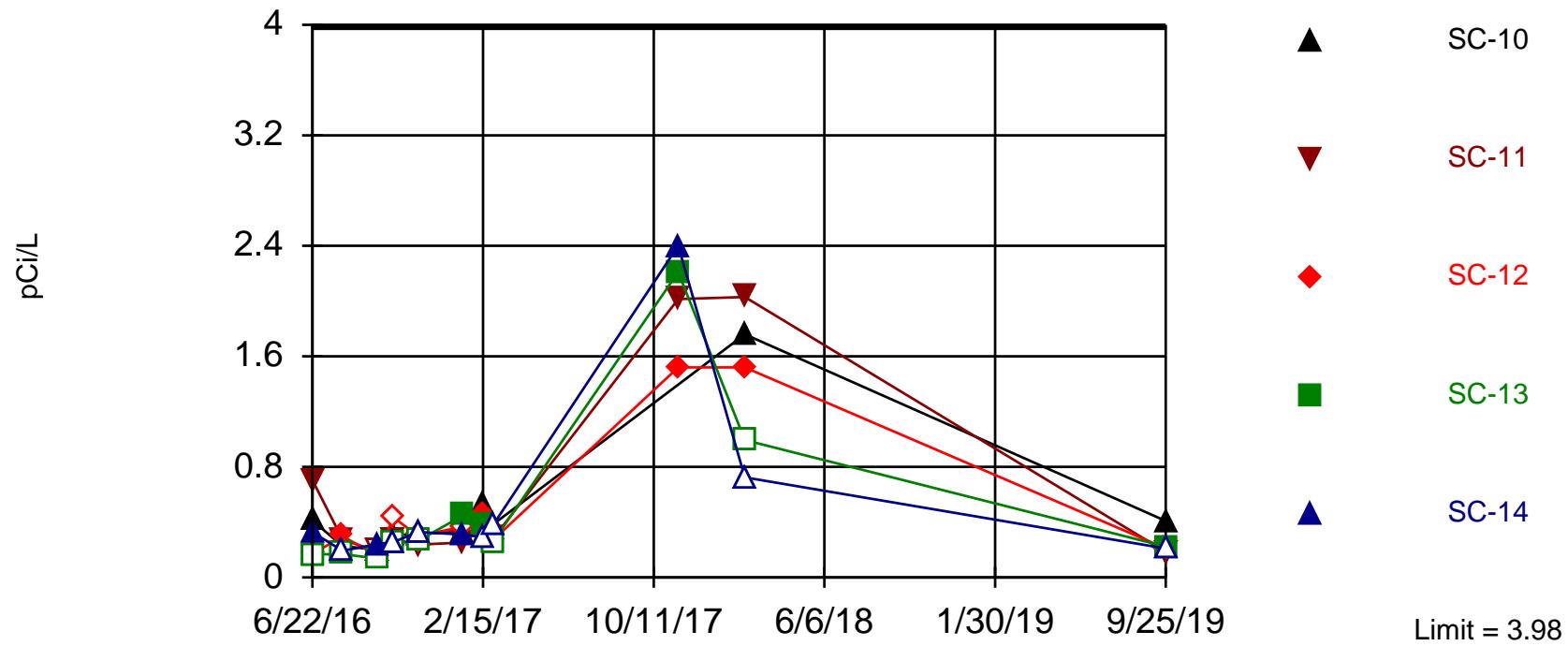
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-13	SC-12	SC-11	SC-10	CC-1	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	1.475	0.2705	0.253	2.295	1.257	1.317 (D)	0.3375	0.786		
6/23/2016									1.321	
6/27/2016										1.111
8/2/2016	1.38					0.412	0.295		0.3135	1.7775
8/3/2016		0.2735	0.528	0.508	0.646			0.6375		
9/19/2016	2.136		0.3585	0.4555	0.361		0.363		0.3795	0.496
9/20/2016		0.448				0.6405			0.603	
10/12/2016	1.913					1.404	0.3475		0.616	0.4955
10/13/2016		0.305	0.437	0.3365	0.324			0.4535		
11/15/2016	2.128					1.354	0.854		0.395	0.6865
11/16/2016		0.341	0.3135	0.286	0.3775			0.3695		
1/18/2017	1.874					1.494 (D)	0.471		0.617	0.6095
1/19/2017		0.661	0.393	0.4185	0.704			0.497		
2/14/2017	2.31 (D)					1.841	0.7225		2.636	1.366
2/15/2017		0.581	0.6565	0.751	1.114			0.3975		
2/28/2017	1.628					1.59325 (D)	0.446		1.8245	0.414
3/1/2017		0.318	0.355	0.7725	0.432			0.4345		
11/13/2017	6.445					5.16	4.255		3.575	2.225
11/14/2017		4.55	3.94	4.0675 (D)	5.16			4.465		
2/14/2018	5.23					3.22	2.1715		2.23025 (D)	2.79
2/15/2018		3.677	3.1875 (D)	4.1	3.8			2.612		
9/24/2019	1.628					1.444	0.4605		0.548	0.69
9/25/2019		0.596 (D)	0.5735	0.418	0.949			0.4		

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 56 background values. 53.57% NDs. Annual per-constituent alpha = 0.006093. Individual comparison alpha = 0.0006109 (1 of 2). Comparing 5 points to limit.

Constituent: Radium 226, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

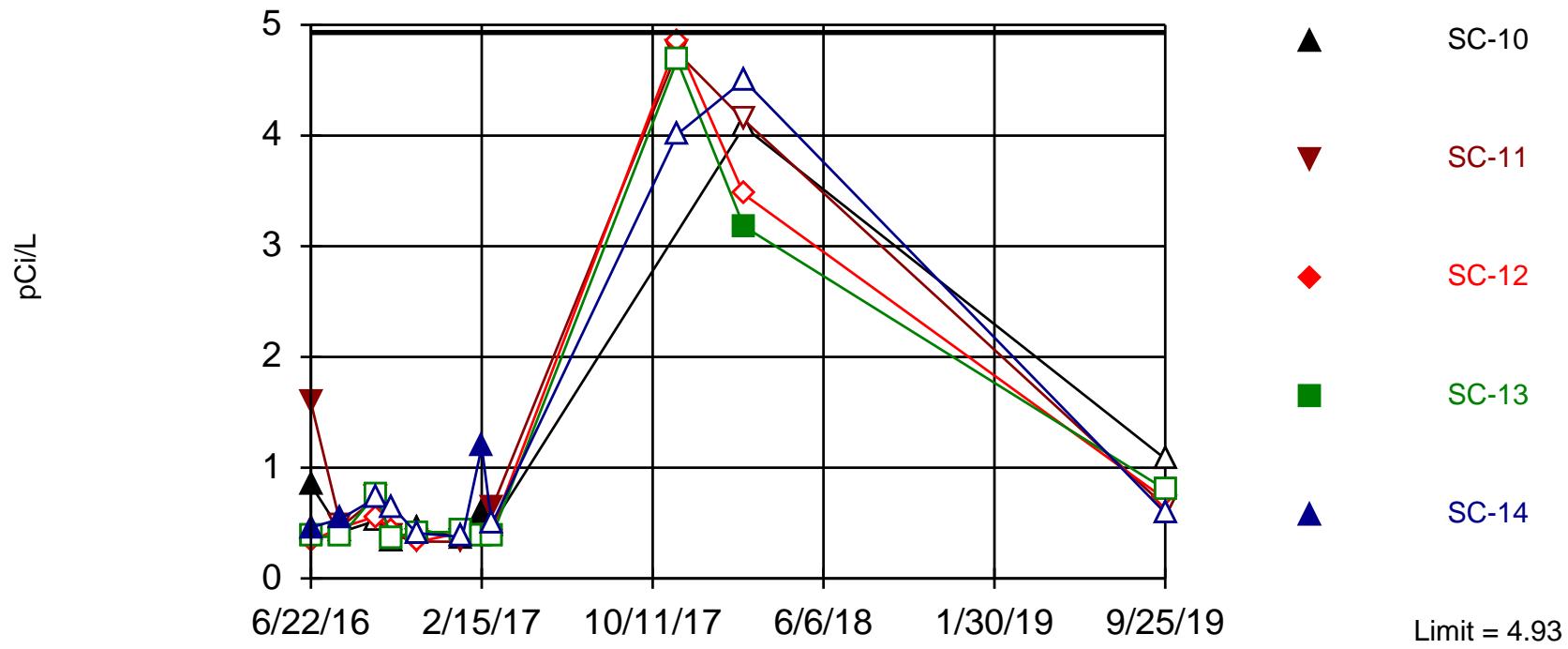
Constituent: Radium 226, Total (pCi/L) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-10	SC-11	FC-2	SC-13	SC-14	SC-12	FC-3A	FC-3B
6/22/2016	0.295 (J)	0.413 (JD)	0.412 (J)	0.705 (J)	<0.184	<0.167	0.327 (J)	<0.169		
6/23/2016									0.368 (J)	0.486 (J)
6/27/2016										<0.235
8/2/2016	0.69 (D)	0.333 (D)			<0.199				<0.26	<0.235
8/3/2016			0.227 (J)	0.274 (J)		<0.169	<0.193	0.298 (J)		
9/19/2016	0.416 (J)	<0.155		<0.201	<0.19	<0.227			<0.211	<0.484
9/20/2016						<0.137	0.241 (J)	<0.159		
10/12/2016	0.433 (J)	<0.288		<0.307	<0.279	<0.325			<0.368	0.283 (J)
10/13/2016						<0.243	<0.256	<0.435		
11/15/2016	0.588 (J)	<0.38		<0.312	<0.238	<0.32			<0.419	<0.397
11/16/2016						<0.265	<0.329	<0.3		
1/18/2017	0.494 (J)	0.569 (JD)		0.333 (J)	0.253 (J)	<0.256	0.451 (J)	0.31 (J)	<0.244	0.357 (J)
1/19/2017						<0.425			<0.38	
2/14/2017	0.725 (JD)	0.631 (J)		0.529 (J)	0.369 (J)		0.388 (J)	<0.291	0.459 (J)	
2/15/2017						<0.42			<0.307	<0.389
2/28/2017	0.348 (J)	<0.343 (D)		<0.384	<0.281		<0.258	<0.379	<0.271	
3/1/2017										
11/13/2017	3.98	2.9			2.41				1.87	<0.57
11/14/2017				2.015 (D)		2.21	2.4	1.52		
2/14/2018	3 (J)	1.48 (J)		1.76	2.03 (J)	<0.743	<0.994	<0.724	1.52 (J)	<0.772 (D)
2/15/2018										<1.23
5/14/2019									<0.1 (D)	<0.088
9/24/2019	0.5655 (JD)	0.364		0.409 (J)	<0.185	<0.182			0.213 (J)	0.209 (J)
9/25/2019							0.223 (JD)	<0.209		0.359 (J)

Within Limit

Prediction Limit

Interwell Non-parametric



Prediction Limit

Constituent: Radium 228, Total (pCi/L) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

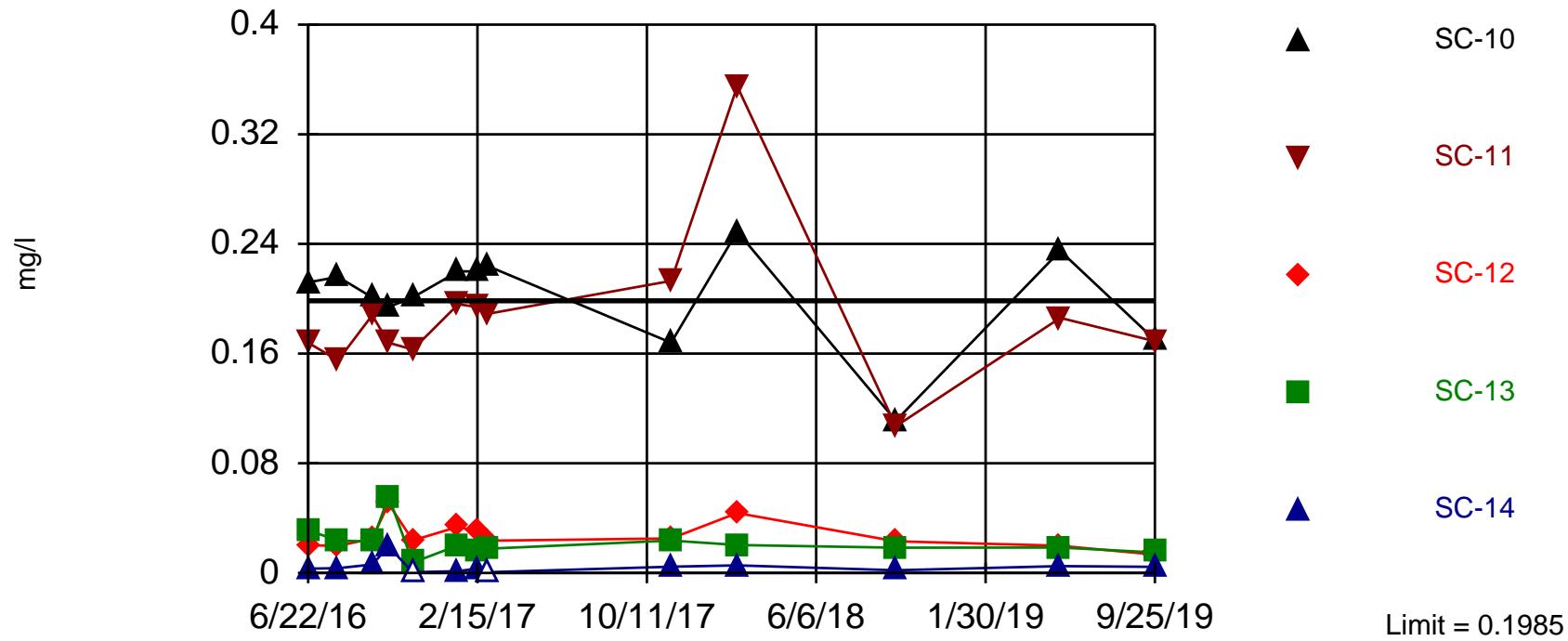
	FC-1	SC-10	CC-1	SC-11	SC-12	SC-13	SC-14	FC-2	FC-3A	FC-3B
6/22/2016	1.18	0.845 (J)	0.904 (JD)	1.59	<0.337	<0.374	0.459 (J)	<0.491		
6/23/2016									0.953 (J)	
6/27/2016										0.625 (J)
8/2/2016			0.7735 (D)					<0.391	<0.367	1.66
8/3/2016		0.419 (J)		<0.468	<0.46	<0.378	0.541 (J)			
9/19/2016	1.72		0.563 (J)					<0.499	<0.548	<0.508
9/20/2016		<0.52		<0.721	<0.558	<0.759	<0.724			
10/12/2016	1.48		1.26					<0.37	0.432 (J)	<0.425
10/13/2016		<0.341		<0.394	<0.439	<0.367	<0.651			
11/15/2016	1.54		1.2		<0.334	<0.327	<0.417		0.694 (J)	<0.371
11/16/2016		<0.443					<0.41			0.488 (J)
1/18/2017	1.38		0.925 (D)		<0.331	<0.418	<0.42		0.343 (J)	0.495 (J)
1/19/2017		0.371 (J)					<0.374			<0.505
2/14/2017	1.585 (D)		1.21					0.51 (J)	0.593 (J)	0.748 (J)
2/15/2017		0.585 (J)		0.382 (J)	<0.395	<0.386	1.19			
2/28/2017	1.28		1.435 (D)					<0.472	0.582 (J)	<0.439
3/1/2017		<0.48		0.632 (J)	<0.439	<0.378	<0.49			
11/13/2017	<4.93		<4.52					<3.69	<3.41	<3.88
11/14/2017				<4.75 (D)	<4.84	<4.68	<4.01			
2/14/2018	<4.46		<3.48					<3.6	<4.5 (D)	<4.35
2/15/2018		<4.08		<4.14	<3.47	3.18 (J)	<4.5			
5/14/2019									<0.656 (D)	<0.512
9/24/2019	1.0205 (D)		1.08		<0.721			<0.739	<0.678	<0.662
9/25/2019		<1.08		<0.651		<0.804 (D)	<0.591			

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. 1.538% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Selenium, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

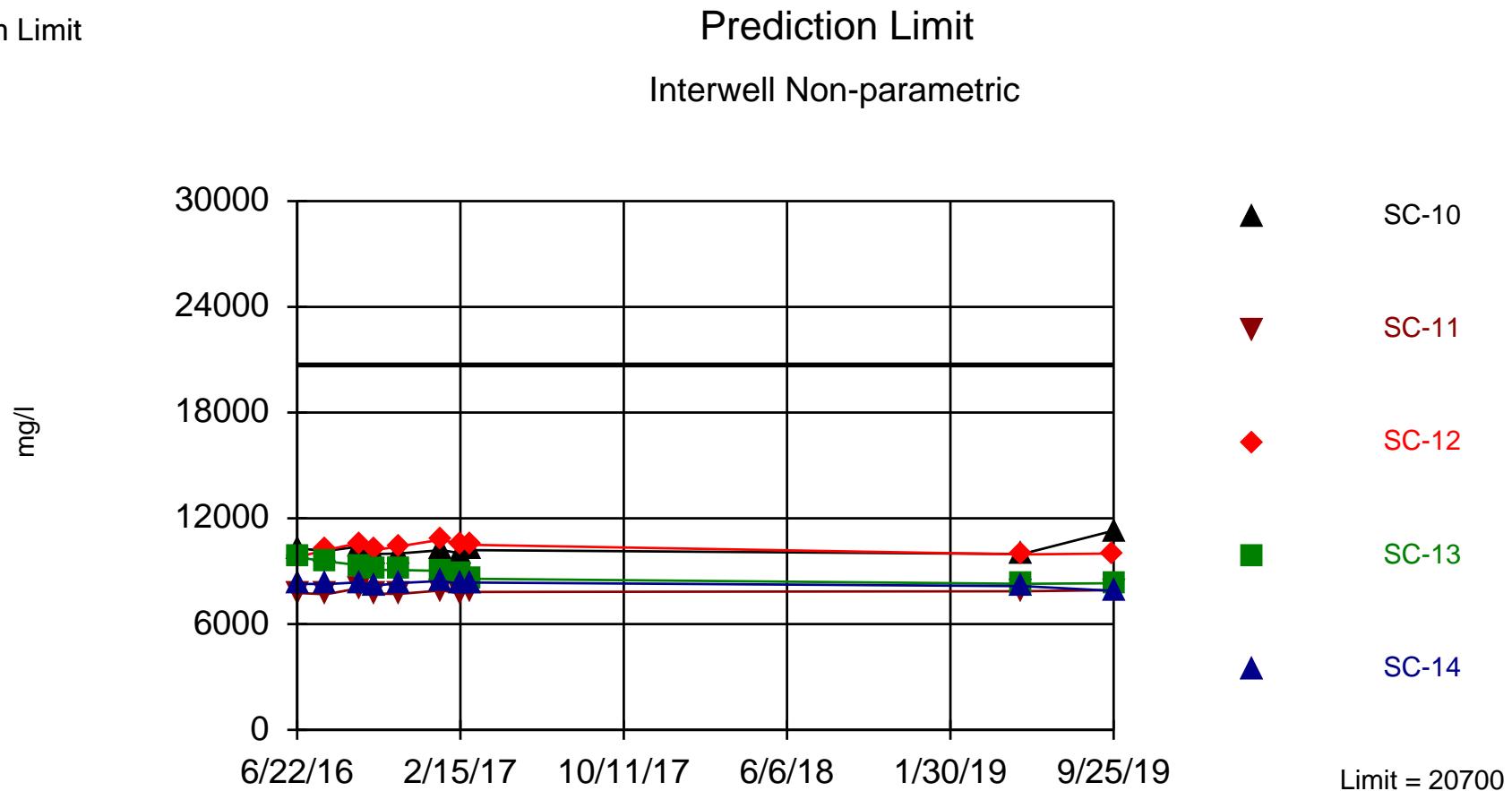
Prediction Limit

Constituent: Selenium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	0.016	0.1985 (D)	0.0031	0.0311	0.212	0.0203	0.0471	0.168		
6/23/2016									0.0393	
6/27/2016										0.0057
8/2/2016	0.0098 (D)	0.186		0.0035	0.0236	0.216 (D)	0.0197	0.0412	0.0382	0.0069
8/3/2016								0.155		
9/19/2016	0.028 (D)	0.157 (D)		0.0062 (D)	0.0228 (D)	0.201 (D)	0.0252 (D)	0.04895 (D)	0.0364 (D)	0.0112 (D)
9/20/2016								0.188 (D)		
10/12/2016	0.0167 (D)	0.138 (D)		0.0192 (D)	0.0558 (D)	0.194 (D)	0.05055 (D)	<0.001 (D1)	0.04245 (D)	0.0115 (D)
10/13/2016								0.168 (D)		
11/15/2016	0.0136	0.145 (D)		<0.001 (D1P)	0.00765 (D)	0.201 (DP1)	0.0237 (DP1)	0.0356 (D)	0.0355 (D)	0.0106 (D)
11/16/2016								0.163 (DP1)		
1/18/2017	0.0254 (D)	0.1385 (D)		0.0013 (D)	0.0202 (D)	0.22 (D)	0.0337 (D)	0.0452 (D)	0.039 (D)	0.0067 (D)
1/19/2017								0.196 (D)		
2/14/2017	0.0141 (DT)	0.1415 (D)		0.0033 (D)	0.0164 (D)	0.22 (D)	0.03 (D)	0.0388 (DT)	0.0352 (DT)	0.0092 (D)
2/15/2017								0.194 (D)		
2/28/2017	0.00375 (D)	0.143 (D)		<0.001 (D1)	0.0177 (D)	0.224 (D)	0.02355 (D)	0.0367 (D)	0.0263 (D)	0.0011 (D)
3/1/2017								0.189 (D)		
11/13/2017	0.015 (D)	0.135 (D)		0.0046 (D)	0.0236 (D)	0.168 (D)	0.0252 (D)	0.0381 (D)	0.0552 (D)	0.0107 (D)
11/14/2017								0.213 (D)		
2/14/2018	0.0068	0.169		0.0055	0.0204	0.249	0.0437	0.044	0.0543 (D)	0.0036
2/15/2018								0.355		
9/25/2018	0.02165 (D)	0.17		0.002	0.01845 (D)	0.111 (D)	0.0231	0.0371	0.0512	0.0142
9/26/2018								0.107 (D)		
5/14/2019	0.0178 (D)	0.188 (D)		0.005 (D)	0.0185 (D)	0.235 (D)	0.0198 (D)	0.0402 (D)	0.04725 (D)	0.005 (D)
5/15/2019								0.186 (D)		
9/24/2019	0.01665 (D)	0.19 (D)		0.0045 (D)	0.015 (D)	0.17 (D)		0.0399 (D)	0.0115 (D)	
9/25/2019								0.169 (D)		

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 50 background values. Annual per-constituent alpha = 0.007403. Individual comparison alpha = 0.0007428 (1 of 2). Comparing 5 points to limit.

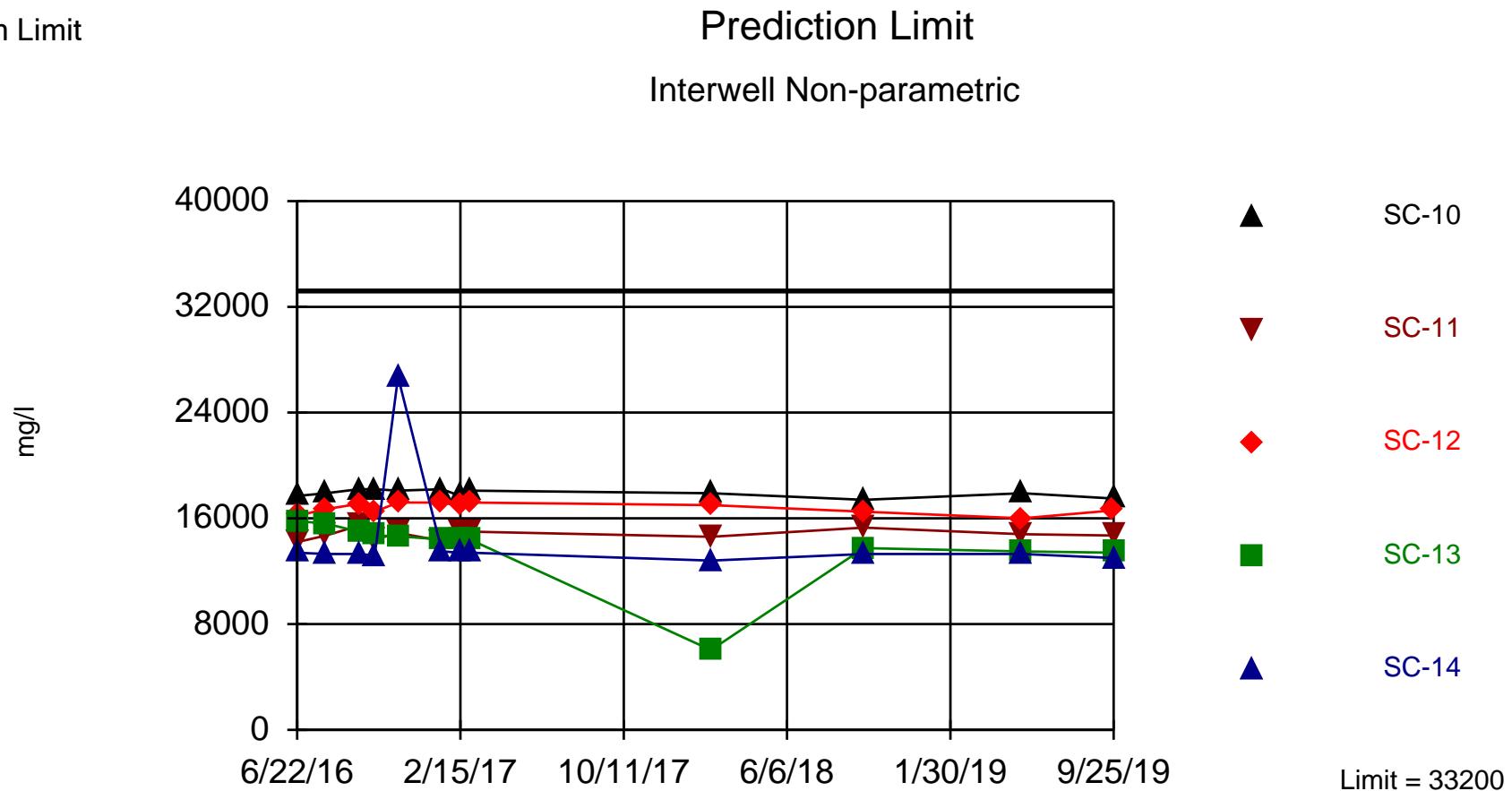
Constituent: Sulfate Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-13	SC-12	SC-11	SC-10	CC-1	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	13200 (D)	9790 (D)	9800 (D)	7770 (D)	10300 (D)	17200 (D)	7080 (D)	8290 (D)		
6/23/2016									5870 (D)	
6/27/2016										4820 (D)
8/2/2016	13000 (D)					17200 (D)	7000 (D)		5650 (D)	5240 (D)
8/3/2016		9560 (D)	10200 (D)	7690 (D)	10150 (D)			8270 (D)		
9/19/2016	13000 (D)					17300 (D)	7030 (D)		5800 (D)	5380 (D)
9/20/2016		9340 (D)	10600 (D)	8035 (D)	10400 (D)			8370 (D)		
10/12/2016	12800 (D)					16600 (D)	6910 (D)		5635 (D)	4940 (D)
10/13/2016		9080 (D)	10200 (D)	7730 (D)	9980 (D)			8180 (D)		
11/15/2016	13600 (D)					17400 (D)	6910		5735 (D)	5370 (D)
11/16/2016		9070 (D)	10400 (D)	7710 (D)	10000 (D)			8330 (D)		
1/18/2017	13700 (D)					17550 (D)	7040 (D)		5880 (D)	4590 (D)
1/19/2017		9020 (D)	10800 (D)	7910 (D)	10200 (D)			8450 (D)		
2/14/2017	13200 (D)					16800 (D)	6840 (D)		5720 (D)	4470 (D)
2/15/2017		8840 (D)	10500 (D)	7730 (D)	10020 (D)			8270 (D)		
2/28/2017	13100 (D)					17400 (D)	6940 (D)		5820 (D)	4640 (D)
3/1/2017		8570 (D)	10500 (D)	7820 (D)	10200 (D)			8360 (D)		
5/14/2019	13200 (D)					18300 (D)	6660 (D)		5725 (D)	4250 (D)
5/15/2019		8290 (D)	9955 (D)	7860 (D)	9980 (D)			8160 (D)		
9/24/2019	13250 (D)			10000 (D)			20700 (D)	7130 (D)		5770 (D)
9/25/2019			8315 (D)		7930 (D)	11300 (D)			7890 (D)	4440 (D)

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit.

Constituent: TDS Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: TDS (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

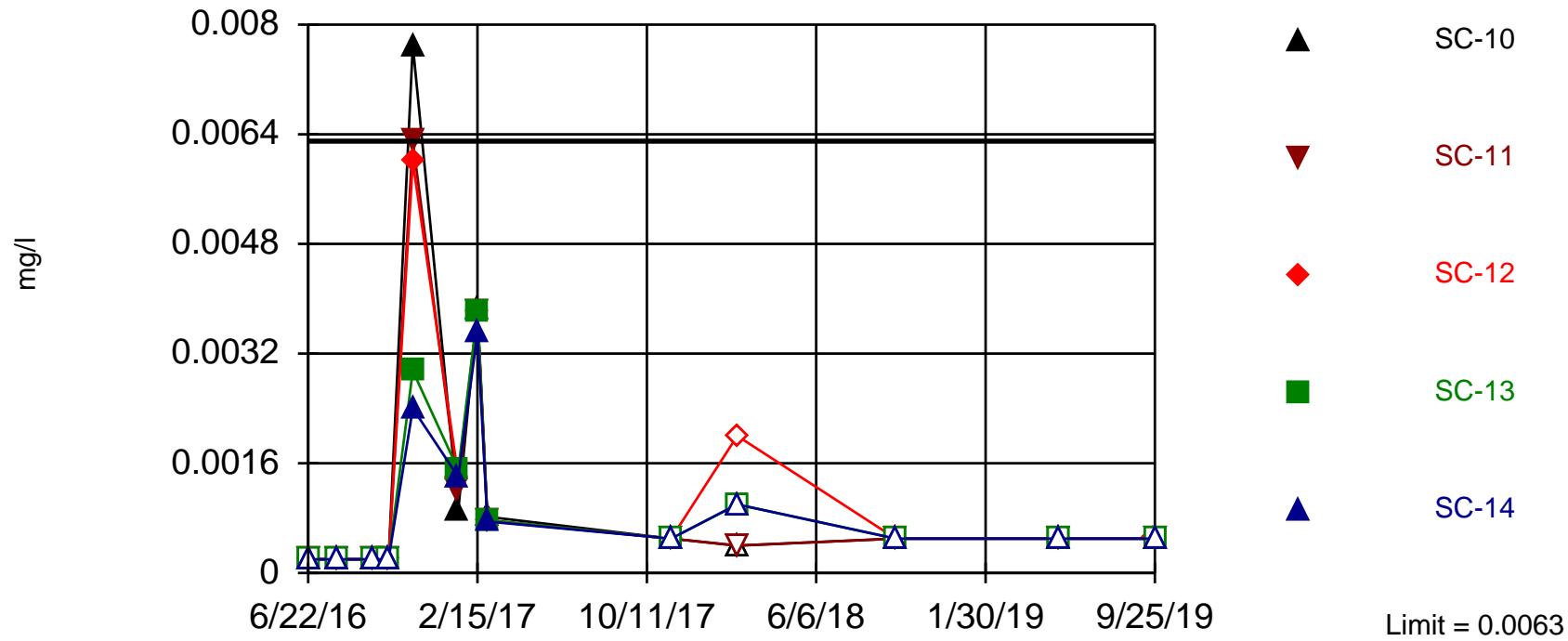
	FC-1	FC-2	SC-14	SC-11	SC-12	SC-10	SC-13	CC-1	FC-3A	FC-3B
6/22/2016	22300	11200	13400	14200	16200	17700	15800	30950 (D)		
6/23/2016									9460	
6/27/2016										7770
8/2/2016	22000 (D)	10900						2.1	9140	9200
8/3/2016			13300	14700	16700	17900 (D)	15600			
9/19/2016	21900	11250 (D)						30500	9320	9410
9/20/2016			13300	15450 (D)	17100	18200	15000			
10/12/2016	23200	11600						31400	9470 (D)	9450
10/13/2016			13200	14400	16500 (D)	18200	14700			
11/15/2016	22100	11300						30600	9320 (D)	9630
11/16/2016			26700	14900	17200	18100	14650 (D)			
1/18/2017	22200	11200						31200 (D)	9180	9250
1/19/2017			13500	14300	17200	18200	14400			
2/14/2017	22100	11200						30450 (D)	9310	9350
2/15/2017			13400	15000	17000	17700 (D)	14400			
2/28/2017	22100 (D)	11300						30800	9490	9410
3/1/2017			13400	15000	17200 (D)	18100	14400			
2/14/2018	22300	11000						32500	9400 (D)	9040
2/15/2018			12800	14600	17000	17900	6040			
9/25/2018	21800 (D)	10900						31400	9700	8970
9/26/2018			13300	15300	16500	17400	13750 (D)			
5/14/2019	22300	10800						32700	9280 (D)	7890
5/15/2019			13300	14800	16000 (D)	17900	13500			
9/24/2019	22200 (D)	10600			16600			33200	9220	7860
9/25/2019			13000	14700		17500	13400 (D)			

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 65 background values. 66.15% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Thallium, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Thallium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

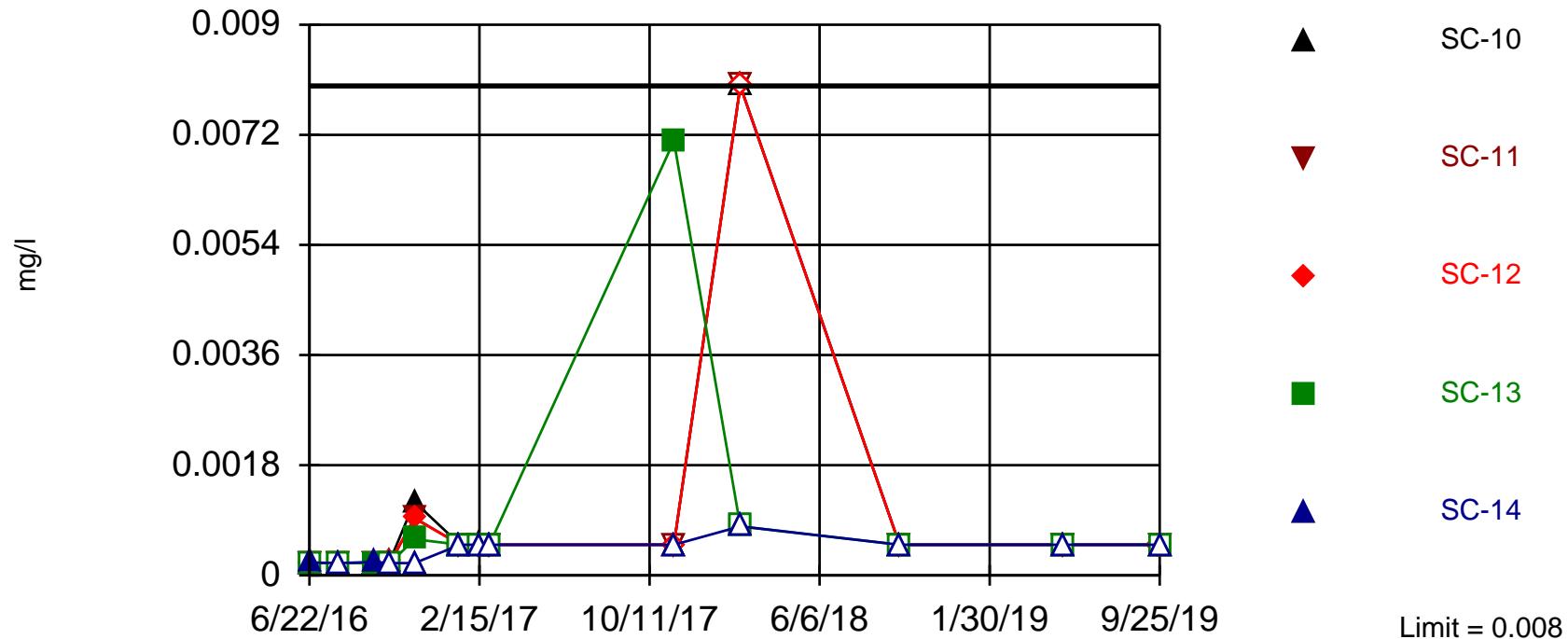
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	0.0002	0.000455 (D)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
6/23/2016								<0.0002		<0.0002
6/27/2016										<0.0002
8/2/2016	<0.0002 (D)	0.00045		<0.0002	<0.0002	<0.0002 (D)	<0.0002		<0.0002	<0.0002
8/3/2016								<0.0002		
9/19/2016	0.00027 (D)	<0.0002 (D1)		<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)		0.000545 (D)	<0.0002 (D1)	<0.0002 (D1)
9/20/2016										
10/12/2016	<0.0002 (D1)	<0.0002 (D1)		<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)		<0.0002 (D1)	<0.0002 (D)	<0.0002 (D1)
10/13/2016				<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)			<0.0002 (D1)	
11/15/2016	0.0061 (D)	0.0063 (D)						<0.0002 (D1)	0.0057 (D)	0.0056 (D)
11/16/2016			0.0024 (D)	0.00295 (D)	0.0077 (D)	0.006 (D)		0.0063 (D)		
1/18/2017	<0.0005 (D1)	0.0014 (D)		0.0014 (D)	0.0015 (D)	0.00091 (D)	0.0014 (D)		0.00069 (D)	0.00098 (D)
1/19/2017										
2/14/2017	0.0037 (D)	0.00385 (D)					0.0036 (D)		0.0034 (D)	0.0062 (D)
2/15/2017			0.0035 (D)	0.0038 (D)	0.00385 (D)	0.0038 (D)		0.0038 (D)		
2/28/2017	0.0011 (D)	0.0014 (D)						0.0011 (D)	0.0011 (D)	0.00091 (D)
3/1/2017				0.00075 (D)	0.00077 (D)	0.00082 (D)	0.00076 (D)			
11/13/2017	<0.0005 (D1)	<0.0005 (D1)						<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)
11/14/2017				<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)			
2/14/2018	<0.002	<0.002						<0.001		<0.001 (D)
2/15/2018				<0.001	<0.001	<0.0004	<0.002		<0.0004	
9/25/2018	<0.0005 (D)	<0.0005						<0.0005	<0.0005	<0.0005
9/26/2018				<0.0005	<0.0005 (D)	<0.0005 (D1)	<0.0005		<0.0005 (D1)	
5/14/2019	<0.0005	<0.0005 (D1D)						<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
5/15/2019				<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)		<0.0005 (D1D)	
9/24/2019	<0.0005 (D1D)	<0.0005 (D1D)						<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
9/25/2019				<0.0005	<0.0005 (D1D)	<0.0005 (D1D)			<0.0005 (D1D)	

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 65 background values. 81.54% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Antimony, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Antimony, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

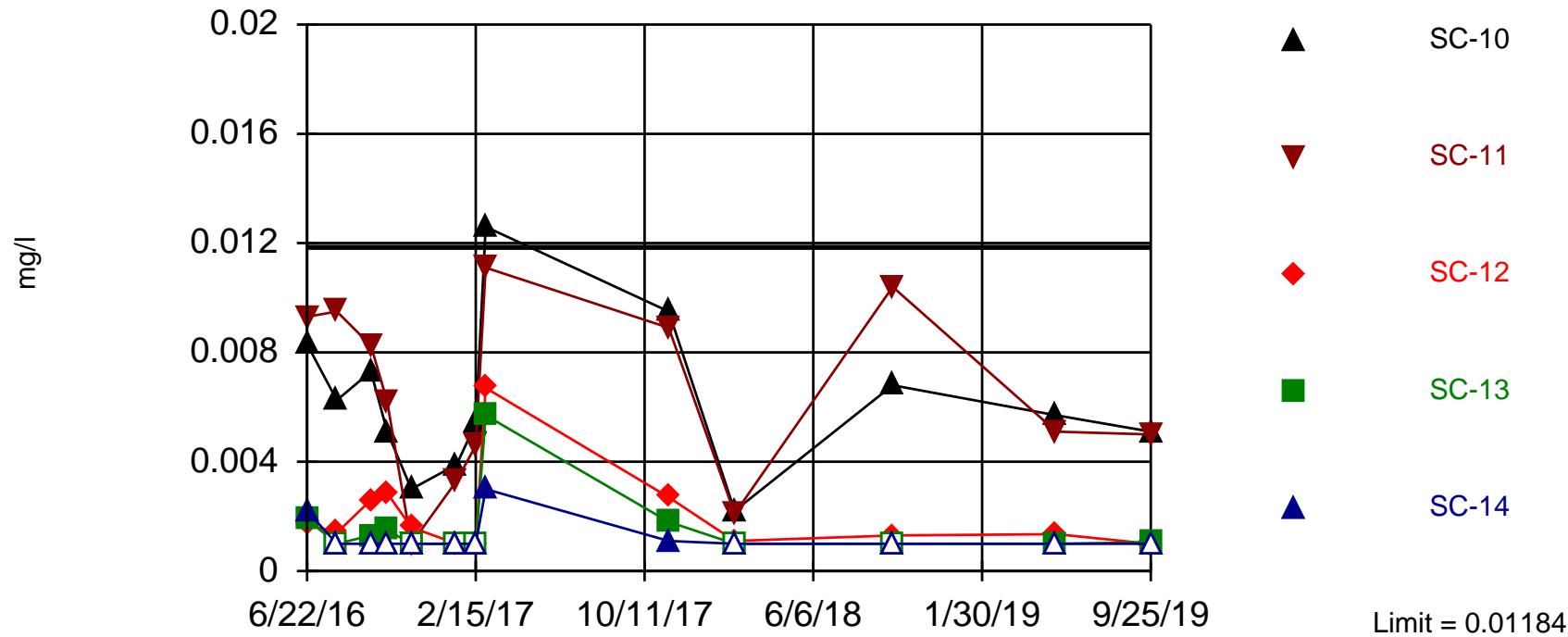
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	<0.0002	<0.0002 (D)	0.00021	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
6/23/2016									0.00021	
6/27/2016										0.00065
8/2/2016	<0.0002 (D)	<0.0002					<0.0002		<0.0002	0.00061
8/3/2016			<0.0002	<0.0002	<0.0002 (D)	<0.0002		<0.0002		
9/19/2016	<0.0002 (D1)	<0.0002 (D1)					<0.0002 (D1)		<0.0002 (D1)	<0.0002 (D1)
9/20/2016			0.00022 (D)	0.0002 (D)	<0.0002 (D1)	<0.0002 (D1)		<0.0002 (D1)		
10/12/2016	<0.0002 (D1)	0.0004 (D)					<0.0002 (D1)		0.00026 (D)	0.00032 (D)
10/13/2016			<0.0002 (D1)	<0.0002 (D1)	0.00025 (D)	0.00023 (D)		0.0002 (D)		
11/15/2016	0.0016 (D)	0.0015 (D)					<0.0002 (D1)		0.0015 (D)	0.0015 (D)
11/16/2016			<0.0002 (D1)	0.00059 (D)	0.0012 (D)	0.00093 (D)		0.00094 (D)		
1/18/2017	<0.0005 (D1P)	<0.0005 (D1)					<0.0005 (D1P)		0.00055 (D)	<0.0005 (D1)
1/19/2017			<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)		<0.0005 (D1)		
2/14/2017	<0.0005 (D1)	<0.0005 (D1)					<0.0005 (D1)		<0.0005 (D1)	0.00066 (D)
2/15/2017			<0.0005 (D1)	<0.0005 (D1)	0.00054 (D)	<0.0005 (D1)		<0.0005 (D1)		
2/28/2017	<0.0005 (D1)	<0.0005 (D1)					<0.0005 (D1)		<0.0005 (D1)	<0.0005 (D1)
3/1/2017			<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)		<0.0005 (D1)		
11/13/2017	<0.0005 (D1)	<0.0005 (D1)					<0.0005 (D1)		<0.0005 (D1)	<0.0005 (D1)
11/14/2017			<0.0005 (D1)	0.0071 (DT)	<0.0005 (D1)	<0.0005 (D1)		<0.0005 (D1)		
2/14/2018	<0.008	<0.008					<0.0008		<0.0008 (D)	<0.0008
2/15/2018			<0.0008	<0.0008	<0.008	<0.008		<0.008		
9/25/2018	<0.0005 (D)	<0.0005					<0.0005		<0.0005	<0.0005
9/26/2018			<0.0005	<0.0005 (D)	<0.0005	<0.0005		<0.0005		
5/14/2019	<0.0005 (D1D)	<0.0005 (D1D)					<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)
5/15/2019			<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)		<0.0005 (D1D)		
9/24/2019	<0.0005 (D1D)	<0.0005 (D1D)					<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
9/25/2019			<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)		<0.0005 (D1D)		

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.06086, Std. Dev.=0.02244, n=64, 14.06% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9519, critical = 0.947. Kappa = 2.138 (c=23, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002288. Individual comparison alpha = 0.000458. Comparing 5 points to limit.

Constituent: Arsenic, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

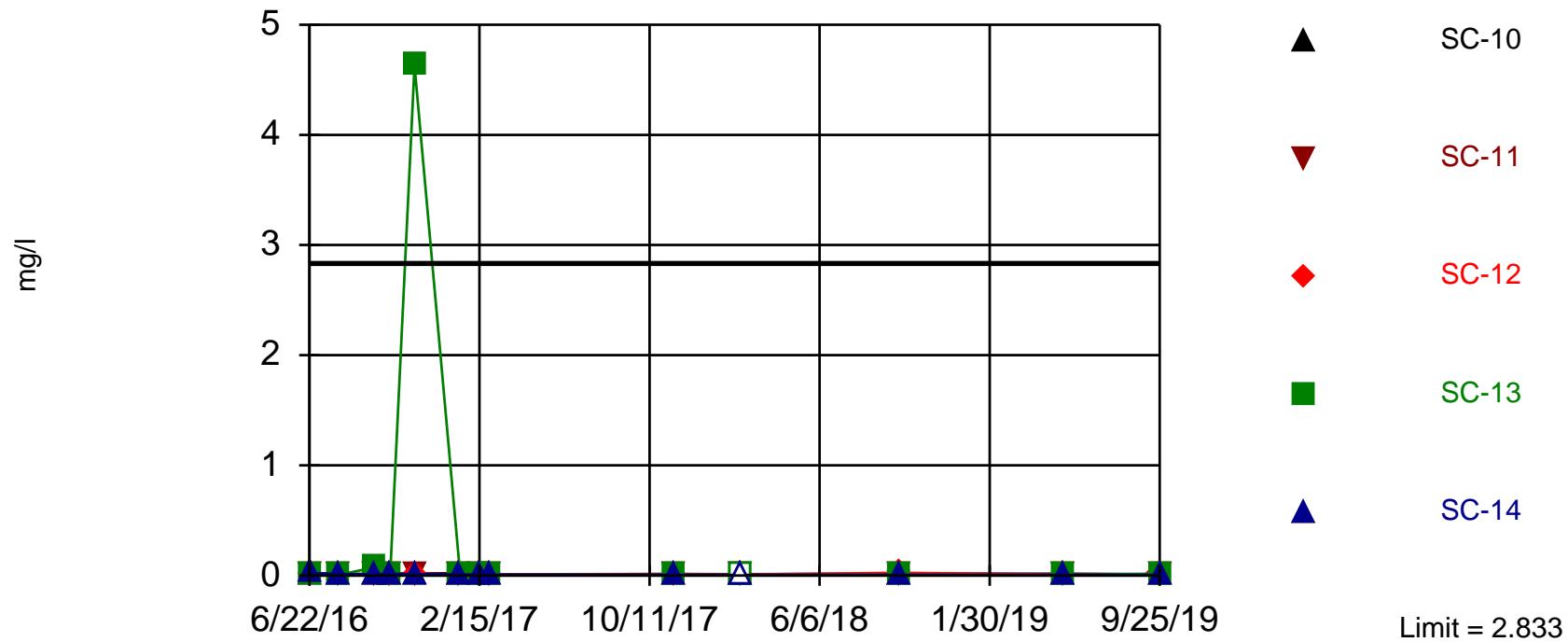
Constituent: Arsenic, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-14	SC-13	SC-12	SC-11	CC-1	FC-2	SC-10	FC-3A	FC-3B
6/22/2016	0.0042	0.0022	0.0019	0.0017	0.0093	0.0109 (D)	0.0025	0.0083		
6/23/2016									0.0031	
6/27/2016										0.0026
8/2/2016	0.0025 (D)					0.0105	0.0016		0.0021	0.0031
8/3/2016	<0.001	<0.001		0.0014	0.0095			0.00625 (D)		
9/19/2016	0.0094 (D)					0.0089 (D)	0.0036 (D)		0.0029 (D)	0.0051 (D)
9/20/2016	<0.001 (D1)	0.0013 (D)		0.0026 (D)	0.00825 (D)			0.0073 (D)		
10/12/2016	0.0023 (D)					0.0071 (D)	<0.001 (D1)		0.001325 (D)	0.0056 (D)
10/13/2016	<0.001 (D1)	0.0015 (D)		0.00285 (D)	0.0062 (D)			0.0051 (D)		
11/15/2016	0.0036 (D)					0.0054 (D)	<0.001 (D1)		0.0018 (D)	0.007 (D)
11/16/2016	<0.001 (D1)	<0.001 (D)		0.0016 (D)	<0.001 (D1)			0.003 (D)		
1/18/2017	0.0061 (D)			<0.001 (D1)	0.0033 (D)		0.00255 (D)	0.0011 (D)		<0.001 (D1)
1/19/2017	<0.001 (D1)	<0.001 (D1)		<0.001 (D1)				0.0039 (D)		0.0057 (D)
2/14/2017	<0.001 (D1)					0.00495 (D)	<0.001 (D1)			<0.001 (D1)
2/15/2017	<0.001 (D)	<0.001 (D1)		<0.001 (D1)	0.0046 (D)			0.0054 (D)		
2/28/2017	0.00625 (D)					0.011 (D)	0.0076 (D)		0.0069 (D)	0.0081 (D)
3/1/2017	0.003 (D)	0.0057 (D)		0.0067 (D)	0.0111 (D)			0.0126 (D)		
11/13/2017	0.0041 (D)					0.008 (D)	0.0025 (D)		0.0022 (D)	0.0064 (D)
11/14/2017	0.0011 (D)	0.0018 (D)		0.0027 (D)	0.0089 (D)			0.0095 (D)		
2/14/2018	<0.002						<0.001		0.00115 (D)	0.0026
2/15/2018	<0.001	<0.001		0.0011	0.0021			0.0022		
9/25/2018	0.005 (D)					0.0115	0.0014		0.003	0.0074
9/26/2018	<0.001	<0.001 (D)		0.0013	0.0104			0.0068		
5/14/2019	0.0029					0.0072 (D)	0.0013 (D)		0.0017 (D)	0.002 (D)
5/15/2019	<0.001 (D)	0.001 (D)		0.00135 (D)	0.0051 (D)			0.0057 (D)		
9/24/2019	0.00295 (D)				<0.001 (D1D)		0.0081 (D)	<0.001 (D1D)		0.0016 (D)
9/25/2019	<0.001 (D1D)	0.00105 (D)			0.005 (D)			0.0051 (D)		0.0044 (D)

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. 6.154% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Barium, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

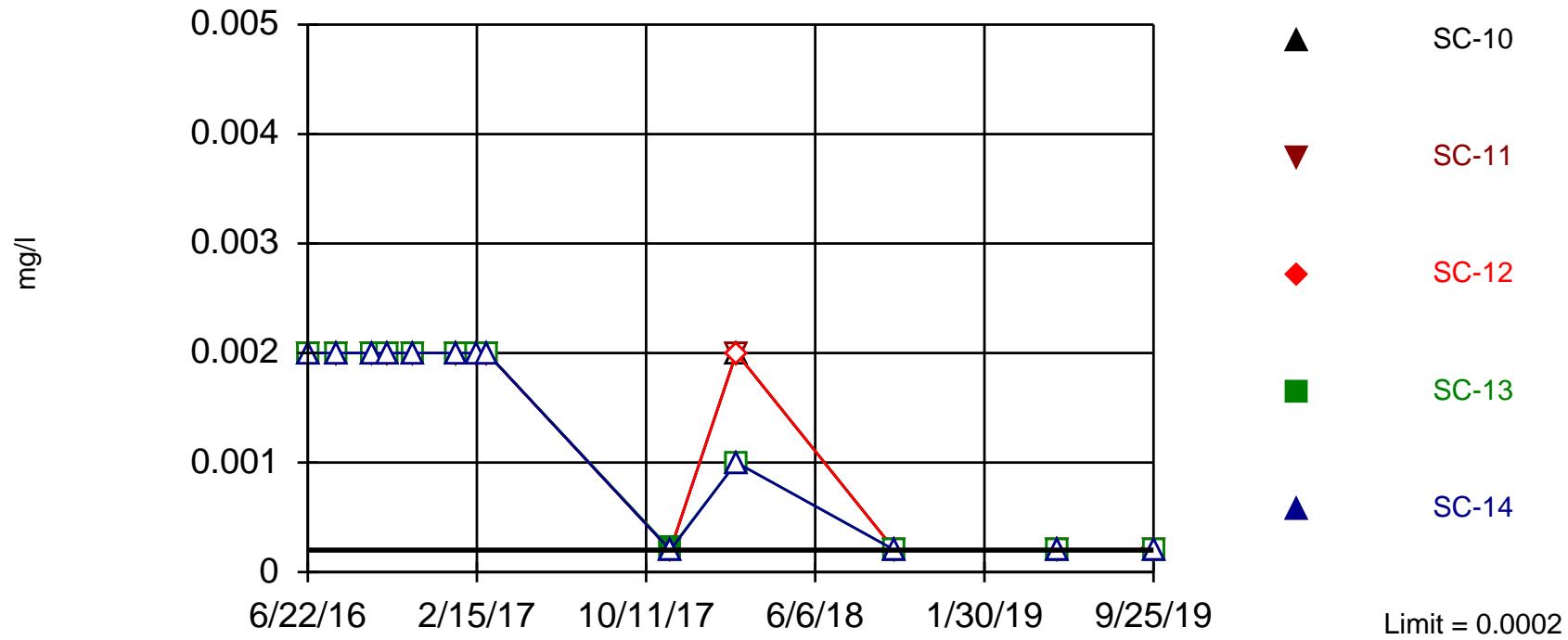
Constituent: Barium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-10	CC-1	SC-11	SC-12	SC-13	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	0.00954	0.0184	2.83285 (D)	0.017	0.0112	0.00979	0.00503	0.024		
6/23/2016								0.034		
6/27/2016										0.0336
8/2/2016	0.008725 (D)		0.00512				<0.005		0.0202	0.0253
8/3/2016		0.0138 (D)		0.0165	0.0133	0.00703		0.0131		
9/19/2016	0.00928		0.00542				0.00525 (D)		0.0218	0.0183
9/20/2016		0.013		0.009275 (D)		0.0736		0.0109		
10/12/2016	0.00905		0.00593				0.00536		0.03735 (D)	0.0184
10/13/2016		0.0141		0.0225	0.01415 (D)	0.00797		0.0163		
11/15/2016	0.0102		0.00608				0.00516		0.01735 (D)	0.0652
11/16/2016		0.0178		0.016	0.0178	4.629645 (D)		0.0136		
1/18/2017	0.00929		0.005675 (D)				0.00539		0.0164	0.0244
1/19/2017		0.0216		0.0117	0.0108	0.0075		0.00905		
2/14/2017	0.01		0.006005 (D)				0.00566		0.0167	0.023
2/15/2017		0.0145 (D)		0.0156	0.0127	0.00742		0.00766		
2/28/2017	0.009 (D)		<0.005				0.0054		0.0148	0.0208
3/1/2017		0.0105		0.00732	0.00781 (D)	0.00603		0.0063		
11/13/2017	0.0082 (D)		0.004 (D)				0.00435 (D)		0.0259 (D)	0.0154 (D)
11/14/2017		0.014 (D)		0.01395 (D)	0.0063 (D)	0.006 (D)		0.0052 (D)		
2/14/2018	0.0105		<0.01				<0.01		0.01205 (D)	0.0196
2/15/2018		0.0124		0.0089	0.0079	<0.01		<0.01		
9/25/2018	0.00665 (D)		0.0039				0.004		0.021	0.037
9/26/2018		0.0165		0.0099	0.0245	0.00575 (D)		0.0057		
5/14/2019	0.0073		0.0044 (D)				0.0043 (D)		0.0265 (D)	0.0146 (D)
5/15/2019		0.0168 (D)		0.0086 (D)	0.00755 (D)	0.0046 (D)		0.005 (D)		
9/24/2019	0.0073 (D)		0.0041 (D)		0.007 (D)		0.0056 (D)		0.0276 (D)	0.0268 (D)
9/25/2019		0.0124 (D)		0.0099 (D)		0.0168 (D)		0.0049 (D)		

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values ($n = 65$) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Beryllium, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Beryllium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

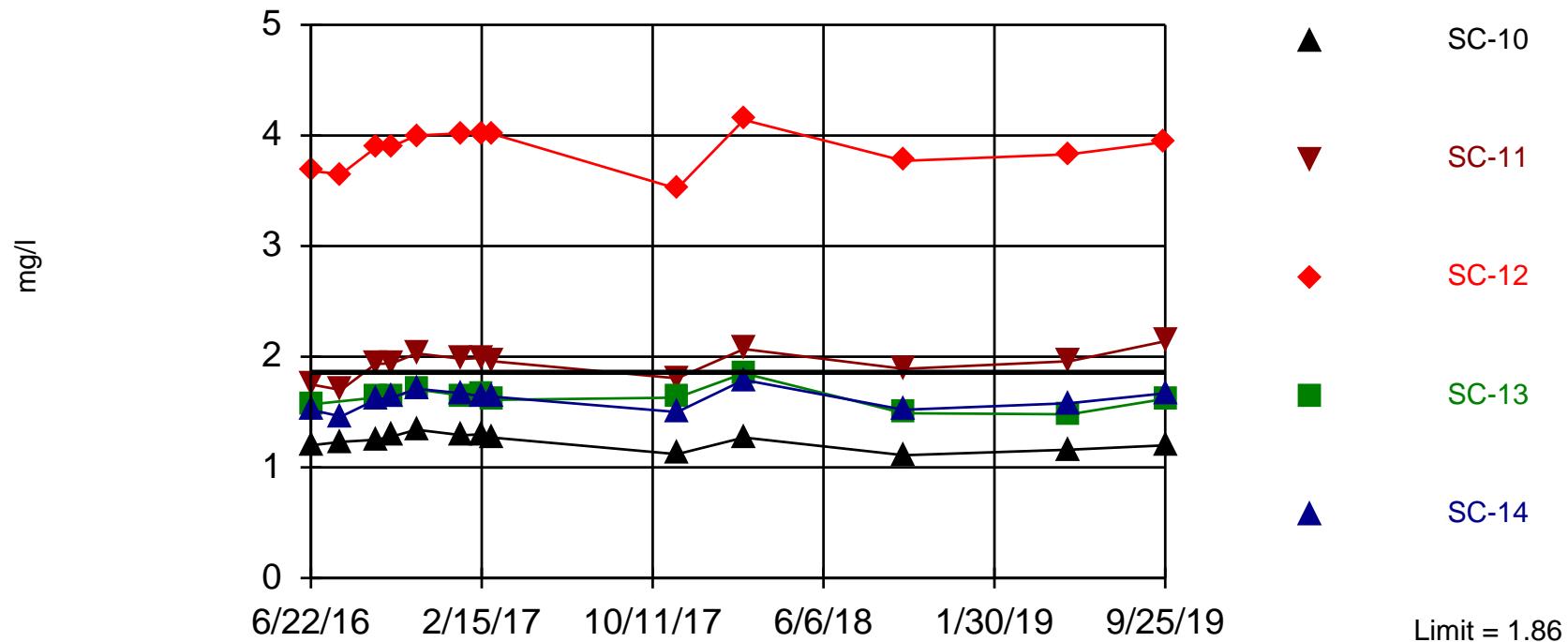
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	<0.002	<0.002 (D)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		
6/23/2016									<0.002	
6/27/2016										<0.002
8/2/2016	<0.002 (D)	<0.002		<0.002	<0.002 (D)	<0.002	<0.002		<0.002	<0.002
8/3/2016								<0.002		
9/19/2016	<0.002	<0.002		<0.002	<0.002 (D)	<0.002		<0.002 (D)	<0.002	<0.002
9/20/2016				<0.002	<0.002	<0.002		<0.002 (D)		
10/12/2016	<0.002	<0.002		<0.002	<0.002	<0.002 (D)			<0.002 (D)	<0.002
10/13/2016				<0.002	<0.002	<0.002 (D)			<0.002 (D)	<0.002
11/15/2016	<0.002	<0.002		<0.002	<0.002		<0.002		<0.002 (D)	<0.002
11/16/2016				<0.002	<0.002 (D)	<0.002	<0.002		<0.002	
1/18/2017	<0.002	<0.002 (D)		<0.002	<0.002	<0.002	<0.002		<0.002	<0.002
1/19/2017				<0.002	<0.002	<0.002		<0.002		
2/14/2017	<0.002	<0.002 (D)		<0.002	<0.002 (D)	<0.002	<0.002		<0.002	<0.002
2/15/2017				<0.002	<0.002	<0.002		<0.002		
2/28/2017	<0.002 (D)	<0.002		<0.002	<0.002	<0.002 (D)		<0.002	<0.002	<0.002
3/1/2017				<0.002	<0.002	<0.002 (D)		<0.002		
11/13/2017	<0.0002 (D1)	<0.0002 (D1)					<0.0002 (D1)		<0.0002 (D1)	<0.0002 (D1)
11/14/2017				<0.0002 (D1)	0.00021 (D)	<0.0002 (D1)	<0.0002 (D1)		<0.0002 (D1)	
2/14/2018	<0.001 (T)	<0.001 (T)		<0.001 (T)	<0.001 (T)	<0.002	<0.002		<0.0004 (T)	<0.0004 (TD)
2/15/2018				<0.001 (T)	<0.001 (T)	<0.002	<0.002		<0.002	<0.001 (T)
9/25/2018	<0.0002 (D)	<0.0002		<0.0002	<0.0002 (D)	<0.0002	<0.0002		<0.0002	<0.0002
9/26/2018				<0.0002	<0.0002 (D)	<0.0002	<0.0002		<0.0002	
5/14/2019	<0.0002	<0.0002 (D1D)		<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)		<0.0002 (D1D)	<0.0002 (D1D)
5/15/2019				<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)		<0.0002 (D1D)	
9/24/2019	<0.0002 (D1D)	<0.0002 (D1D)		<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (DD1)		<0.0002 (DD1)
9/25/2019				<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)	<0.0002 (D1D)		<0.0002 (D1D)	<0.0002 (D1D)

Exceeds Limit: SC-11, SC-12

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Prediction Limit

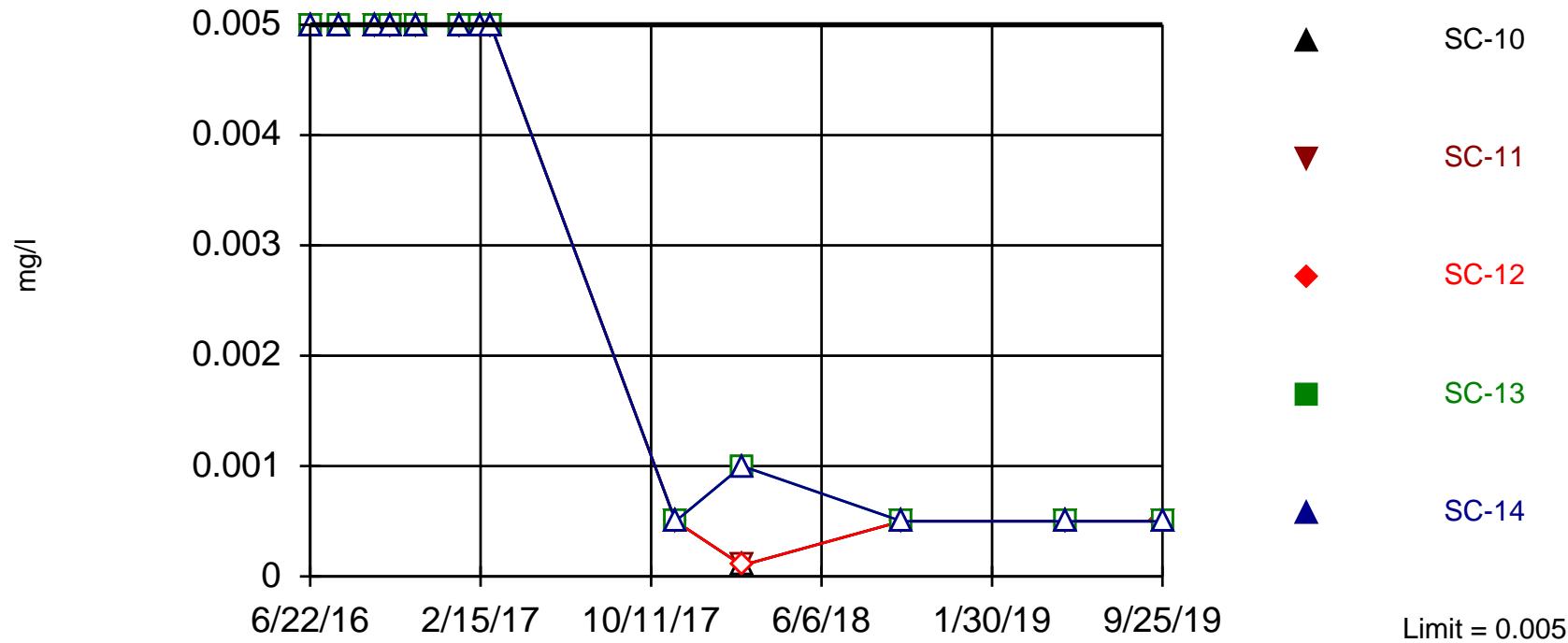
Constituent: Boron, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-10	CC-1	SC-11	SC-12	FC-2	SC-14	SC-13	FC-3A	FC-3B
6/22/2016	0.976 (T)	1.2	1.07 (D)	1.75	3.68	0.901 (T)	1.52	1.57		
6/23/2016									1.31	
6/27/2016										1.09
8/2/2016	0.9285 (D)		1.03			0.902			1.08	1.28
8/3/2016		1.23 (D)		1.7	3.65		1.46			
9/19/2016	0.932		1.05			0.937 (D)			1.2	1.46
9/20/2016		1.25		1.935 (D)	3.89		1.61	1.63		
10/12/2016	0.931		1.1			0.923			1.175 (D)	1.53
10/13/2016		1.28		1.94	3.9 (D)		1.63	1.63		
11/15/2016	1.03		1.12			0.936			1.185 (D)	1.68
11/16/2016		1.34		2.03	4		1.71	1.705 (D)		
1/18/2017	0.98		1.125 (D)			0.946			1.19	1.66
1/19/2017		1.29		1.98	4.02		1.67	1.65		
2/14/2017	0.972		1.115 (D)			0.934			1.14	1.59
2/15/2017		1.3 (D)		1.99	4.02		1.64	1.67		
2/28/2017	0.9495 (D)		1.03 (D)			0.956 (D)			1.14 (D)	1.73 (D)
3/1/2017		1.27 (DT1)		1.96 (DT1)	4.015 (DT1)		1.64 (D)	1.61 (DT1)		
11/13/2017	0.884		1.04			0.925 (D)			1.05	1.69
11/14/2017		1.12		1.805 (D)	3.52		1.5	1.63		
2/14/2018	1.05 (D)		1.08 (D)			0.957 (D)			1.13 (D)	1.86 (D)
2/15/2018		1.27 (DT)		2.07 (DT)	4.14 (DT)		1.79 (DT)	1.85 (DT)		
9/25/2018	0.887 (D)		1 (D)			0.887 (D)			1.03 (D)	1.73 (D)
9/26/2018		1.11 (D)		1.89 (D)	3.77 (D)		1.52 (D)	1.49 (D)		
5/14/2019	1.02		1.07			0.926			1.04 (D)	1.3
5/15/2019		1.16 (T)		1.96 (T)	3.83 (TD)		1.58 (T)	1.48 (T)		
9/24/2019	0.969 (D)		1.05		3.94	0.948			1.07	1.42
9/25/2019		1.2		2.14			1.67	1.62 (D)		

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 65 background values. 95.38% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Cadmium, Total Analysis Run 1/13/2020 10:59 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Cadmium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

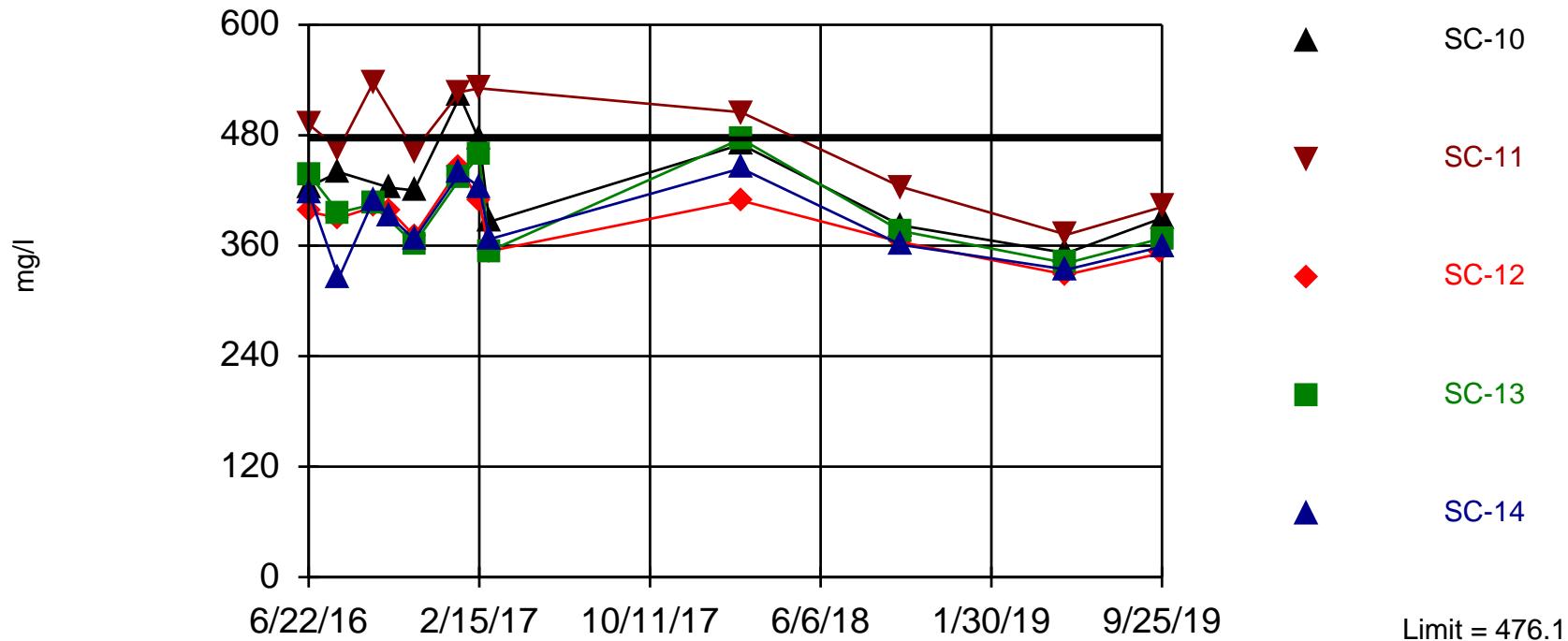
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-10	CC-1	SC-11	SC-12	SC-13	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	<0.005	<0.005	<0.005 (D)	<0.005	<0.005	<0.005	<0.005	<0.005		
6/23/2016									<0.005	
6/27/2016										<0.005
8/2/2016	<0.005 (D)		<0.005				<0.005		<0.005	<0.005
8/3/2016		<0.005 (D)				<0.005	<0.005		<0.005	
9/19/2016	<0.005		<0.005				<0.005		<0.005	<0.005
9/20/2016		<0.005		<0.005 (D)	<0.005	<0.005			<0.005	
10/12/2016	<0.005		<0.005				<0.005		<0.005 (D)	<0.005
10/13/2016		<0.005		<0.005	<0.005 (D)	<0.005			<0.005	
11/15/2016	<0.005		<0.005				<0.005		<0.005 (D)	<0.005
11/16/2016		<0.005		<0.005	<0.005	<0.005 (D)			<0.005	
1/18/2017	<0.005		<0.005 (D)				<0.005		<0.005	<0.005
1/19/2017		<0.005		<0.005	<0.005	<0.005			<0.005	
2/14/2017	<0.005		<0.005 (D)				<0.005		<0.005	<0.005
2/15/2017		<0.005 (D)		<0.005	<0.005	<0.005			<0.005	
2/28/2017	<0.005 (D)		<0.005				<0.005		<0.005	<0.005
3/1/2017		<0.005		<0.005	<0.005 (D)	<0.005			<0.005	
11/13/2017	<0.0005 (D1)		<0.0005 (D1)				<0.0005 (D1)		<0.0005 (D1)	<0.0005 (D1)
11/14/2017		<0.0005 (D1)		<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)			<0.0005 (D1)	
2/14/2018	<0.001		<0.001				0.00031		0.000365 (D)	0.00032
2/15/2018		<0.0001		<0.0001	<0.0001	<0.001			<0.001	
9/25/2018	<0.0005 (D)		<0.0005				<0.0005		<0.0005	<0.0005
9/26/2018		<0.0005		<0.0005	<0.0005	<0.0005 (D)			<0.0005	
5/14/2019	<0.0005		<0.0005 (D1D)				<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)
5/15/2019		<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)			<0.0005 (D1D)	
9/24/2019	<0.0005 (D1D)		<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)			<0.0005 (D1D)	<0.0005 (D1D)
9/25/2019		<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)			<0.0005 (D1D)	

Within Limit

Prediction Limit

Interwell Parametric



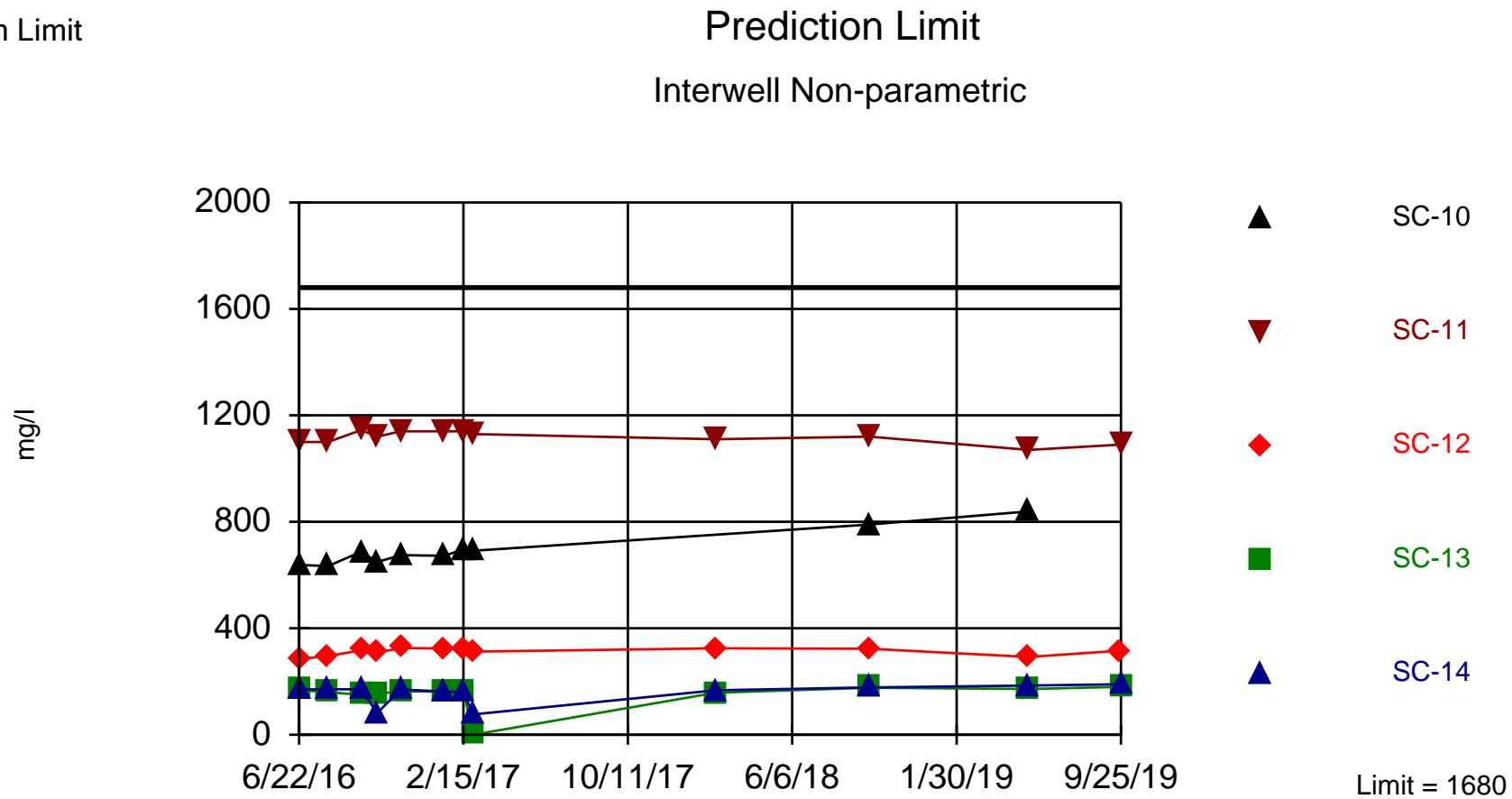
Prediction Limit

Constituent: Calcium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	SC-10	SC-11	SC-12	CC-1	SC-14	SC-13	FC-3A	FC-3B
6/22/2016	404	405 (T1D)	424 (DT1)	492 (DT1)	397 (DT1)	472 (DT1)	418 (DT1)	438 (DT1)		
6/23/2016									440 (DT1)	453 (DT1)
6/27/2016										
8/2/2016	410 (DT1)	440 (DT1)		440 (DT1)	465 (DT1)	390 (DT1)		325	396 (DT1)	417 (DT1) 412 (DT1)
8/3/2016										
9/19/2016	388 (DT1)	393.5 (DT1)				483 (DT1)			433 (DT1)	424 (DT1)
9/20/2016					537 (DT1)	402 (DT1)		409 (D)	405 (D)	
10/12/2016	389 (D)	390 (D)					398 (DT1)			398 (DT1)
10/13/2016					423 (DT1)		399 (DT1)			
11/15/2016									385 (D)	331 (D)
11/16/2016					420 (DT1)	463 (DT1)	371 (DT1)		362 (DT1)	
1/18/2017	438 (T1D)	438 (T1D)							445 (DT1)	282 (DT1)
1/19/2017					522 (DT1)	527 (DT1)	445 (D)	439 (DT1)	433 (DT1)	
2/14/2017	408 (DT1)						431.5 (DT1)			420 (DT1) 296 (DT1)
2/15/2017					474.5 (DT1)	531 (DT1)	408 (DT1)	424 (DT1)	458 (DT1)	
2/28/2017	376.5 (DT1)	381 (DT1)					379 (DT1)		390 (DT1)	325 (DT1)
3/1/2017					386 (DT1)		354 (DT1)	367 (DT1)	354 (DT1)	
2/14/2018	397 (DT)	387 (DT)					392 (DT)		401 (DT)	246 (DT)
2/15/2018					470 (DT)	505 (DT)	409 (DT)	444 (DT)	476 (DT)	
9/25/2018	370 (D)	368 (D)							386 (D)	233 (D)
9/26/2018					382 (D)	424 (D)	364 (D)	361 (D)	376 (D)	
5/14/2019	337 (T1)	344					340 (T1)			353.5 (T1D) 196 (T1)
5/15/2019					352 (T1)	372 (T1)	328.5 (T1D)		334 (T1) 341 (T1)	
9/24/2019	368.5 (D)	374 (D)				352 (DT1)	400 (D)			379 (D) 201 (D)
9/25/2019					390	402 (D)		359 (DT1)	368 (DT1)	

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit.

Constituent: Chloride Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Chloride (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

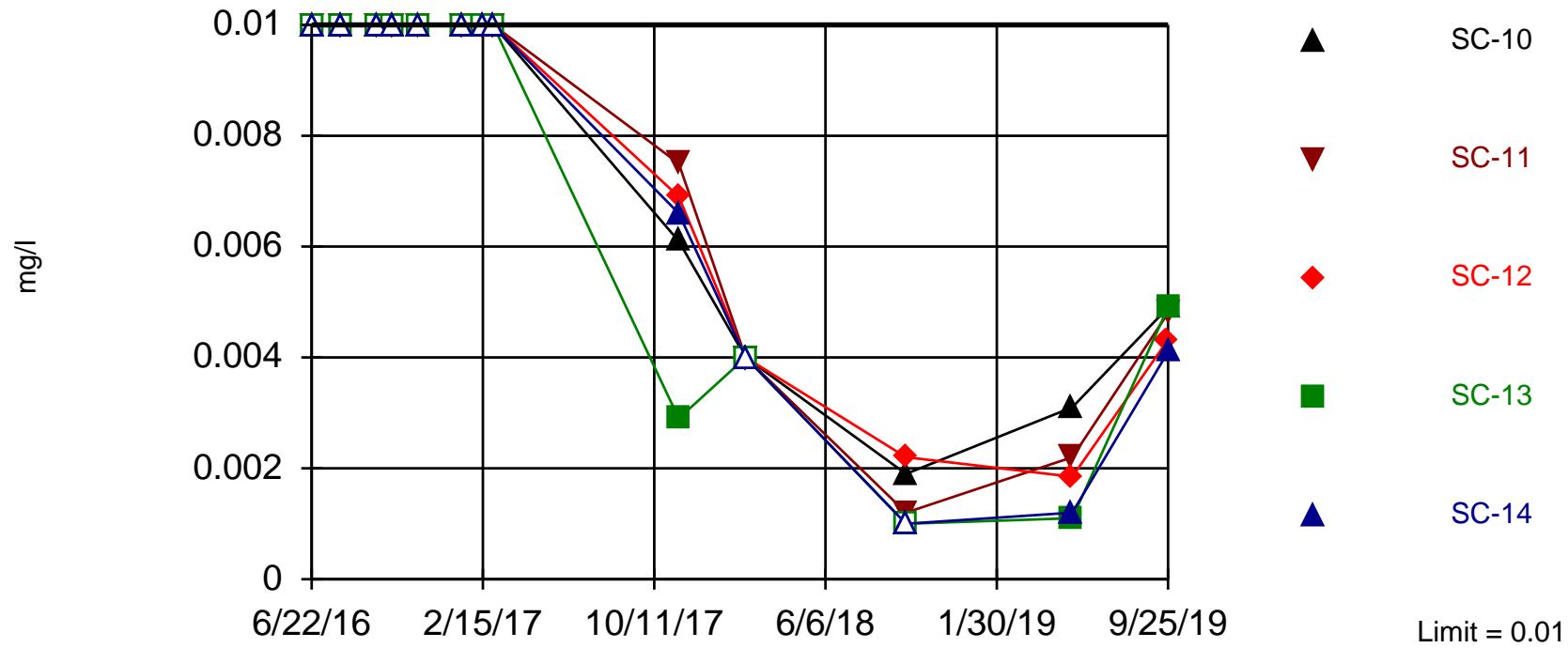
	FC-1	SC-13	SC-12	SC-11	SC-10	SC-14	CC-1	FC-2	FC-3A	FC-3B
6/22/2016	772 (D)	168 (D)	284 (D)	1100 (D)	638 (D)	170 (D)	1535 (D)	132 (D)		
6/23/2016									92.5 (D)	
6/27/2016										319 (D)
8/2/2016	761.5 (D)						1540 (D)	128 (D)	91 (D)	504 (D)
8/3/2016		160 (D)	296 (D)	1100 (D)	633.5 (D)	171 (D)				
9/19/2016	760 (D)		150 (D)	317 (D)	1145 (D)	688 (D)	171 (D)		130 (D)	96.3 (D)
9/20/2016									96.3 (D)	594 (D)
10/12/2016	750 (D)		154 (D)	308.5 (D)	1120 (D)	649 (D)	81.2 (D)		124 (D)	99.55 (D)
10/13/2016										687 (D)
11/15/2016	71.2 (D)		163 (D)	326 (D)	1140 (D)	675 (D)	170 (D)		127 (D)	101.5 (D)
11/16/2016										676 (D)
1/18/2017	741 (D)		162 (D)	324 (D)	1140 (D)	672 (D)	162 (D)		125 (D)	104 (D)
1/19/2017										631 (D)
2/14/2017	738 (D)						1515 (D)	123 (D)	107 (D)	732 (D)
2/15/2017		165 (D)	320 (D)	1140 (D)	697.5 (D)	160 (D)				
2/28/2017	769 (D)		0.163 (D)	312.5 (D)	1130 (D)	691 (D)	76.5 (D)		122 (D)	107 (D)
3/1/2017										818 (D)
2/14/2018	756 (D)		158 (DT)	325 (TD)	1110 (DT)		167 (DT)		124 (D)	115.5 (D)
2/15/2018										652 (D)
9/25/2018	783.5 (D)		177 (D)	323 (D)	1120 (D)	790 (D)	178 (D)		118 (D)	122 (D)
9/26/2018										1210 (D)
5/14/2019	782 (D)		172 (D)	292 (D)	1070 (D)	839 (D)	185 (D)		113 (D)	124 (D)
5/15/2019										199 (D)
9/24/2019	811 (D)			316 (D)				1580 (D)	116 (D)	127 (D)
9/25/2019		180 (D)			1090 (D)		190 (D)			220 (D)

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 65 background values. 69.23% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Chromium, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Chromium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

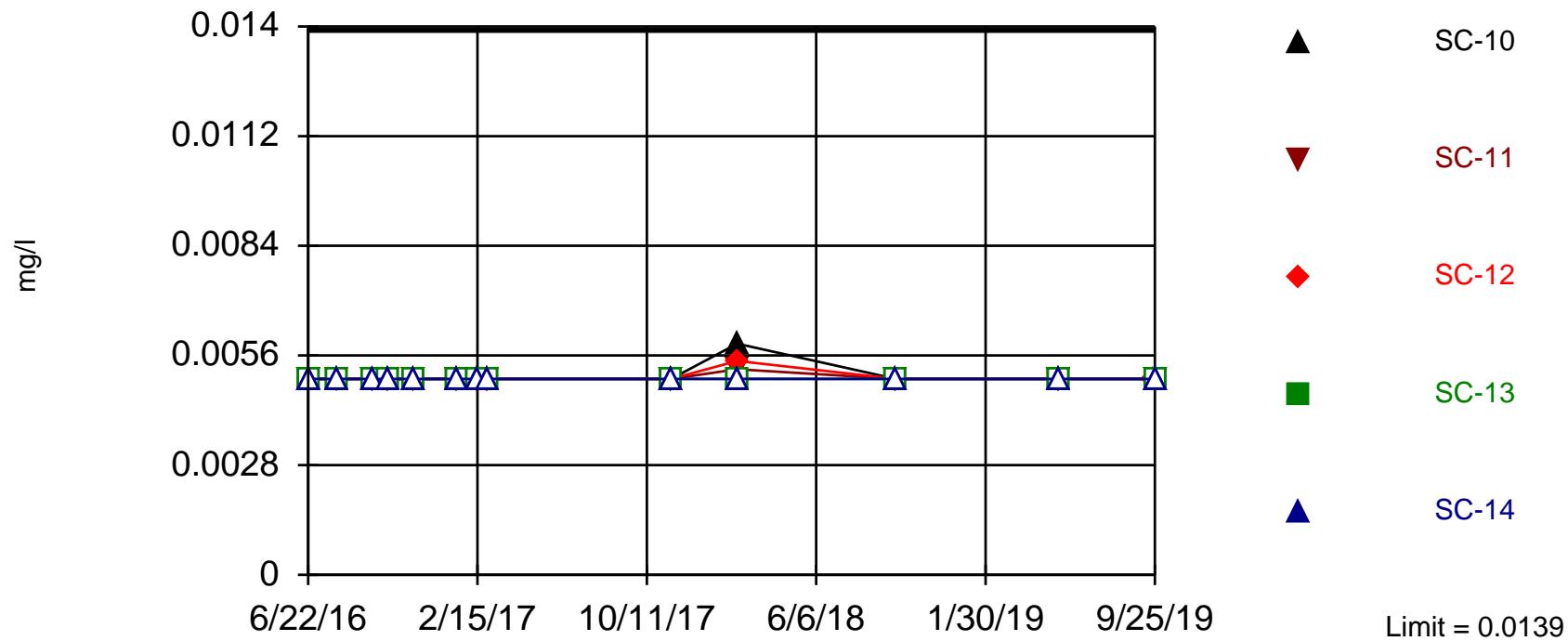
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	<0.01	<0.01 (D)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
6/23/2016									<0.01	
6/27/2016										<0.01
8/2/2016	<0.01 (D)	<0.01		<0.01	<0.01 (D)	<0.01	<0.01		<0.01	<0.01
8/3/2016								<0.01		
9/19/2016	<0.01	<0.01		<0.01	<0.01 (D)	<0.01		<0.01 (D)	<0.01	<0.01
9/20/2016									<0.01 (D)	
10/12/2016	<0.01	<0.01		<0.01	<0.01	<0.01			<0.01 (D)	<0.01
10/13/2016									<0.01	
11/15/2016	<0.01	<0.01		<0.01	<0.01 (D)	<0.01			<0.01 (D)	<0.01
11/16/2016									<0.01	
1/18/2017	<0.01	<0.01 (D)		<0.01	<0.01	<0.01			<0.01	<0.01
1/19/2017										
2/14/2017	<0.01	<0.01 (D)		<0.01	<0.01 (D)	<0.01			<0.01	<0.01
2/15/2017									<0.01	
2/28/2017	<0.01 (D)	<0.01		<0.01	<0.01	<0.01 (D)			<0.01	<0.01
3/1/2017										
11/13/2017	0.006 (D)	0.0064 (D)					0.0051 (D)		0.0062 (D)	0.0086 (D)
11/14/2017			0.0066 (D)	0.0029 (D)	0.0061 (D)	0.0069 (D)		0.0075 (D)		
2/14/2018	<0.004	<0.004		<0.004	<0.004	<0.004		<0.004		<0.004 (D)
2/15/2018								<0.004		0.0058
9/25/2018	0.001 (D)	0.0017		<0.001	<0.001 (D)	0.0019	0.0022			0.0025
9/26/2018								0.0012		0.0061
5/14/2019	0.0013	0.0018 (D)		0.0012 (D)	0.0011 (D)	0.0031 (D)	0.00185 (D)	<0.001 (D)		0.0031 (D)
5/15/2019									0.0022 (D)	0.0049 (D)
9/24/2019	0.0042 (D)	0.0036 (D)		0.0041 (D)	0.0049 (D)	0.0049 (D)	0.0043 (D)	0.0035 (D)		0.0054 (D)
9/25/2019									0.0048 (D)	0.0089 (D)

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 63 background values. 84.13% NDs. Annual per-constituent alpha = 0.004816. Individual comparison alpha = 0.0004826 (1 of 2). Comparing 5 points to limit.

Constituent: Cobalt, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Cobalt, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

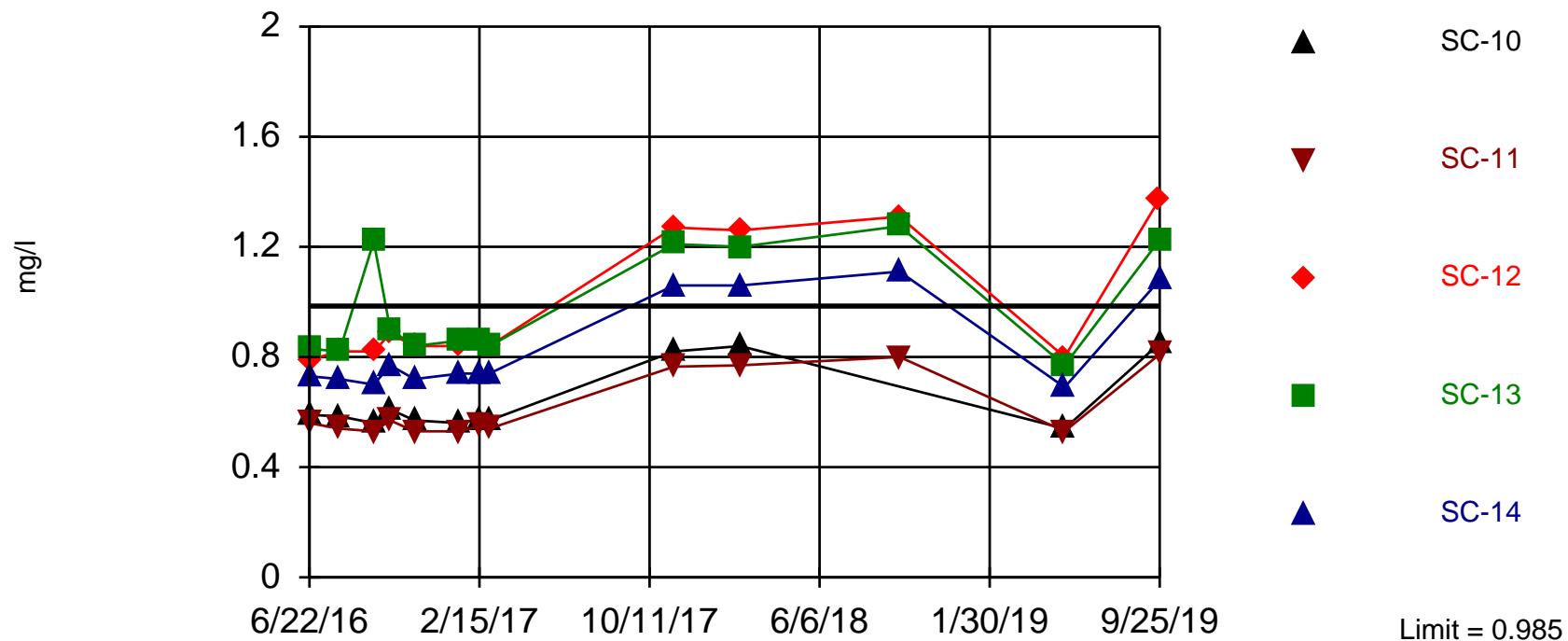
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-14	SC-13	SC-12	SC-11	CC-1	FC-2	SC-10	FC-3A	FC-3B
6/22/2016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005 (D)	<0.005	<0.005		
6/23/2016									<0.005	
6/27/2016										0.0078
8/2/2016	<0.005 (D)						<0.005		<0.005	0.005
8/3/2016		<0.005	<0.005	<0.005	0.005			<0.005 (D)		
9/19/2016	<0.005		<0.005	<0.005	<0.005 (D)		<0.005	<0.005 (D)		<0.005
9/20/2016		<0.005		<0.005					<0.005 (D)	<0.005
10/12/2016	<0.005			<0.005			<0.005	<0.005		
10/13/2016		<0.005	<0.005	<0.005 (D)	<0.005				<0.005 (D)	<0.005
11/15/2016	<0.005						<0.005	<0.005		
11/16/2016		<0.005	<0.005 (D)	<0.005	<0.005				<0.005	
1/18/2017	<0.005						<0.005 (D)	<0.005		<0.005
1/19/2017		<0.005	<0.005	<0.005	<0.005				<0.005	0.00778
2/14/2017	<0.005						<0.005 (D)	<0.005		<0.005
2/15/2017		<0.005	<0.005	<0.005	<0.005				<0.005 (D)	
2/28/2017	<0.005 (D)						<0.005	<0.005		<0.005
3/1/2017		<0.005	<0.005	<0.005 (D)	<0.005				<0.005	0.00553
11/13/2017	<0.005						<0.005	<0.005 (D)		<0.005
11/14/2017		<0.005	<0.005	<0.005	<0.005 (D)				<0.005	0.0118
2/14/2018						0.00636	<0.005			<0.005 (D)
2/15/2018	<0.005		<0.005	0.00546	0.00525				0.0059	
9/25/2018	<0.005 (DD1)					<0.005 (DD1)	<0.005 (DD1)			<0.005 (DD1)
9/26/2018		<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)	<0.005 (DD1)				<0.005 (DD1)	0.0108 (D)
5/14/2019	<0.005						<0.005	<0.005		<0.005 (D)
5/15/2019		<0.005	<0.005	<0.005	<0.005				<0.005	<0.005
9/24/2019	<0.005 (D)				<0.005		<0.005	<0.005		<0.005
9/25/2019		<0.005	<0.005 (D)		<0.005			<0.005		

Exceeds Limit: SC-12, SC-13, SC-14

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Fluoride, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Fluoride, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

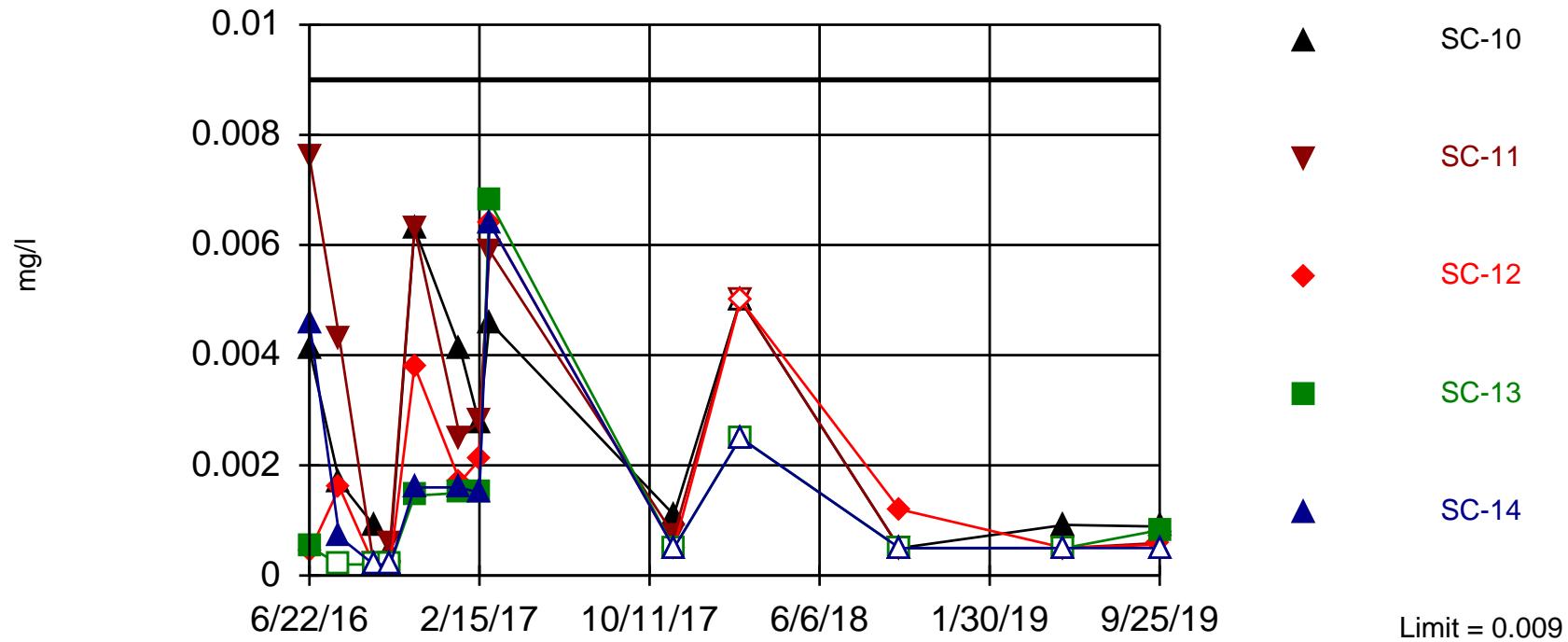
	FC-1	SC-13	SC-12	SC-11	SC-14	SC-10	CC-1	FC-2	FC-3A	FC-3B
6/22/2016	0.12 (T)	0.83 (T)	0.79 (T)	0.56 (T)	0.73 (T)	0.59 (T)	0.215 (TD)	0.51 (T)		
6/23/2016									0.46 (T)	
6/27/2016										0.55
8/2/2016	0.06006 (TD)						0.21 (T)	0.5 (T)	0.46 (T)	0.00048 (T)
8/3/2016		0.82 (T)	0.82 (T)	0.54 (T)	0.72 (T)	0.585 (TD)				
9/19/2016	0.13	1.22 (D)	0.82	0.53 (D)	0.7	0.56	0.22	0.985 (D)	0.48	0.48
9/20/2016										
10/12/2016	0.12 (T)						0.21 (T)	0.52 (T)	0.465 (TD)	0.51 (T)
10/13/2016		0.9 (T)	0.885 (TD)	0.57 (T)	0.77 (T)	0.61 (T)				
11/15/2016	0.12 (T)						0.2 (T)	0.51 (T)	0.46 (TD)	0.46 (T)
11/16/2016		0.84 (D)	0.84 (T)	0.53 (T)	0.72 (T)	0.57 (T)				
1/18/2017	0.13 (T)						0.2 (TD)	0.52 (T)	0.46 (T)	0.56 (T)
1/19/2017		0.86 (T)	0.84 (T)	0.53 (T)	0.74 (T)	0.56 (T)				
2/14/2017	0.13 (T)						0.22 (TD)	0.55 (T)	0.48 (T)	0.51 (T)
2/15/2017		0.86 (T)		0.55 (T)	0.74 (T)	0.575 (TD)				
2/28/2017	0.13 (TD)						0.22 (T)	0.53 (T)	0.47 (T)	0.42 (T)
3/1/2017		0.84 (T)	0.84 (TD)	0.54 (T)	0.74 (T)	0.57 (T)				
11/13/2017	0.2	1.21	1.27	0.765 (D)	1.06	0.82	0.45	0.7 (D)	0.56	0.48
11/14/2017										
2/14/2018	0.21	1.2	1.26	0.77	1.06	0.84	0.5	0.74	0.615 (D)	0.53
2/15/2018										
9/25/2018	0.195 (D)		1.275 (D)	1.31	0.8	1.11	0.48	0.73	0.62	0.52
9/26/2018										
5/14/2019	0.13	0.77	0.8 (D)	0.53	0.69	0.54	0.2	0.51	0.44 (D)	0.69
5/15/2019										
9/24/2019	0.195 (D)		1.37				0.53	0.72	0.59	0.72
9/25/2019		1.225 (D)		0.81	1.08	0.85				

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. 46.15% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Lead, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

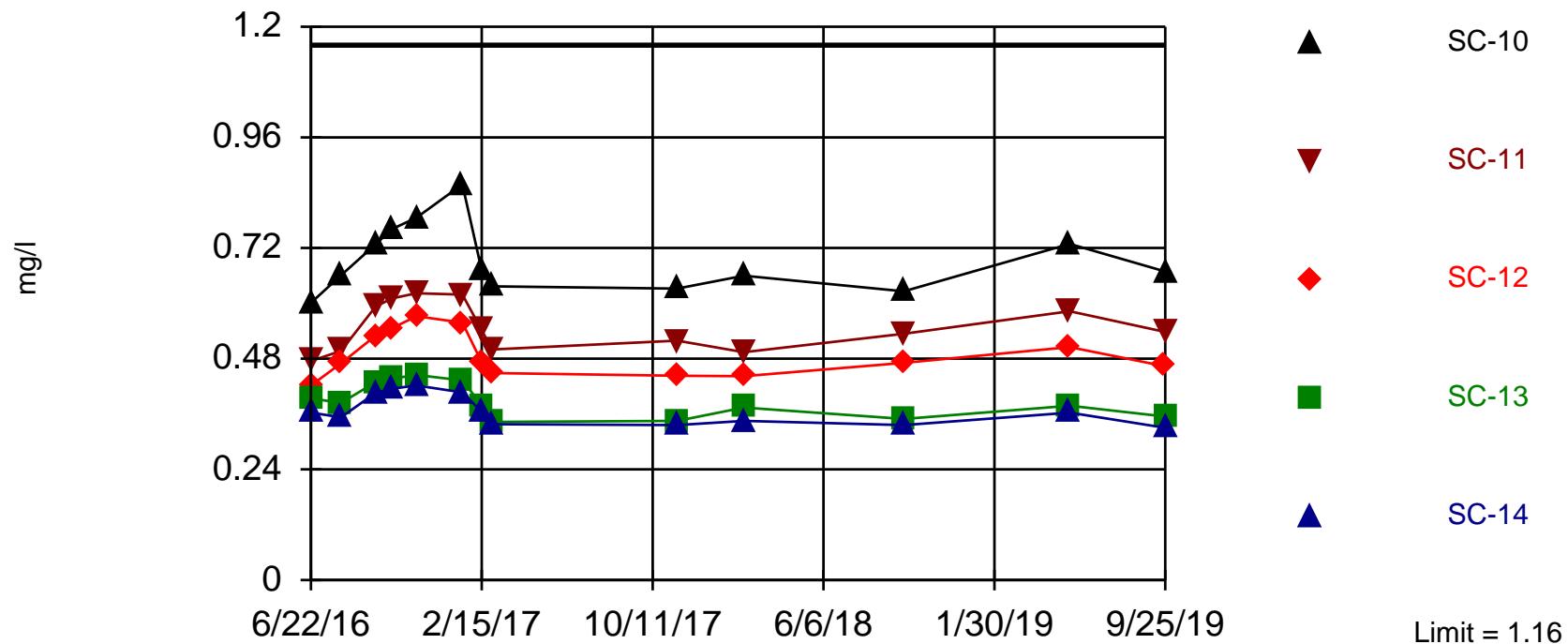
Constituent: Lead, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Within Limit

Prediction Limit

Interwell Non-parametric



Prediction Limit

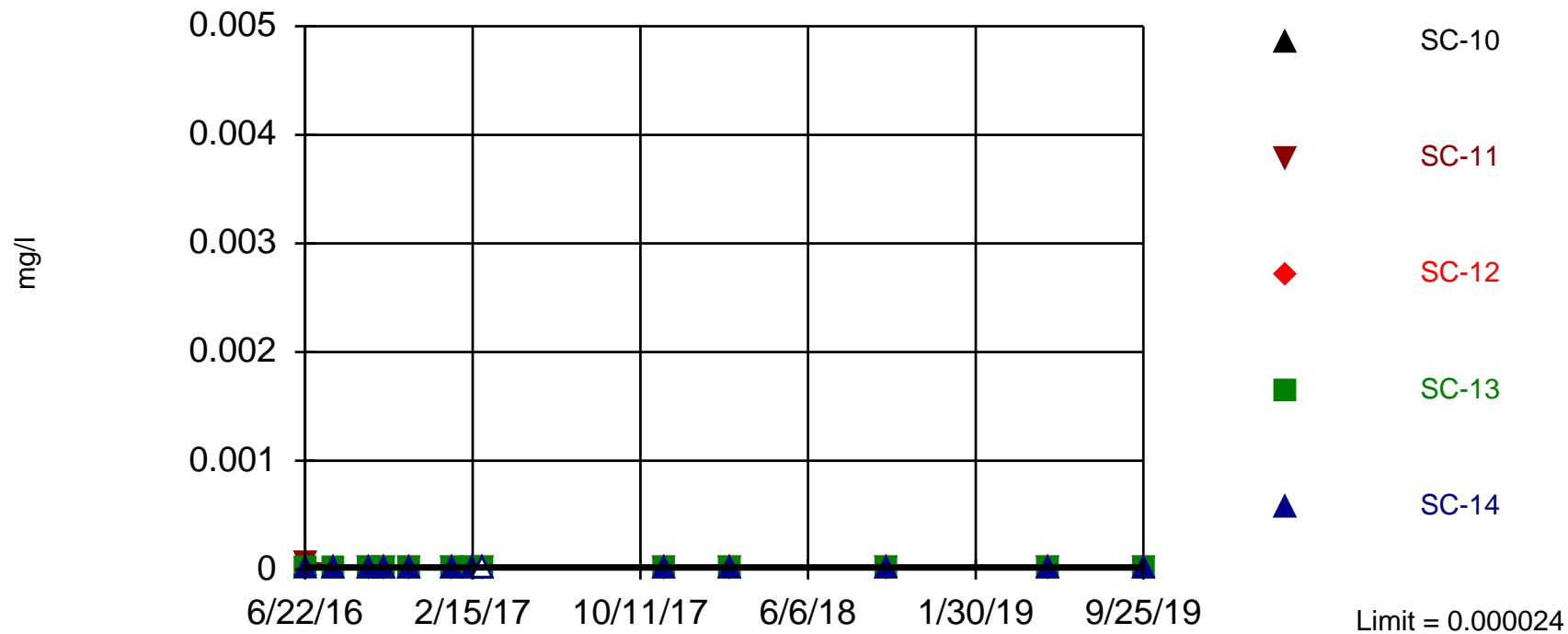
Constituent: Lithium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	0.904	0.671 (D)	0.363	0.394	0.601	0.422	0.269	0.475		
6/23/2016									0.303	
6/27/2016										0.232
8/2/2016	0.984 (D)	0.731		0.353	0.384	0.661 (D)	0.47	0.305	0.311	0.274
8/3/2016								0.497		
9/19/2016	1.01	0.779		0.406	0.429	0.728	0.53	0.306 (D)	0.343	0.295
9/20/2016								0.593 (D)		
10/12/2016	1.03	0.825		0.415	0.437	0.761	0.546 (D)		0.3455 (D)	0.315
10/13/2016										
11/15/2016	1.16	0.822		0.422	0.4445 (D)	0.786	0.572	0.325 (T)	0.3375 (D)	0.344
11/16/2016								0.611		
1/18/2017	1.08	0.791 (D)		0.407 (D)	0.433 (D)	0.858 (D)	0.558 (D)	0.318	0.343 (D)	0.335
1/19/2017								0.619 (D)		
2/14/2017	1	0.73 (D)		0.365	0.379	0.671 (D)	0.472	0.298	0.312	0.334
2/15/2017								0.542		
2/28/2017	0.9125 (D)	0.641		0.338 (D)	0.343 (D)	0.637 (D)	0.449 (D)	0.275 (D)	0.283 (D)	0.326 (D)
3/1/2017								0.5 (D)		
11/13/2017	0.894	0.63		0.336	0.345	0.632	0.443	0.2665 (D)	0.288	0.31
11/14/2017								0.519 (D)		
2/14/2018	0.9 (D)	0.576 (D)		0.345 (D)	0.374 (D)	0.66 (D)	0.442 (D)	0.265 (D)	0.2635 (D)	0.341 (D)
2/15/2018								0.494 (D)		
9/25/2018	0.9085 (D)	0.664 (D)		0.336 (D)	0.3495 (D)	0.626 (D)	0.471 (D)	0.276 (D)	0.302 (D)	0.316 (D)
9/26/2018								0.534 (D)		
5/14/2019	1.13	0.798		0.363	0.378	0.729	0.505 (D)		0.3265 (D)	0.321
5/15/2019								0.583		
9/24/2019	0.9695 (D)	0.722 (D)		0.33 (D)	0.3545 (D)	0.669 (D)		0.274 (D)	0.303 (D)	0.284 (D)
9/25/2019								0.538		

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 64 background values. Annual per-constituent alpha = 0.004681. Individual comparison alpha = 0.0004691 (1 of 2). Comparing 5 points to limit.

Constituent: Mercury, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Mercury, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

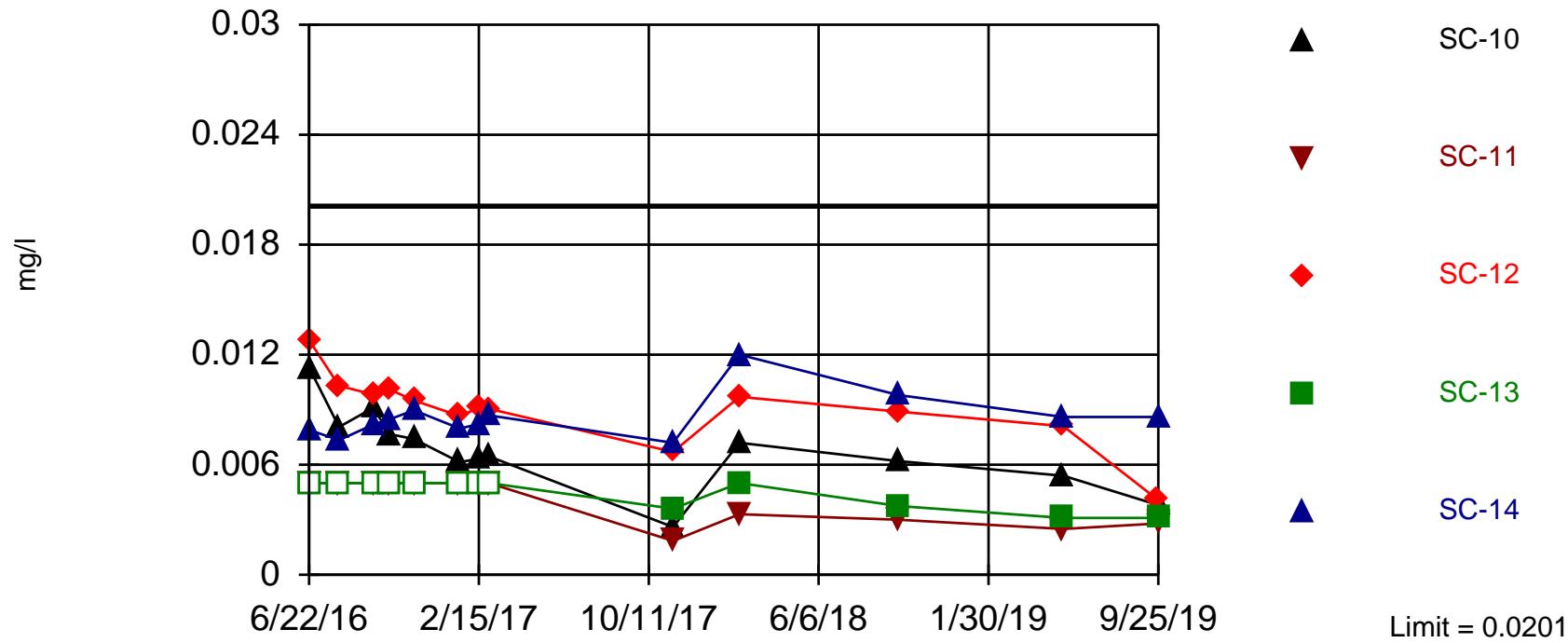
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-10	SC-11	SC-12	SC-13	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	1.3E-06	4.7E-06 (D)	3.6E-05	6.7E-05	4.5E-06	3.6E-06	2.8E-06	1.2E-05		
6/23/2016									5.4E-06	
6/27/2016										1.3E-05
8/2/2016	2E-06 (D)	6E-06					4E-06		7E-06	6E-06
8/3/2016			1.05E-05 (D)		6E-06	2E-06		3E-06		
9/19/2016	2E-06	6E-06		1.6E-05	9.5E-06 (D)	5E-06	3E-06		4E-06	3E-06
9/20/2016										
10/12/2016	2E-06	6E-06		1E-05	1E-05	3E-06 (D)	2E-06		5E-06 (D)	3E-06
10/13/2016										
11/15/2016	2E-06	6E-06		1E-05	1E-05	4E-06	2E-06 (D)		2E-06 (D)	9E-06
11/16/2016										
1/18/2017	2E-06	7.5E-06 (D)		1.1E-05	1E-05	4E-06	3E-06		2E-06	8E-06
1/19/2017										
2/14/2017	2E-06	6E-06 (D)					4E-06		2E-06	4E-06
2/15/2017			9E-06 (D)	8E-06	3E-06	2E-06		2E-06		
2/28/2017	2E-06 (D)	6E-06		9E-06	9E-06	3E-06 (D)	3E-06		2E-06	5E-06
3/1/2017										
11/13/2017	2E-06 (T)	6E-06 (T)		1E-05	7.5E-06 (D)	4E-06	2E-06		4E-06 (T)	7E-06 (T)
11/14/2017										
2/14/2018	2E-06	5E-06		1.1E-05	1.3E-05	4E-06	2E-06		2E-06 (D)	5E-06
2/15/2018										
9/25/2018	2.5E-06 (D)	5E-06		9E-06	8E-06	5E-06	2E-06 (D)		3E-06	2.4E-05
9/26/2018										
5/14/2019	2E-06	6E-06		1E-05	9E-06	4E-06 (D)	2E-06		7.5E-06 (D)	3E-06
5/15/2019										
9/24/2019	2E-06 (D)	5E-06				4E-06		5E-06		8E-06
9/25/2019				1E-05	9E-06		4E-06 (D)		2E-06	5E-06

Within Limit

Prediction Limit

Interwell Non-parametric



Prediction Limit

Constituent: Molybdenum, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

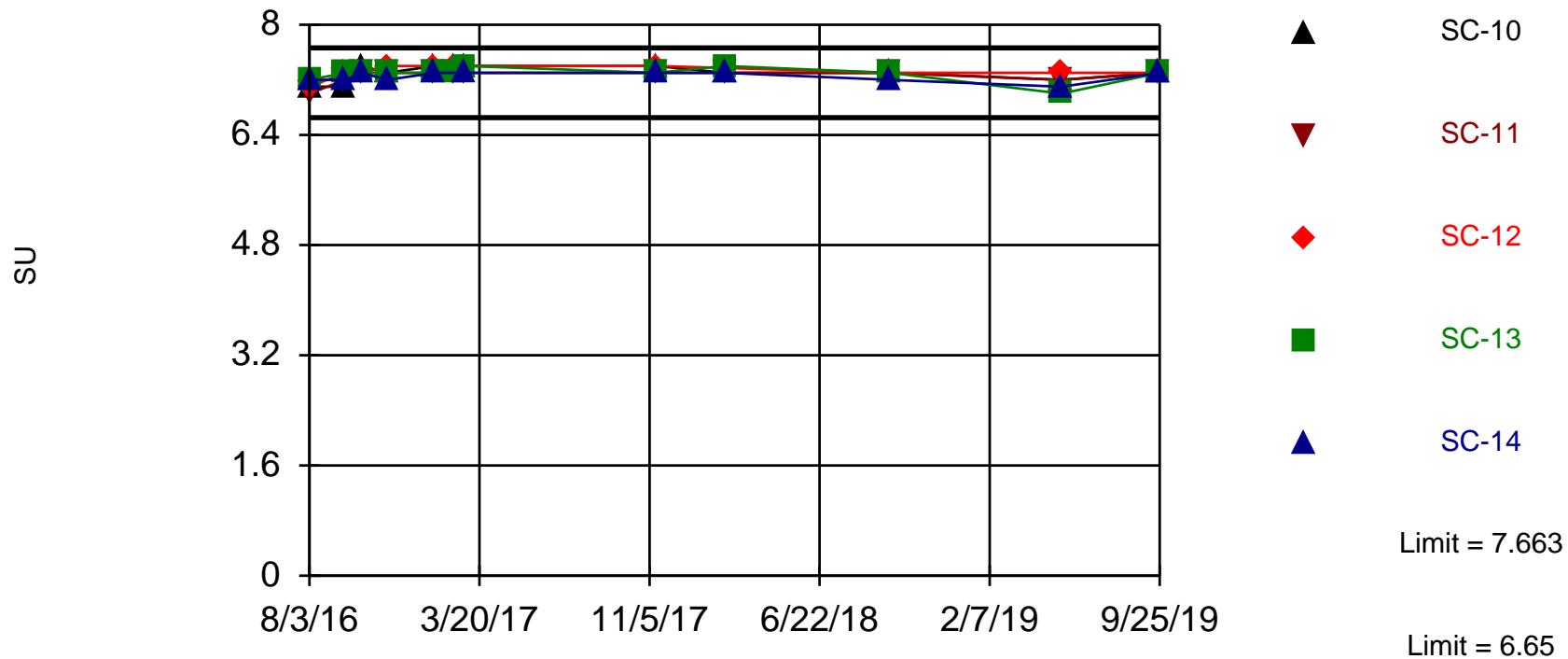
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	<0.005	<0.005 (D)	0.0079	<0.005	0.0113	0.0128	<0.005	<0.005		
6/23/2016									<0.005	
6/27/2016										0.0201
8/2/2016	<0.005 (D)	<0.005					<0.005		0.00838	0.0198
8/3/2016			0.00734	<0.005	0.008055 (D)	0.0103		<0.005		
9/19/2016	<0.005	<0.005					<0.005 (D)		0.0122	0.00609
9/20/2016			0.00819	<0.005	0.00911	0.00983		<0.005 (D)		
10/12/2016	<0.005	<0.005					0.001252 (D)		0.009175 (D)	0.00525
10/13/2016			0.00848	<0.005	0.00767	0.0101 (D)		<0.005		
11/15/2016	<0.005	<0.005					<0.005		0.01065 (D)	0.0117
11/16/2016			0.00897	<0.005 (D)	0.0074	0.00951		<0.005		
1/18/2017	<0.005	<0.005 (D)					<0.005		0.00969	<0.005
1/19/2017			0.00798	<0.005	0.00614	0.00866		<0.005		
2/14/2017	<0.005	<0.005 (D)					<0.005		0.0104	0.00716
2/15/2017			0.00821	<0.005	0.006325 (D)	0.00909		<0.005		
2/28/2017	<0.005 (D)	<0.005					<0.005		0.0109	0.00842
3/1/2017			0.00869	<0.005	0.00646	0.00905 (D)		<0.005		
11/13/2017	0.0015 (D)	<0.0002 (D1)					0.0014 (D)		0.005 (D)	0.0042 (D)
11/14/2017			0.0072 (D)	0.0036 (D)	0.0026 (D)	0.0067 (D)		0.00185 (D)		
2/14/2018	<0.01	<0.01					0.003		0.0112 (D)	0.0055
2/15/2018			0.012	0.005	0.0072	0.0097		0.0033		
9/25/2018	0.0015 (D)	0.0006					0.002		0.0086	0.0027
9/26/2018			0.0098	0.00375 (D)	0.0062	0.0089		0.003		
5/14/2019	0.0018	0.00068 (D)					0.002 (D)		0.0069 (D)	0.0014 (D)
5/15/2019			0.0086 (D)	0.0031 (D)	0.0054 (D)	0.0081 (D)		0.0025 (D)		
9/24/2019	0.00165 (D)	0.00067 (D)				0.0041 (D)	0.0021 (D)		0.0066 (D)	0.002 (D)
9/25/2019			0.0086 (D)	0.0031 (D)	0.0038 (D)			0.0028 (D)		

Within Limits

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=7.157, Std. Dev.=0.236, n=60. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.962, critical = 0.945. Kappa = 2.146 (c=23, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002288. Individual comparison alpha = 0.000229. Comparing 5 points to limit.

Constituent: pH Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

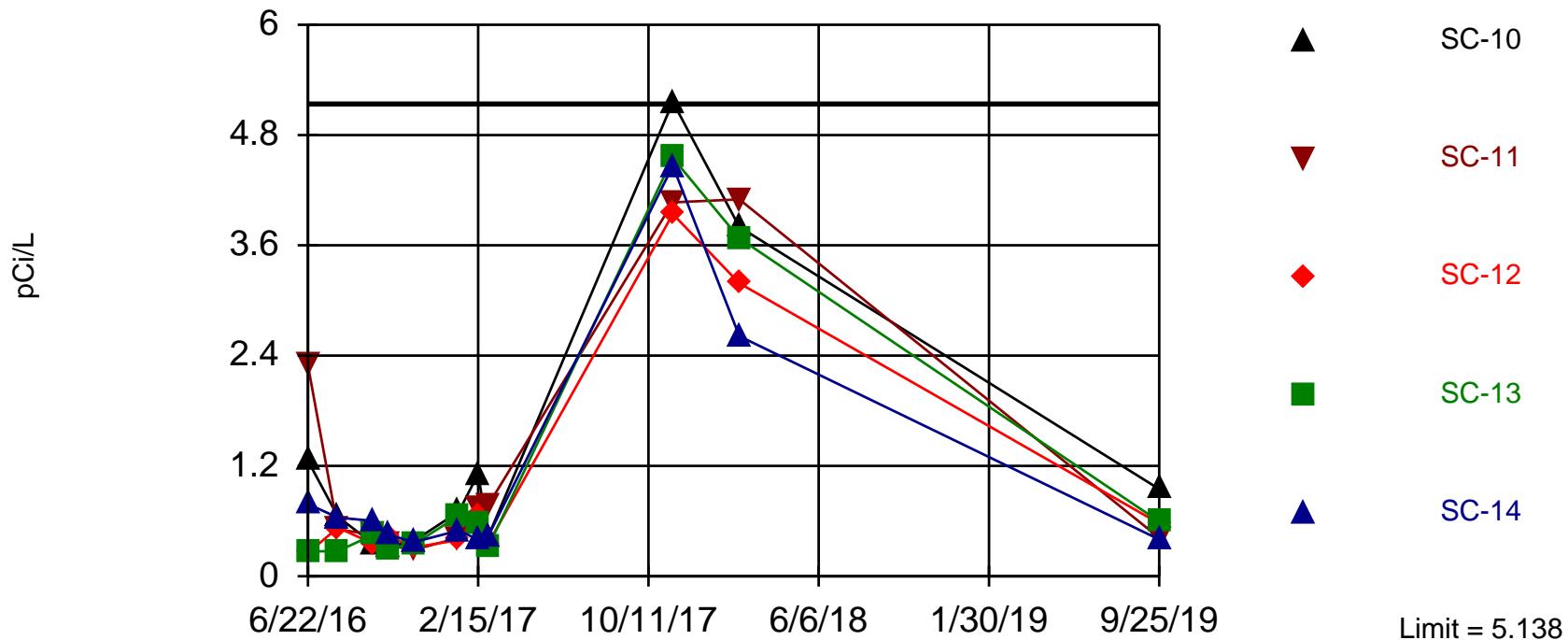
Constituent: pH (SU) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-3A	CC-1	FC-2	FC-3B	SC-10	SC-13	SC-12	SC-14	SC-11
8/2/2016	7 (D)	7.5	6.8	7.2	7.2					
8/3/2016						7.1 (D)	7.2	7.1	7.2	7
9/19/2016	7.1	7.5	6.7	7.2	6.9					
9/20/2016						7.1	7.3	7.3	7.2	7.2
10/12/2016	7.1	7.5	6.9	7.2	7					
10/13/2016						7.4	7.3	7.3	7.3	7.3
11/15/2016	7.1	7.6	6.9	7.3	7					
11/16/2016						7.3	7.3	7.4	7.2	7.3
1/18/2017	7.1	7.6	6.9	7.3	7					
1/19/2017						7.4	7.3	7.4	7.3	7.3
2/14/2017	7.1	7.6	6.9	7.3	7					
2/15/2017						7.4	7.3	7.4		7.3
2/28/2017	7.2	7.5	6.9	7.3	7					
3/1/2017						7.4	7.4	7.4	7.3	7.3
11/13/2017	7.2	7.6	7	7.3	7					
11/14/2017						7.4	7.3	7.4	7.3	7.3
2/14/2018	7.1	7.6	6.9	7.3	6.8					
2/15/2018						7.3	7.4		7.3	7.3
9/25/2018	7	7.3	6.8	7.3	7.1					
9/26/2018						7.3	7.3	7.3	7.2	7.3
5/14/2019	7.1	7.5	6.8	7.2	7.2					
5/15/2019						7.2	7	7.3	7.1	7.2
9/24/2019	7.1	7.4	7	7.3	7.1					
9/25/2019						7.3	7.3		7.3	7.3

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=1.081, Std. Dev.=0.2992, n=55. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9464, critical = 0.94. Kappa = 2.156 (c=23, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002288. Individual comparison alpha = 0.000458. Comparing 5 points to limit.

Constituent: Rad 226+228 Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Rad 226+228 (pCi/L) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

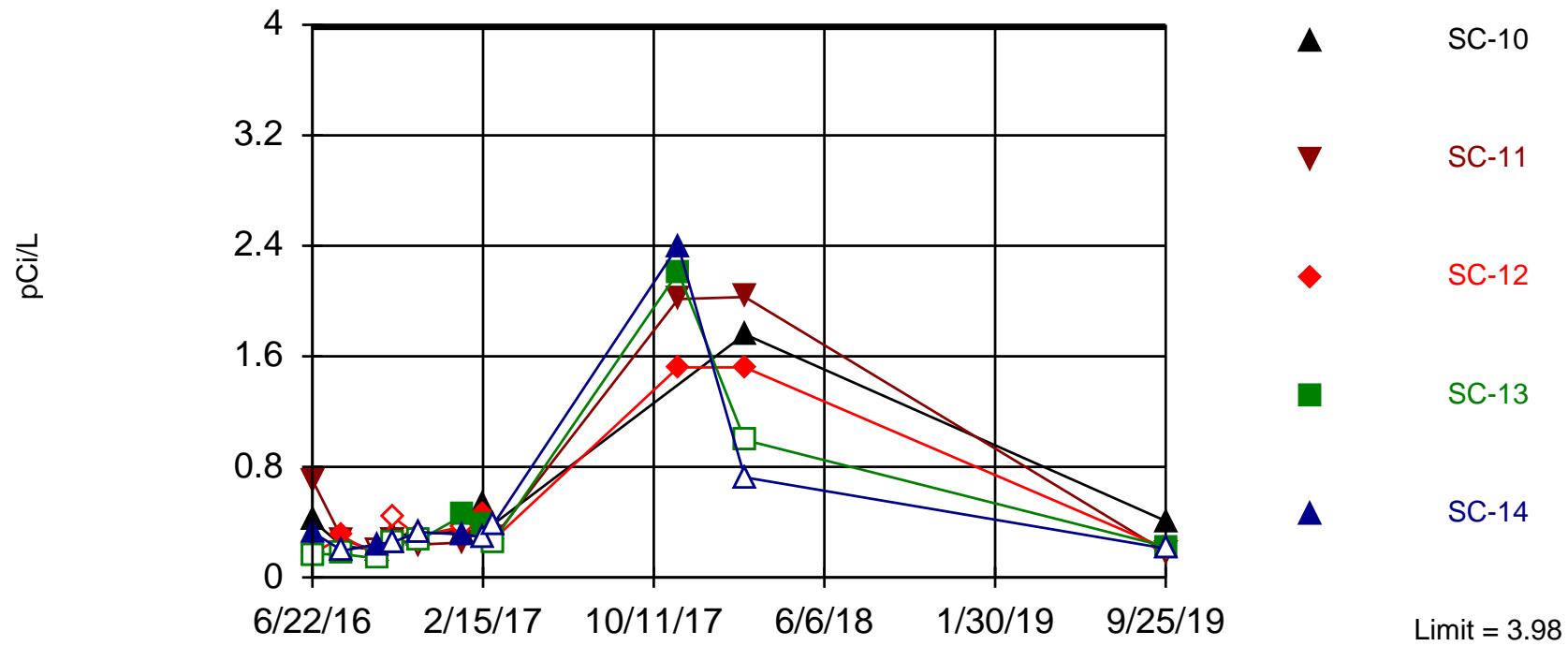
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-13	SC-12	SC-11	SC-10	CC-1	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	1.475	0.2705	0.253	2.295	1.257	1.317 (D)	0.3375	0.786		
6/23/2016									1.321	
6/27/2016										1.111
8/2/2016	1.38					0.412	0.295		0.3135	1.7775
8/3/2016		0.2735	0.528	0.508	0.646			0.6375		
9/19/2016	2.136		0.3585	0.4555	0.361		0.363		0.3795	0.496
9/20/2016		0.448				0.6405			0.603	
10/12/2016	1.913					1.404	0.3475		0.616	0.4955
10/13/2016		0.305	0.437	0.3365	0.324			0.4535		
11/15/2016	2.128					1.354	0.854		0.395	0.6865
11/16/2016		0.341	0.3135	0.286	0.3775			0.3695		
1/18/2017	1.874					1.494 (D)	0.471		0.617	0.6095
1/19/2017		0.661	0.393	0.4185	0.704			0.497		
2/14/2017	2.31 (D)					1.841	0.7225		2.636	1.366
2/15/2017		0.581	0.6565	0.751	1.114			0.3975		
2/28/2017	1.628					1.59325 (D)	0.446		1.8245	0.414
3/1/2017		0.318	0.355	0.7725	0.432			0.4345		
11/13/2017	6.445					5.16	4.255		3.575	2.225
11/14/2017		4.55	3.94	4.0675 (D)	5.16			4.465		
2/14/2018	5.23					3.22	2.1715		2.23025 (D)	2.79
2/15/2018		3.677	3.1875 (D)	4.1	3.8			2.612		
9/24/2019	1.628					1.444	0.4605		0.548	0.69
9/25/2019		0.596 (D)	0.5735	0.418	0.949			0.4		

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 56 background values. 53.57% NDs. Annual per-constituent alpha = 0.006093. Individual comparison alpha = 0.0006109 (1 of 2). Comparing 5 points to limit.

Constituent: Radium 226, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

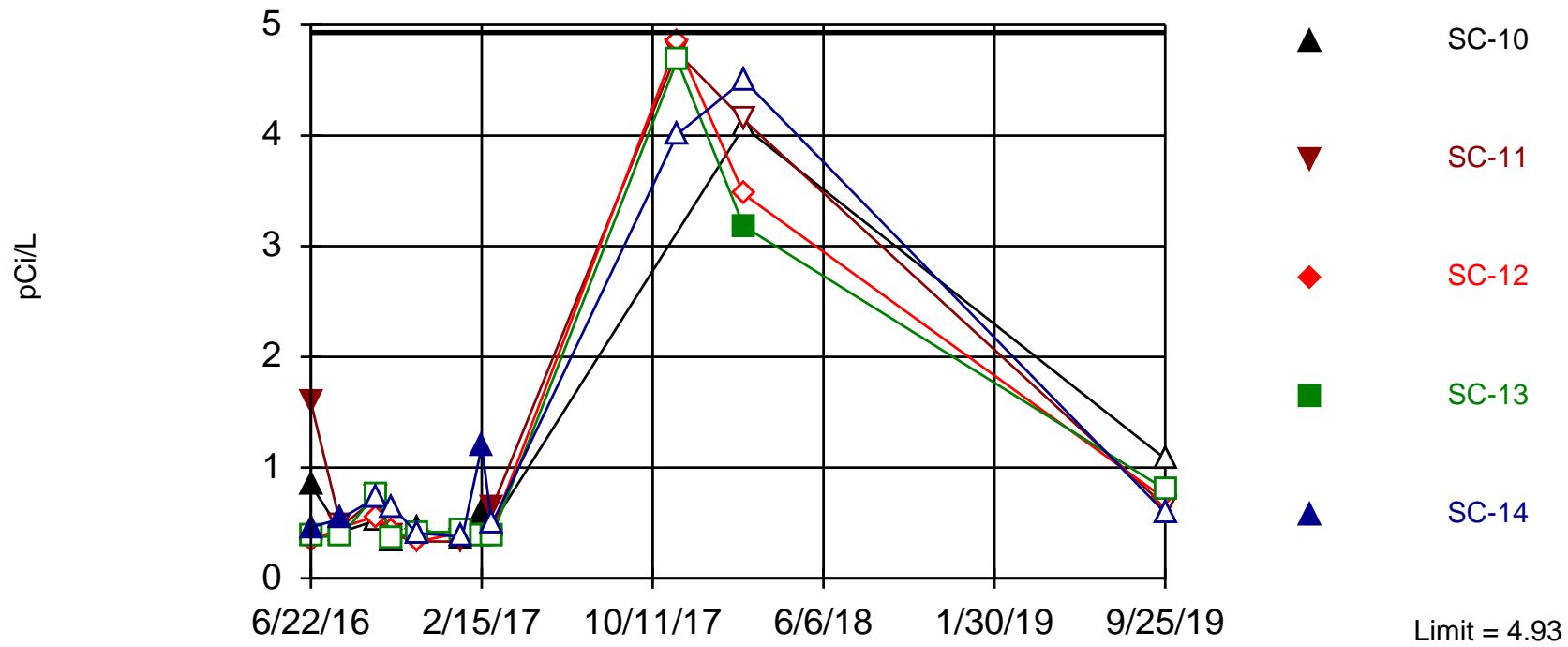
Constituent: Radium 226, Total (pCi/L) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-10	SC-11	FC-2	SC-13	SC-14	SC-12	FC-3A	FC-3B
6/22/2016	0.295 (J)	0.413 (JD)	0.412 (J)	0.705 (J)	<0.184	<0.167	0.327 (J)	<0.169		
6/23/2016									0.368 (J)	0.486 (J)
6/27/2016										<0.235
8/2/2016	0.69 (D)	0.333 (D)			<0.199				<0.26	<0.235
8/3/2016			0.227 (J)	0.274 (J)		<0.169	<0.193	0.298 (J)		
9/19/2016	0.416 (J)	<0.155		<0.201	<0.19	<0.227			<0.211	<0.484
9/20/2016						<0.137	0.241 (J)	<0.159		
10/12/2016	0.433 (J)	<0.288		<0.307	<0.279	<0.325			<0.368	0.283 (J)
10/13/2016						<0.243	<0.256	<0.435		
11/15/2016	0.588 (J)	<0.38		<0.312	<0.238	<0.32			<0.419	<0.397
11/16/2016						<0.265	<0.329	<0.3		
1/18/2017	0.494 (J)	0.569 (JD)		0.333 (J)	0.253 (J)	<0.256	0.451 (J)	0.31 (J)	<0.244	0.357 (J)
1/19/2017						<0.425			<0.38	
2/14/2017	0.725 (JD)	0.631 (J)		0.529 (J)	0.369 (J)		0.388 (J)	<0.291	0.459 (J)	
2/15/2017						<0.42			<0.307	<0.389
2/28/2017	0.348 (J)	<0.343 (D)		<0.384	<0.281		<0.258	<0.379	<0.271	
3/1/2017										
11/13/2017	3.98	2.9			2.41				1.87	<0.57
11/14/2017				2.015 (D)		2.21	2.4	1.52		
2/14/2018	3 (J)	1.48 (J)		1.76	2.03 (J)	<0.743	<0.994	<0.724	1.52 (J)	<0.772 (D)
2/15/2018										<1.23
5/14/2019									<0.1 (D)	<0.088
9/24/2019	0.5655 (JD)	0.364		0.409 (J)	<0.185	<0.182			0.213 (J)	0.209 (J)
9/25/2019							0.223 (JD)	<0.209		0.359 (J)

Within Limit

Prediction Limit

Interwell Non-parametric



Prediction Limit

Constituent: Radium 228, Total (pCi/L) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

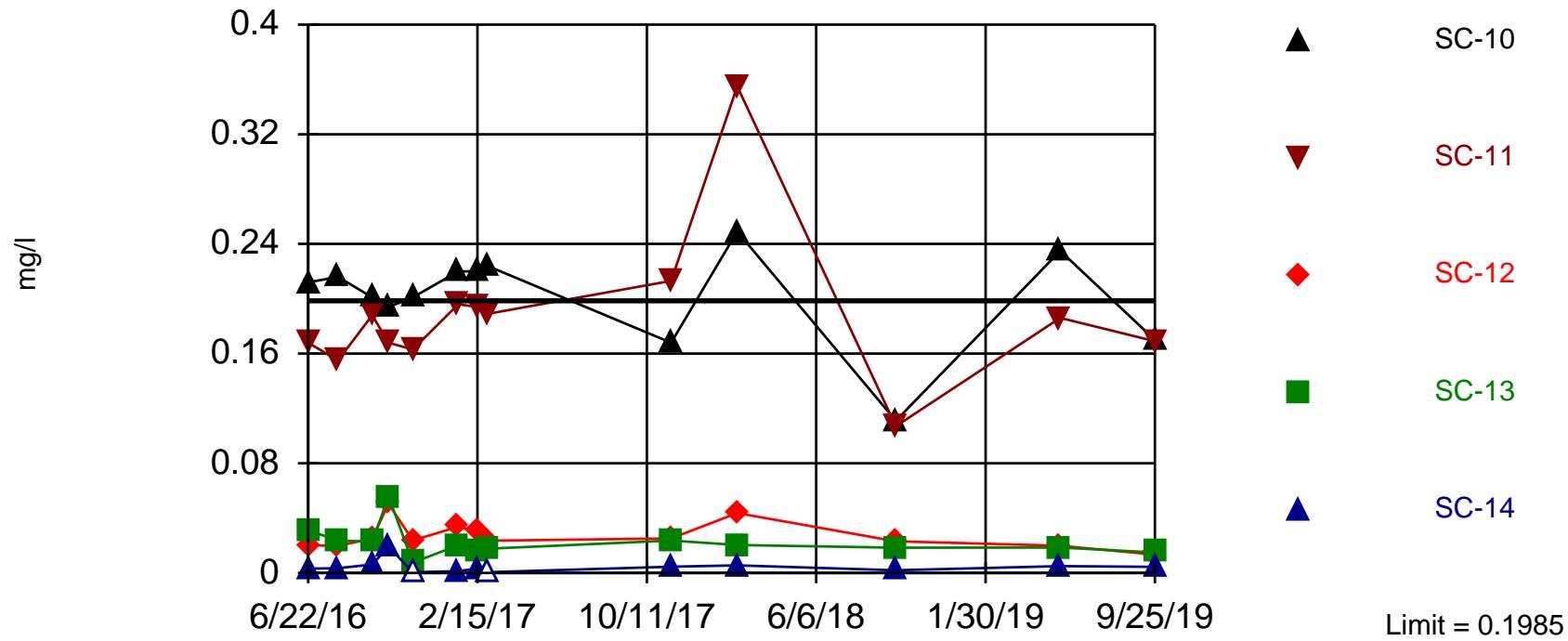
	FC-1	SC-10	CC-1	SC-11	SC-12	SC-13	SC-14	FC-2	FC-3A	FC-3B
6/22/2016	1.18	0.845 (J)	0.904 (JD)	1.59	<0.337	<0.374	0.459 (J)	<0.491		
6/23/2016									0.953 (J)	
6/27/2016										0.625 (J)
8/2/2016			0.7735 (D)					<0.391	<0.367	1.66
8/3/2016		0.419 (J)		<0.468	<0.46	<0.378	0.541 (J)			
9/19/2016	1.72		0.563 (J)					<0.499	<0.548	<0.508
9/20/2016		<0.52		<0.721	<0.558	<0.759	<0.724			
10/12/2016	1.48		1.26					<0.37	0.432 (J)	<0.425
10/13/2016		<0.341		<0.394	<0.439	<0.367	<0.651			
11/15/2016	1.54		1.2		<0.334	<0.327	<0.417		0.694 (J)	<0.371
11/16/2016		<0.443					<0.41			0.488 (J)
1/18/2017	1.38		0.925 (D)		<0.331	<0.418	<0.42		0.343 (J)	0.495 (J)
1/19/2017		0.371 (J)					<0.374			<0.505
2/14/2017	1.585 (D)		1.21					0.51 (J)	0.593 (J)	0.748 (J)
2/15/2017		0.585 (J)		0.382 (J)	<0.395	<0.386	1.19			
2/28/2017	1.28		1.435 (D)					<0.472	0.582 (J)	<0.439
3/1/2017		<0.48		0.632 (J)	<0.439	<0.378	<0.49			
11/13/2017	<4.93		<4.52					<3.69	<3.41	<3.88
11/14/2017				<4.75 (D)	<4.84	<4.68	<4.01			
2/14/2018	<4.46		<3.48					<3.6	<4.5 (D)	<4.35
2/15/2018		<4.08		<4.14	<3.47	3.18 (J)	<4.5			
5/14/2019									<0.656 (D)	<0.512
9/24/2019	1.0205 (D)		1.08		<0.721			<0.739	<0.678	<0.662
9/25/2019		<1.08		<0.651		<0.804 (D)	<0.591			

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 65 background values. 1.538% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Selenium, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

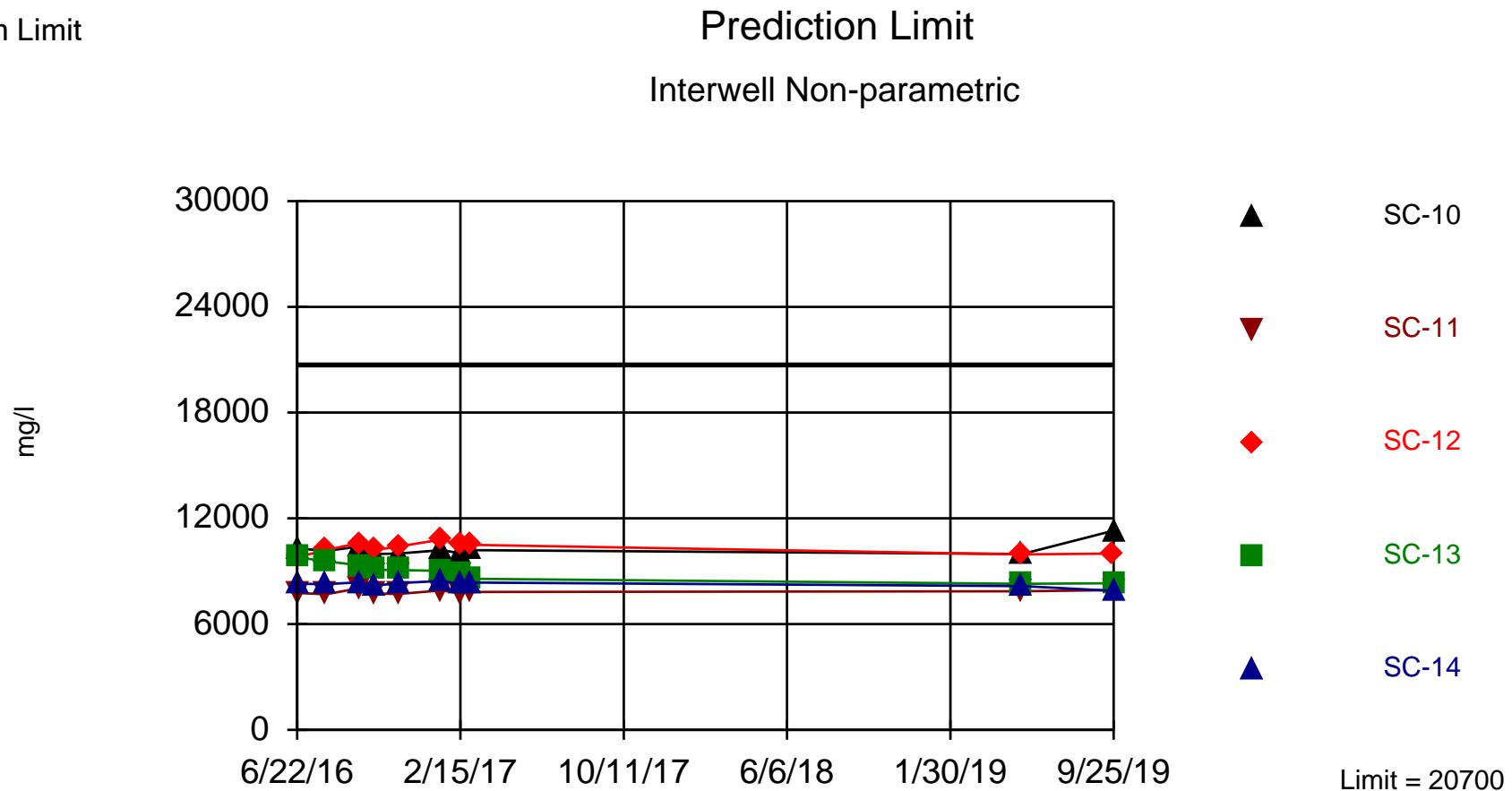
Prediction Limit

Constituent: Selenium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	0.016	0.1985 (D)	0.0031	0.0311	0.212	0.0203	0.0471	0.168		
6/23/2016									0.0393	
6/27/2016										0.0057
8/2/2016	0.0098 (D)	0.186		0.0035	0.0236	0.216 (D)	0.0197	0.0412	0.0382	0.0069
8/3/2016								0.155		
9/19/2016	0.028 (D)	0.157 (D)		0.0062 (D)	0.0228 (D)	0.201 (D)	0.0252 (D)	0.04895 (D)	0.0364 (D)	0.0112 (D)
9/20/2016								0.188 (D)		
10/12/2016	0.0167 (D)	0.138 (D)		0.0192 (D)	0.0558 (D)	0.194 (D)	0.05055 (D)	<0.001 (D1)	0.04245 (D)	0.0115 (D)
10/13/2016								0.168 (D)		
11/15/2016	0.0136	0.145 (D)		<0.001 (D1P)	0.00765 (D)	0.201 (DP1)	0.0237 (DP1)	0.0356 (D)	0.0355 (D)	0.0106 (D)
11/16/2016								0.163 (DP1)		
1/18/2017	0.0254 (D)	0.1385 (D)		0.0013 (D)	0.0202 (D)	0.22 (D)	0.0337 (D)	0.0452 (D)	0.039 (D)	0.0067 (D)
1/19/2017								0.196 (D)		
2/14/2017	0.0141 (DT)	0.1415 (D)		0.0033 (D)	0.0164 (D)	0.22 (D)	0.03 (D)	0.0388 (DT)	0.0352 (DT)	0.0092 (D)
2/15/2017								0.194 (D)		
2/28/2017	0.00375 (D)	0.143 (D)		<0.001 (D1)	0.0177 (D)	0.224 (D)	0.02355 (D)	0.0367 (D)	0.0263 (D)	0.0011 (D)
3/1/2017								0.189 (D)		
11/13/2017	0.015 (D)	0.135 (D)		0.0046 (D)	0.0236 (D)	0.168 (D)	0.0252 (D)	0.0381 (D)	0.0552 (D)	0.0107 (D)
11/14/2017								0.213 (D)		
2/14/2018	0.0068	0.169		0.0055	0.0204	0.249	0.0437	0.044	0.0543 (D)	0.0036
2/15/2018								0.355		
9/25/2018	0.02165 (D)	0.17		0.002	0.01845 (D)	0.111 (D)	0.0231	0.0371	0.0512	0.0142
9/26/2018								0.107 (D)		
5/14/2019	0.0178 (D)	0.188 (D)		0.005 (D)	0.0185 (D)	0.235 (D)	0.0198 (D)	0.0402 (D)	0.04725 (D)	0.005 (D)
5/15/2019								0.186 (D)		
9/24/2019	0.01665 (D)	0.19 (D)		0.0045 (D)	0.015 (D)	0.17 (D)		0.0399 (D)	0.0115 (D)	
9/25/2019								0.169 (D)		

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 50 background values. Annual per-constituent alpha = 0.007403. Individual comparison alpha = 0.0007428 (1 of 2). Comparing 5 points to limit.

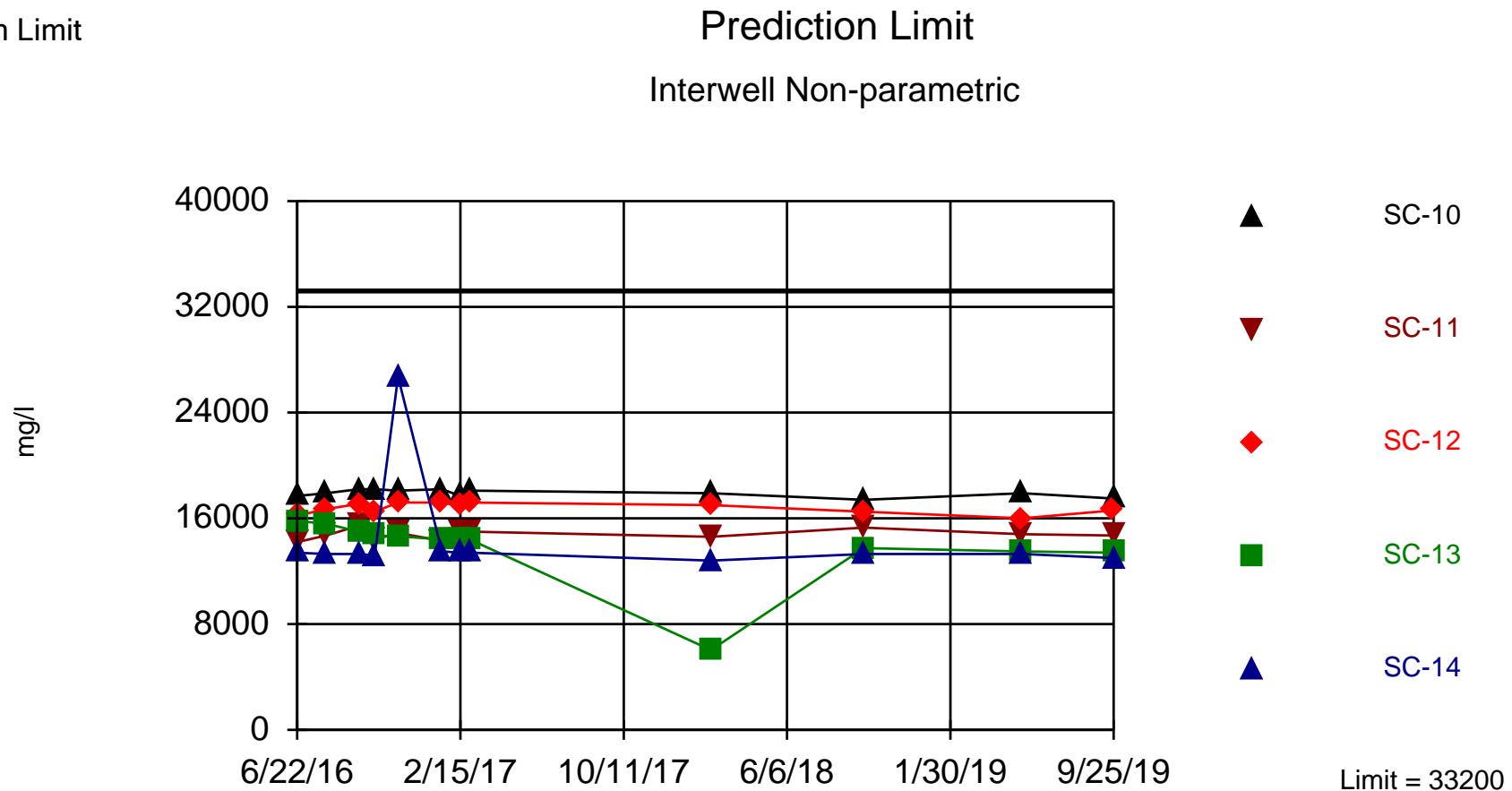
Constituent: Sulfate Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

Constituent: Sulfate (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	SC-13	SC-12	SC-11	SC-10	CC-1	FC-2	SC-14	FC-3A	FC-3B
6/22/2016	13200 (D)	9790 (D)	9800 (D)	7770 (D)	10300 (D)	17200 (D)	7080 (D)	8290 (D)		
6/23/2016									5870 (D)	
6/27/2016										4820 (D)
8/2/2016	13000 (D)					17200 (D)	7000 (D)		5650 (D)	5240 (D)
8/3/2016		9560 (D)	10200 (D)	7690 (D)	10150 (D)			8270 (D)		
9/19/2016	13000 (D)					17300 (D)	7030 (D)		5800 (D)	5380 (D)
9/20/2016		9340 (D)	10600 (D)	8035 (D)	10400 (D)			8370 (D)		
10/12/2016	12800 (D)					16600 (D)	6910 (D)		5635 (D)	4940 (D)
10/13/2016		9080 (D)	10200 (D)	7730 (D)	9980 (D)			8180 (D)		
11/15/2016	13600 (D)					17400 (D)	6910		5735 (D)	5370 (D)
11/16/2016		9070 (D)	10400 (D)	7710 (D)	10000 (D)			8330 (D)		
1/18/2017	13700 (D)					17550 (D)	7040 (D)		5880 (D)	4590 (D)
1/19/2017		9020 (D)	10800 (D)	7910 (D)	10200 (D)			8450 (D)		
2/14/2017	13200 (D)					16800 (D)	6840 (D)		5720 (D)	4470 (D)
2/15/2017		8840 (D)	10500 (D)	7730 (D)	10020 (D)			8270 (D)		
2/28/2017	13100 (D)					17400 (D)	6940 (D)		5820 (D)	4640 (D)
3/1/2017		8570 (D)	10500 (D)	7820 (D)	10200 (D)			8360 (D)		
5/14/2019	13200 (D)					18300 (D)	6660 (D)		5725 (D)	4250 (D)
5/15/2019		8290 (D)	9955 (D)	7860 (D)	9980 (D)			8160 (D)		
9/24/2019	13250 (D)			10000 (D)			20700 (D)	7130 (D)		5770 (D)
9/25/2019			8315 (D)		7930 (D)	11300 (D)			7890 (D)	4440 (D)

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit.

Constituent: TDS Analysis Run 1/13/2020 11:00 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Prediction Limit

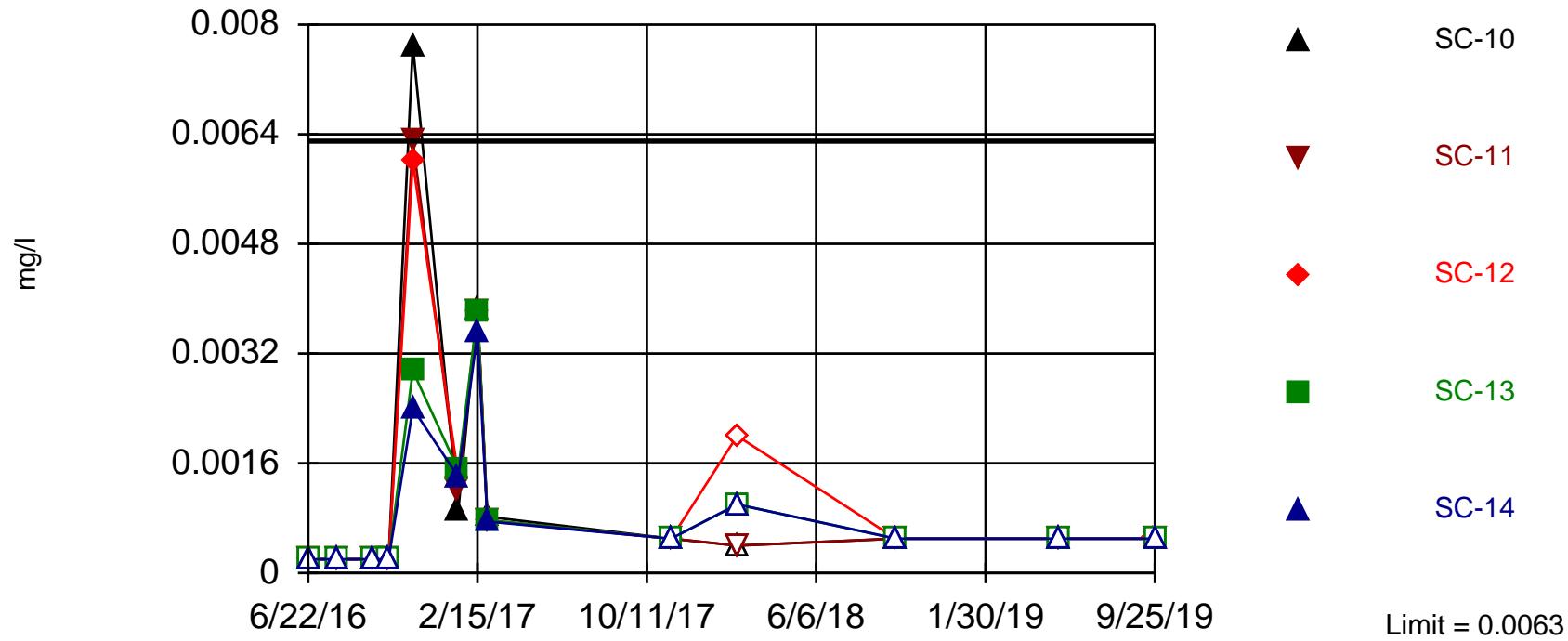
Constituent: TDS (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill
 Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	FC-2	SC-14	SC-11	SC-12	SC-10	SC-13	CC-1	FC-3A	FC-3B
6/22/2016	22300	11200	13400	14200	16200	17700	15800	30950 (D)		
6/23/2016									9460	
6/27/2016										7770
8/2/2016	22000 (D)	10900						2.1	9140	9200
8/3/2016			13300	14700	16700	17900 (D)	15600			
9/19/2016	21900	11250 (D)						30500	9320	9410
9/20/2016			13300	15450 (D)	17100	18200	15000			
10/12/2016	23200	11600						31400	9470 (D)	9450
10/13/2016			13200	14400	16500 (D)	18200	14700			
11/15/2016	22100	11300						30600	9320 (D)	9630
11/16/2016			26700	14900	17200	18100	14650 (D)			
1/18/2017	22200	11200						31200 (D)	9180	9250
1/19/2017			13500	14300	17200	18200	14400			
2/14/2017	22100	11200						30450 (D)	9310	9350
2/15/2017			13400	15000	17000	17700 (D)	14400			
2/28/2017	22100 (D)	11300						30800	9490	9410
3/1/2017			13400	15000	17200 (D)	18100	14400			
2/14/2018	22300	11000						32500	9400 (D)	9040
2/15/2018			12800	14600	17000	17900	6040			
9/25/2018	21800 (D)	10900						31400	9700	8970
9/26/2018			13300	15300	16500	17400	13750 (D)			
5/14/2019	22300	10800						32700	9280 (D)	7890
5/15/2019			13300	14800	16000 (D)	17900	13500			
9/24/2019	22200 (D)	10600			16600			33200	9220	7860
9/25/2019			13000	14700		17500	13400 (D)			

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 65 background values. 66.15% NDs. Annual per-constituent alpha = 0.004547. Individual comparison alpha = 0.0004556 (1 of 2). Comparing 5 points to limit.

Constituent: Thallium, Total Analysis Run 1/13/2020 11:00 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

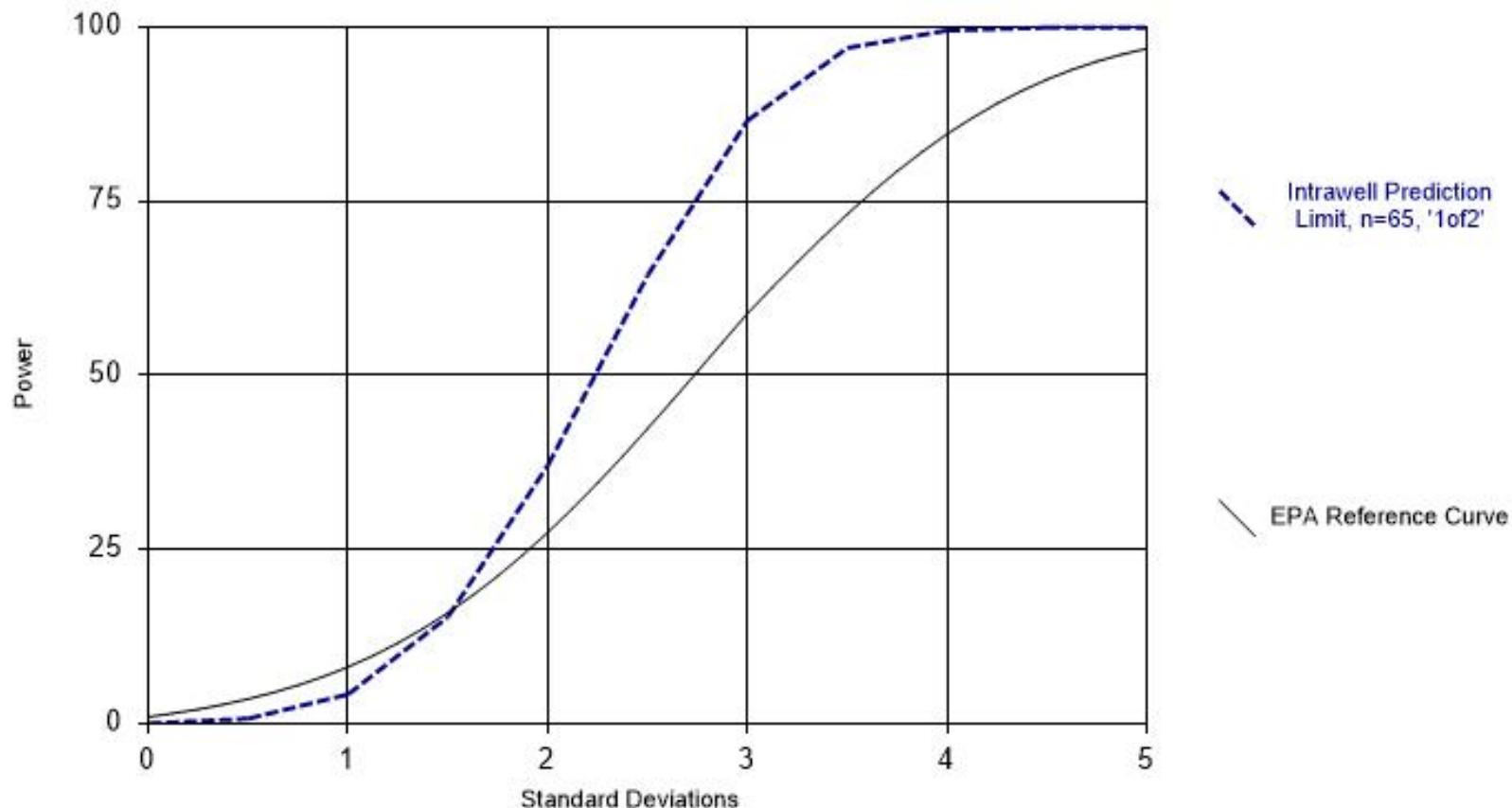
Prediction Limit

Constituent: Thallium, Total (mg/l) Analysis Run 1/13/2020 11:03 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

	FC-1	CC-1	SC-14	SC-13	SC-10	SC-12	FC-2	SC-11	FC-3A	FC-3B
6/22/2016	0.0002	0.000455 (D)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
6/23/2016								<0.0002		<0.0002
6/27/2016										<0.0002
8/2/2016	<0.0002 (D)	0.00045					<0.0002		<0.0002	<0.0002
8/3/2016			<0.0002	<0.0002	<0.0002 (D)	<0.0002		<0.0002		<0.0002
9/19/2016	0.00027 (D)	<0.0002 (D1)					0.000545 (D)		<0.0002 (D1)	<0.0002 (D1)
9/20/2016			<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)		<0.0002 (D)		
10/12/2016	<0.0002 (D1)	<0.0002 (D1)					<0.0002 (D1)		<0.0002 (D)	<0.0002 (D1)
10/13/2016			<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)	<0.0002 (D1)		<0.0002 (D1)		
11/15/2016	0.0061 (D)	0.0063 (D)					<0.0002 (D1)		0.0057 (D)	0.0056 (D)
11/16/2016			0.0024 (D)	0.00295 (D)	0.0077 (D)	0.006 (D)		0.0063 (D)		
1/18/2017	<0.0005 (D1)	0.0014 (D)					<0.0005 (D1)		0.00069 (D)	0.00098 (D)
1/19/2017			0.0014 (D)	0.0015 (D)	0.00091 (D)	0.0014 (D)		0.0012 (D)		
2/14/2017	0.0037 (D)	0.00385 (D)					0.0036 (D)		0.0034 (D)	0.0062 (D)
2/15/2017			0.0035 (D)	0.0038 (D)	0.00385 (D)	0.0038 (D)		0.0038 (D)		
2/28/2017	0.0011 (D)	0.0014 (D)					0.0011 (D)		0.0011 (D)	0.00091 (D)
3/1/2017			0.00075 (D)	0.00077 (D)	0.00082 (D)	0.00076 (D)		0.00077 (D)		
11/13/2017	<0.0005 (D1)	<0.0005 (D1)					<0.0005 (D1)		<0.0005 (D1)	<0.0005 (D1)
11/14/2017			<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)	<0.0005 (D1)		<0.0005 (D1)		
2/14/2018	<0.002	<0.002					<0.001		<0.001 (D)	<0.001
2/15/2018			<0.001	<0.001	<0.0004	<0.002		<0.0004		
9/25/2018	<0.0005 (D)	<0.0005					<0.0005		<0.0005	<0.0005
9/26/2018			<0.0005	<0.0005 (D)	<0.0005 (D1)	<0.0005		<0.0005 (D1)		
5/14/2019	<0.0005	<0.0005 (D1D)					<0.0005 (D1D)		<0.0005 (D1D)	<0.0005 (D1D)
5/15/2019			<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)		<0.0005 (D1D)		
9/24/2019	<0.0005 (D1D)	<0.0005 (D1D)					<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)	<0.0005 (D1D)
9/25/2019			<0.0005	<0.0005 (D1D)	<0.0005 (D1D)			<0.0005 (D1D)		

Power Curve



Kappa = 2.134, based on 5 compliance wells and 23 constituents, evaluated semi-annually (this report reflects annual total).

Analysis Run 1/13/2020 11:12 AM View: CCR Landfill

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database

Tolerance Limit

Clear Spring Ranch Client: CSU Data: Ash Landfill SHDF Master Database Printed 1/13/2020, 11:35 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony, Total (mg/l)	n/a	0.008	n/a	n/a	n/a	65	81.54	n/a	0.03565	NP Inter(NDs)
Arsenic, Total (mg/l)	n/a	0.01171	n/a	n/a	n/a	64	14.06	sqrt(x)	0.05	Inter
Barium, Total (mg/l)	n/a	2.833	n/a	n/a	n/a	65	6.154	n/a	0.03565	NP Inter(normal...)
Beryllium, Total (mg/l)	n/a	0.0002	n/a	n/a	n/a	65	100	n/a	0.03565	NP Inter(NDs)
Cadmium, Total (mg/l)	n/a	0.005	n/a	n/a	n/a	65	95.38	n/a	0.03565	NP Inter(NDs)
Chloride (mg/l)	n/a	1680	n/a	n/a	n/a	60	0	n/a	0.04607	NP Inter(normal...)
Chromium, Total (mg/l)	n/a	0.01	n/a	n/a	n/a	65	69.23	n/a	0.03565	NP Inter(NDs)
Cobalt, Total (mg/l)	n/a	0.0139	n/a	n/a	n/a	63	84.13	n/a	0.0395	NP Inter(NDs)
Fluoride, Total (mg/l)	n/a	0.985	n/a	n/a	n/a	65	0	n/a	0.03565	NP Inter(normal...)
Lead, Total (mg/l)	n/a	0.009	n/a	n/a	n/a	65	46.15	n/a	0.03565	NP Inter(normal...)
Lithium, Total (mg/l)	n/a	1.16	n/a	n/a	n/a	65	0	n/a	0.03565	NP Inter(normal...)
Mercury, Total (mg/l)	n/a	0.000024	n/a	n/a	n/a	64	0	n/a	0.03752	NP Inter(normal...)
Molybdenum, Total (mg/l)	n/a	0.0201	n/a	n/a	n/a	65	43.08	n/a	0.03565	NP Inter(normal...)
Rad 226+228 (pCi/L)	n/a	4.825	n/a	n/a	n/a	55	0	$x^{(1/3)}$	0.05	Inter
Radium 226, Total (pCi/L)	n/a	3.98	n/a	n/a	n/a	56	53.57	n/a	0.05656	NP Inter(NDs)
Radium 228, Total (pCi/L)	n/a	4.93	n/a	n/a	n/a	56	48.21	n/a	0.05656	NP Inter(normal...)
Selenium, Total (mg/l)	n/a	0.1985	n/a	n/a	n/a	65	1.538	n/a	0.03565	NP Inter(normal...)
Thallium, Total (mg/l)	n/a	0.0063	n/a	n/a	n/a	65	66.15	n/a	0.03565	NP Inter(NDs)

APPENDIX C

Analytical Results of Groundwater Samples

CCR LANDFILL
Analytical Results of Groundwater Samples (2019)
Constituents - Antimony to Fluoride

Monitoring Well ID	Well Purpose	Sample Date & Purpose	Antimony ^T (mg/L)	Arsenic ^T (mg/L)	Barium ^T (mg/L)	Beryllium ^T (mg/l)	Boron ^T (mg/l)	Cadmium ^T (mg/l)	Calcium ^T (mg/l)	Chloride ^T (mg/l)	Chromium ^T (mg/l)	Cobalt ^T (mg/l)	Fluoride ^T (mg/l)
CC-1	Upgradient	05/14/2019 DM AM	<0.0005	0.0072	0.0044	<0.0002	1.07	<0.0005	340	1540	0.0018	<0.005	0.2
		09/24/2019 DM AM	<0.0005	0.0081	0.0041	<0.0002	1.05	<0.0005	400	1580	0.0036	<0.005	0.53
FC-1	Upgradient	05/14/2019 DM AM	<0.0005	0.0029	0.0073	<0.0002	1.02	<0.0005	337	782	0.0013	<0.005	0.13
		09/24/2019 DM AM	<0.0005	0.00295	0.0073	<0.0002	0.969	<0.0005	368.5	811	0.0042	<0.005	0.195
FC-2	Upgradient	05/14/2019 DM AM	<0.0005	0.0013	0.0043	<0.0002	0.926	<0.0005	344	113	<0.001	<0.005	0.51
		09/24/2019 DM AM	<0.0005	<0.001	0.0056	<0.0002	0.948	<0.0005	374	116	0.0035	<0.005	0.72
FC-3A	Upgradient	05/14/2019 DM AM	<0.0005	0.0017	0.0265	<0.0002	1.04	<0.0005	353.5	124	0.0031	<0.005	0.44
		09/24/2019 DM AM	<0.0005	0.0016	0.0276	<0.0002	1.07	<0.0005	379	127	0.0054	<0.005	0.59
FC-3B	Upgradient	05/14/2019 DM AM	<0.0005	0.002	0.0146	<0.0002	1.3	<0.0005	196	199	0.0049	<0.005	0.69
		09/24/2019 DM AM	<0.0005	0.0044	0.0268	<0.0002	1.42	<0.0005	201	220	0.0089	<0.005	0.72
SC-10	Downgradient	05/15/2019 DM AM	<0.0005	0.0057	0.0168	<0.0002	1.16	<0.0005	352	839	0.0031	<0.005	0.54
		09/25/2019 DM AM	<0.0005	0.0051	0.0124	<0.0002	1.2	<0.0005	390	943	0.0049	<0.005	0.85
SC-11	Downgradient	05/15/2019 DM AM	<0.0005	0.0051	0.0086	<0.0002	1.96	<0.0005	372	1070	0.0022	<0.005	0.53
		09/25/2019 DM AM	<0.0005	0.005	0.0099	<0.0002	2.14	<0.0005	402	1090	0.0048	<0.005	0.81
SC-12	Downgradient	05/15/2019 DM AM	<0.0005	0.00135	0.00755	<0.0002	3.83	<0.0005	328.5	292	0.00185	<0.005	0.8
		09/25/2019 DM AM	<0.0005	<0.001	0.007	<0.0002	3.94	<0.0005	352	316	0.0043	<0.005	1.37
SC-13	Downgradient	05/15/2019 DM AM	<0.0005	0.001	0.0046	<0.0002	1.48	<0.0005	341	172	0.0011	<0.005	0.77
		09/25/2019 DM AM	<0.0005	0.0011	0.0168	<0.0002	1.62	<0.0005	370	180	0.0049	<0.005	1.225
SC-14	Cross-Gradient	05/15/2019 DM AM	<0.0005	<0.001	0.005	<0.0002	1.58	<0.0005	334	185	0.0012	<0.005	0.69
		09/25/2019 DM AM	<0.0005	<0.001	0.0049	<0.0002	1.67	<0.0005	359	190	0.0041	<0.005	1.08

< Indicates that the compound was not detected above the stated laboratory reporting limit.

AM Assessment Monitoring.

DM Detection Monitoring.

NA Not Analyzed.

T Total Recoverable Concentration.

D Dissolved Concentration.

Italics Average of duplicate samples collected.

CCR LANDFILL
Analytical Results of Groundwater Samples (2019)
Constituents – Lead to TDS

Monitoring Well ID	Well Purpose	Sample Date & Purpose	Lead ^T (mg/L)	Lithium ^T (mg/L)	Mercury ^T (mg/L)	Molybdenum ^T (mg/l)	pH	Radium 226 (pCi/L)	Radium 228 (pCi/l)	Selenium ^T (mg/l)	Sulfate ^T (mg/l)	Thallium ^T (mg/l)	TDS
CC-1	Upgradient	05/14/2019 DM AM	<0.0005	0.798	0.000006	0.00068	6.8	<0.121 ^D	0.595 ^D	0.188	18300	<0.0005	32700
		09/24/2019 DM AM	0.00072	0.722	0.00005	0.00067	7.0	0.364 ^T	1.08 ^T	0.19	20700	<0.0005	33200
FC-1	Upgradient	05/14/2019 DM AM	<0.0005	1.13	0.000002	0.0018	7.1	0.118 ^D	0.118 ^D	0.0178	13200	<0.0005	22300
		09/24/2019 DM AM	<0.0005	0.9695	0.000002	0.00165	7.1	0.5655 ^T	1.0205 ^T	0.01665	13250	<0.0005	22200
FC-2	Upgradient	05/14/2019 DM AM	<0.0005	0.294	0.000003	0.002	7.2	0.191 ^D	<0.558 ^D	0.0402	6660	<0.0005	10800
		09/24/2019 DM AM	0.0014	0.274	0.000005	0.0021	7.3	<0.182 ^T	<0.739 ^T	0.0376	7130	<0.0005	10600
FC-3A	Upgradient	05/14/2019 DM AM	0.0011	0.3265	0.0000075	0.0069	7.5	<0.1 ^T	<0.656 ^T	0.04725	5725	<0.0005	9280
		09/24/2019 DM AM	0.0018	0.303	0.000008	0.0066	7.4	0.209 ^T	<0.678 ^T	0.0399	5770	<0.0005	9220
FC-3B	Upgradient	05/14/2019 DM AM	0.00073	0.321	0.000003	0.0014	7.2	<0.088 ^T	<0.512 ^T	0.005	4250	<0.0005	7890
		09/24/2019 DM AM	0.0012	0.284	0.000005	0.002	7.1	0.359 ^T	<0.662 ^T	0.0115	4440	<0.0005	7860
SC-10	Downgradient	05/15/2019 DM AM	0.00092	0.729	0.00001	0.0054	7.2	0.261 ^D	1.03 ^D	0.235	9980	<0.0005	17900
		09/25/2019 DM AM	0.00089	0.669	0.00001	0.0038	7.3	0.409 ^T	<1.08 ^T	0.17	11300	<0.0005	17500
SC-11	Downgradient	05/15/2019 DM AM	<0.0005	0.583	0.000009	0.0025	7.2	0.446 ^D	1.39 ^D	0.186	7860	<0.0005	14800
		09/25/2019 DM AM	0.00059	0.538	0.000009	0.0028	7.3	<0.185 ^T	<0.651 ^T	0.169	7930	<0.0005	14700
SC-12	Downgradient	05/15/2019 DM AM	<0.005	0.505	0.000004	0.0081	7.3	0.144 ^D	0.525 ^D	0.0198	9955	<0.0005	16000
		09/25/2019 DM AM	<0.005	0.464	0.000004	0.0041	7.3	0.213 ^T	<0.721 ^T	0.0134	10000	<0.0005	16600
SC-13	Downgradient	05/15/2019 DM AM	<0.005	0.378	0.000002	0.0031	7.0	<0.093 ^D	<0.443 ^D	0.0185	8290	<0.0005	13500
		09/25/2019 DM AM	0.000825	0.3545	0.000004	0.0031	7.3	0.223 ^T	<0.688 ^T	0.015	8315	<0.0005	13400
SC-14	Cross-Gradient	05/15/2019 DM AM	<0.0005	0.363	0.000002	0.0086	7.1	0.232 ^D	0.546 ^D	0.005	8160	<0.0005	13300
		09/25/2019 DM AM	<0.0005	0.33	0.000002	0.0086	7.3	<0.209 ^T	<0.591 ^T	0.0045	7890	<0.0005	13000

< Indicates that the compound was not detected above the stated laboratory reporting limit.

AM Assessment Monitoring.

DM Detection Monitoring.

NA Not Analyzed.

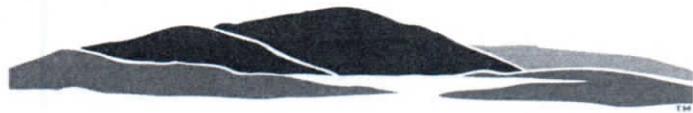
T Total Recoverable Concentration.

D Dissolved Concentration.

Italics Average of duplicate samples collected.

APPENDIX D

Laboratory Analytical Results



Colorado Springs Utilities

It's how we're all connected

LABORATORY SERVICES

719-448-4800

www.csu.org

Report Date: August 19, 2019

This report contains test results for the following samples:

430424	14-May-2019 11:47	Crooked Canyon Well #1
430425	14-May-2019 09:30	Fort Carson Well #1
430426	14-May-2019 10:13	Fort Carson Well #2
430427	14-May-2019 12:50	Fort Carson Well #3A
430428	14-May-2019 12:50	Fort Carson Well #3A
430429	14-May-2019 13:32	Fort Carson Well #3B
430430	14-May-2019 11:08	Equipment Blank
430431	15-May-2019 09:18	Sand Canyon Well #10
430432	15-May-2019 09:58	Sand Canyon Well #11
430433	15-May-2019 11:14	Sand Canyon Well #12
430434	15-May-2019 11:14	Sand Canyon Well #12
430435	15-May-2019 12:22	Sand Canyon Well #13
430436	15-May-2019 13:00	Sand Canyon Well #14
430437	15-May-2019 10:11	Equipment Blank

Colorado Springs Utilities Laboratory Services Section certifies that the test results meet all approved method
And Laboratory's Quality Assurance Plan requirements unless otherwise noted.

Comments: _____

Report Approved By:

Wendy M. Asay - Environmental Specialist

Date

Sample Site: Crooked Canyon Well #1**Site Identity:** CC_1**Sample Number:** 430424**Date/Time Sampled:** 14-MAY-2019 11:47**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	32700	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.20	mg/L	0.10	
EPA_300_0	Chloride	1540	mg/L	0.25	D
	Sulfate	18300	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.006	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1070	ug/L	20.0	
	Calcium (Total Recoverable)	340000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	798	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	7.2	ug/L	1.0	D
	Barium (Total Recoverable)	4.4	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	1.8	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	0.68	ug/L	0.20	D
	Selenium (Total Recoverable)	188	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	<0.121	pCi/L	0.121	
* EPA_904_0	Radium 228	0.595	pCi/L	0.593	J
NA	Depth to Water	13.54	ft.		
+ SM_2510_B	Conductivity	26300	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	12.4	degrees C		
+ SM_4500HB	pH	6.8	SU	2.0	

Sample Site: Fort Carson Well #1
Site Identity: FC_1
Sample Number: 430425
Date/Time Sampled: 14-MAY-2019 09:30
Comp/Grab: GRAB
Sample Comments:

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	22300	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.13	mg/L	0.10	
EPA_300_0	Chloride	782	mg/L	0.25	D
	Sulfate	13200	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1020	ug/L	20.0	
	Calcium (Total Recoverable)	337000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	1130	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	2.9	ug/L	1.0	D
	Barium (Total Recoverable)	7.3	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	1.3	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	1.8	ug/L	0.20	D
	Selenium (Total Recoverable)	17.8	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	0.118	pCi/L	0.098	J
* EPA_904_0	Radium 228	<0.506	pCi/L	0.506	
NA	Depth to Water	14.79	ft.		
+ SM_2510_B	Conductivity	21500	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	13.2	degrees C		
+ SM_4500HB	pH	7.1	SU	2.0	

Sample Site: Fort Carson Well #2**Site Identity:** FC_2**Sample Number:** 430426**Date/Time Sampled:** 14-MAY-2019 10:13**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	10800	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.51	mg/L	0.10	
EPA_300_0	Chloride	113	mg/L	0.25	D
	Sulfate	6660	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.003	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	926	ug/L	20.0	
	Calcium (Total Recoverable)	344000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	294	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	1.3	ug/L	1.0	D
	Barium (Total Recoverable)	4.3	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	<1.0	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	2.0	ug/L	0.20	D
	Selenium (Total Recoverable)	40.2	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	0.191	pCi/L	0.121	J
* EPA_904_0	Radium 228	<0.558	pCi/L	0.558	
NA	Depth to Water	12.71	ft.		
+ SM_2510_B	Conductivity	10000	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	12.4	degrees C		
+ SM_4500HB	pH	7.2	SU	2.0	

Sample Site: Fort Carson Well #3A**Site Identity:** FC_3A**Sample Number:** 430427**Date/Time Sampled:** 14-MAY-2019 12:50**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	9290	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.44	mg/L	0.10	
EPA_300_0	Chloride	124	mg/L	0.25	D
	Sulfate	5730	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.008	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1030	ug/L	20.0	
	Calcium (Total Recoverable)	352000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	321	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	1.8	ug/L	1.0	D
	Barium (Total Recoverable)	26.1	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	3.1	ug/L	1.0	D
	Lead (Total Recoverable)	1.1	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	7.0	ug/L	0.20	D
	Selenium (Total Recoverable)	47.9	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	<0.100	pCi/L	0.100	
* EPA_904_0	Radium 228	<0.656	pCi/L	0.656	
NA	Depth to Water	17.24	ft.		
+ SM_2510_B	Conductivity	9410	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	12.5	degrees C		
+ SM_4500HB	pH	7.5	SU	2.0	

Sample Site: Fort Carson Well #3A
Site Identity: FC_3A
Sample Number: 430428
Date/Time Sampled: 14-MAY-2019 12:50
Comp/Grab: GRAB
Sample Comments: FC_3A duplicate

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	9270	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.44	mg/L	0.10	
EPA_300_0	Chloride	124	mg/L	0.25	D
	Sulfate	5720	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.007	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1050	ug/L	20.0	
	Calcium (Total Recoverable)	355000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	332	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	1.6	ug/L	1.0	D
	Barium (Total Recoverable)	26.9	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	3.1	ug/L	1.0	D
	Lead (Total Recoverable)	1.1	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	6.8	ug/L	0.20	D
	Selenium (Total Recoverable)	46.6	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	<0.094	pCi/L	0.094	
* EPA_904_0	Radium 228	<0.494	pCi/L	0.494	

Sample Site: Fort Carson Well #3B**Site Identity:** FC_3B**Sample Number:** 430429**Date/Time Sampled:** 14-MAY-2019 13:32**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	7890	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.69	mg/L	0.10	
EPA_300_0	Chloride	199	mg/L	0.25	D
	Sulfate	4250	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.003	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1300	ug/L	20.0	
	Calcium (Total Recoverable)	196000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	321	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	2.0	ug/L	1.0	D
	Barium (Total Recoverable)	14.6	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	4.9	ug/L	1.0	D
	Lead (Total Recoverable)	0.73	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	1.4	ug/L	0.20	D
	Selenium (Total Recoverable)	5.0	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	<0.088	pCi/L	0.088	
* EPA_904_0	Radium 228	<0.512	pCi/L	0.512	
NA	Depth to Water	16.43	ft.		
+ SM_2510_B	Conductivity	9480	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	13.0	degrees C		
+ SM_4500HB	pH	7.2	SU	2.0	

Sample Site: Equipment Blank**Site Identity: EQUIP_BLK****Sample Number: 430430****Date/Time Sampled: 14-MAY-2019 11:08****Comp/Grab: GRAB****Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	<10	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	<0.10	mg/L	0.10	
EPA_300_0	Chloride	<0.25	mg/L	0.25	
	Sulfate	<0.25	mg/L	0.25	
EPA_1631	Mercury (Total)	<0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	<20.0	ug/L	20.0	
	Calcium (Total Recoverable)	<100	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	<10.0	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	
	Arsenic (Total Recoverable)	<1.0	ug/L	1.0	
	Barium (Total Recoverable)	<0.20	ug/L	0.20	
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	
	Chromium (Total Recoverable)	<1.0	ug/L	1.0	
	Lead (Total Recoverable)	<0.50	ug/L	0.50	
	Molybdenum (Total Recoverable)	<0.20	ug/L	0.20	
	Selenium (Total Recoverable)	<1.0	ug/L	1.0	
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	

Sample Site: Sand Canyon Well #10**Site Identity:** SC_10**Sample Number:** 430431**Date/Time Sampled:** 15-MAY-2019 09:18**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	17900	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.54	mg/L	0.10	
EPA_300_0	Chloride	839	mg/L	0.25	D
	Sulfate	9980	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.010	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1160	ug/L	20.0	T
	Calcium (Total Recoverable)	352000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	729	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	5.7	ug/L	1.0	D
	Barium (Total Recoverable)	16.8	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	3.1	ug/L	1.0	D
	Lead (Total Recoverable)	0.92	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	5.4	ug/L	0.20	D
	Selenium (Total Recoverable)	235	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	0.261	pCi/L	0.096	J
* EPA_904_0	Radium 228	1.03	pCi/L	0.48	
NA	Depth to Water	11.85	ft.		
+ SM_2510_B	Conductivity	17400	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	14.0	degrees C		
+ SM_4500HB	pH	7.2	SU	2.0	

Sample Site: Sand Canyon Well #11

Site Identity: SC_11

Sample Number: 430432

Date/Time Sampled: 15-MAY-2019 09:58

Comp/Grab: GRAB

Sample Comments:

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	14800	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.53	mg/L	0.10	
EPA_300_0	Chloride	1070	mg/L	0.25	D
	Sulfate	7860	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.009	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1960	ug/L	20.0	T
	Calcium (Total Recoverable)	372000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	583	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	5.1	ug/L	1.0	D
	Barium (Total Recoverable)	8.6	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	2.2	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	2.5	ug/L	0.20	D
	Selenium (Total Recoverable)	186	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	0.446	pCi/L	0.105	J
* EPA_904_0	Radium 228	1.39	pCi/L	0.39	
NA	Depth to Water	8.87	ft.		
+ SM_2510_B	Conductivity	15200	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	13.2	degrees C		
+ SM_4500HB	pH	7.2	SU	2.0	

Sample Site: Sand Canyon Well #12**Site Identity:** SC_12**Sample Number:** 430433**Date/Time Sampled:** 15-MAY-2019 11:14**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	16000	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.80	mg/L	0.10	
EPA_300_0	Chloride	291	mg/L	0.25	D
	Sulfate	10100	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.004	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	3780	ug/L	20.0	T
	Calcium (Total Recoverable)	325000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	496	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	1.3	ug/L	1.0	D
	Barium (Total Recoverable)	7.7	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	1.9	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	8.1	ug/L	0.20	D
	Selenium (Total Recoverable)	19.8	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	0.152	pCi/L	0.103	J/R1
* EPA_904_0	Radium 228	<0.377	pCi/L	0.377	R1
NA	Depth to Water	9.11	ft.		
+ SM_2510_B	Conductivity	15000	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	13.0	degrees C		
+ SM_4500HB	pH	7.3	SU	2.0	

Sample Site: Sand Canyon Well #12**Site Identity:** SC_12**Sample Number:** 430434**Date/Time Sampled:** 15-MAY-2019 11:14**Comp/Grab:** GRAB**Sample Comments:** SC_12 duplicate

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	16000	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.80	mg/L	0.10	
EPA_300_0	Chloride	293	mg/L	0.25	D
	Sulfate	9810	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.004	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	3880	ug/L	20.0	T
	Calcium (Total Recoverable)	332000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	514	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	1.4	ug/L	1.0	D
	Barium (Total Recoverable)	7.4	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	1.8	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	8.1	ug/L	0.20	D
	Selenium (Total Recoverable)	19.8	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	0.136	pCi/L	0.103	J
* EPA_904_0	Radium 228	0.525	pCi/L	0.387	J

Sample Site: Sand Canyon Well #13**Site Identity:** SC_13**Sample Number:** 430435**Date/Time Sampled:** 15-MAY-2019 12:22**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	13500	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.77	mg/L	0.10	
EPA_300_0	Chloride	172	mg/L	0.25	D
	Sulfate	8290	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1480	ug/L	20.0	T
	Calcium (Total Recoverable)	341000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	378	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	1.0	ug/L	1.0	D
	Barium (Total Recoverable)	4.6	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	1.1	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	3.1	ug/L	0.20	D
	Selenium (Total Recoverable)	18.5	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	<0.093	pCi/L	0.093	
* EPA_904_0	Radium 228	<0.443	pCi/L	0.443	
NA	Depth to Water	9.44	ft.		
+ SM_2510_B	Conductivity	12300	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	12.5	degrees C		
+ SM_4500HB	pH	7.0	SU	2.0	

Sample Site: Sand Canyon Well #14**Site Identity:** SC_14**Sample Number:** 430436**Date/Time Sampled:** 15-MAY-2019 13:00**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	13300	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.69	mg/L	0.10	
EPA_300_0	Chloride	185	mg/L	0.25	D
	Sulfate	8160	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1580	ug/L	20.0	T
	Calcium (Total Recoverable)	334000	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	363	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	<1.0	ug/L	1.0	D
	Barium (Total Recoverable)	5.0	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	1.2	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	8.6	ug/L	0.20	D
	Selenium (Total Recoverable)	5.0	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	0.232	pCi/L	0.090	J
* EPA_904_0	Radium 228	0.546	pCi/L	0.373	J
NA	Depth to Water	9.14	ft.		
+ SM_2510_B	Conductivity	12000	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	11.3	degrees C		
+ SM_4500HB	pH	7.1	SU	2.0	

Sample Site: Equipment Blank**Site Identity: EQUIP_BLK****Sample Number: 430437****Date/Time Sampled: 15-MAY-2019 10:11****Comp/Grab: GRAB****Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	<10	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	<0.10	mg/L	0.10	
EPA_300_0	Chloride	<0.25	mg/L	0.25	
	Sulfate	<0.25	mg/L	0.25	
EPA_1631	Mercury (Total)	<0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	<20.0	ug/L	20.0	T
	Calcium (Total Recoverable)	<100	ug/L	100	T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	<10.0	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	<1.0	ug/L	1.0	D
	Barium (Total Recoverable)	<0.20	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	<1.0	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	<0.20	ug/L	0.20	D
	Selenium (Total Recoverable)	<1.0	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D

Analysis Information:

*: Analysis performed by an external contract laboratory.

+: Analysis performed in the Field.

^: The Reporting Limit for the total analytes is less than two times the method Detection Limit (MDL).

The associated concentration value reported is an approximation of the analyte.

#: Total value is a result of a calculation.

~: Sample was not distilled prior to analysis.

**: This analysis is not listed in 40 CFR Part 136.

Data Qualifiers:

D - Sample required dilution. The associated analyte concentration value reported has dilution factor applied. Reporting Limit does not reflect dilution factor.

D1 - To minimize matrix effects, the sample required dilution. The result is below the Reporting Limit, but within the method defined instrument detection.

J - Analysis confirms the presence of the analyte at a concentration which is less than the established Reporting Limit(RL), but greater than the Method Detection Limit(MDL). The associated concentration value reported is approx.

R1 - Carrier is outside acceptance limits.

T - The matrix spike recovery for the sample batch is outside the established range. The performance of the method is shown to be in control. The recovery is matrix related, not method related.

T1 - The analyte concentration in the sample is disproportionate to the spike level. The performance of the method was shown to be in control.

CCR Landfill Groundwater Assessment
Sample Date: 5-14-19
QC Report Needed

Jeffrey J. Hartzer
Sampler:

LOCATION	# Bottles	LIMS #	Sample Time	Please mark boxes that apply									
CC_1	8	430424	11417	12.4	26,300	13.54	x	x	x	x	x	x	x
FC_1	8	430425	930	13.2	21,500	14.79	x	x	x	x	x	x	x
FC_2	8	430426	1013	17.23	10,030	12.71	x	x	x	x	x	x	x
FC_3A	8	430427	1250	7.48	12.5	9,410	17.24	x	x	x	x	x	x
FC_3A Duplicate	8	430428	1250				x	x	x	x	x	x	x
FC_3B	8	430429	1332	7.20	13.0	9,480	16.43	x	x	x	x	x	x
EQUIP_BLK	6	430430	1108				x	x	x	x	x	x	x
Total # of Bottles													

F = Field Filtered

Additional Comments / Sample Rejections/ Actions

Sample Template: CCR_LAND
 Project ID: CCR_LAND
 Test Schedule: CCR_LAND

Comments

Relinquished by Jeffrey J. Hartzer Signature/Print last name
Received by M. Campbell Date/Time 1415 @ 1415

① 5-15-19
 WMT



Colorado Springs Utilities
Laboratory Services
Grab Samples

CCR Landfill Groundwater Assessment

Sample Date: 5-15-19

QC Report Needed

Sampler: J. Heize /

LOCATION	# Bottles	LIMS #	Sample Time	Please mark boxes that apply												
SC_10	8	430431	9/18	7.25	14.0	17,440	11.85	x	x	x	x	x	x	x	x	
SC_11	8	430432	9/8	7.19	13.2	15,240	8.27	x	x	x	x	x	x	x	f	
SC_12	8	430433	1/14	7.28	13.0	14,950	9.11	x	x	x	x	x	x	x	f	
SC_12 Duplicate	8	430434	1/14					x	x	x	x	x	x	x	f	
SC_13	8	430435	12/22	6.98	12.5	12,290	9.44	x	x	x	x	x	x	x	f	
SC_14	8	430436	1/300	7.13	11.3	12,000	9.14	x	x	x	x	x	x	x	f	
EQUIP_BLK	6	430437	10/11					x	x	x	x	x	x	x	x	
Total # of Bottles																

F = Field Filtered

Total # of Bottles 54

Additional Comments / Sample Rejections
Actions

Sample Template: CCR_LAND
Project ID: CCR_LAND
Test Schedule: CCR_LAND

Date/Time

5-15-19

1350

Signature/Print last name:

J. Heize /

Relinquished by

McPherson Campbell

Received by

⑧ 5-16-19 WMA



Colorado Springs Utilities

It's how we're all connected

Laboratory Services Section QC Report

**CCR Landfill Assessment
May 2019**

Quality Assurance Officer Approval:

A handwritten signature in black ink, appearing to read "Brent J. Johnson".

Date: 7-15-19

QC Narrative

This report is for sample numbers 430424-430437.

Total Dissolved Solids by Standard Methods 2540 C

There are no anomalies to report for this analysis.

Fluoride by Standard Methods 4500 F C

There are no anomalies to report for this analysis.

Anions by EPA Method 300.0

There are no anomalies to report for this analysis.

Mercury by EPA 1631 E

There are no anomalies to report for this analysis.

EPA 200.7

The matrix spike recovery for the sample batch is outside the established range for Total Recoverable Boron. The performance of the method is shown to be in control. The recovery is matrix related, not method related. Associated samples 430431-430437 are qualified.

The analyte concentration in the sample is disproportionate to the spike level for Total Recoverable Calcium. The performance of the method was shown to be in control. Associated samples 4300424-430437 are qualified.

EPA 200.8

There are no anomalies to report for this analysis.

Method: Total Dissolved Solids by Standard Methods 2540 C

Batch Analysis date: 5/15/19

Sampled date: 5/14/19 for samples 430424-430430

Matrix QC performed on sample 430424

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
QCS	Total Dissolved Solids	102	84 - 111		
Duplicate	Total Dissolved Solids			1	<10

Method: Total Dissolved Solids by Standard Methods 2540 C

Batch Analysis date: 5/15/19

Sampled date: 5/15/19 for samples 430431-431437

Matrix QC performed on sample 430436

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
QCS	Total Dissolved Solids	99	84 - 110		
Duplicate	Total Dissolved Solids			<1	<10

Method: Fluoride by Standard Methods 4500 F C

Batch Analysis date: 5/15/19

Sampled date: 5/14/19 for samples 430424-430430

Matrix QC performed on sample 430429

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Fluoride (Total)	100	90 - 110		
QCS	Fluoride (Total)	102	90 - 110		
MS	Fluoride (Total)	90	80 - 120		
MSD	Fluoride (Total)			2	<20

QC Type	Analyte	Concentration	Limit
LRB	Fluoride (Total)	<0.10 mg/L	0.10 mg/L

Method: Fluoride by Standard Methods 4500 F C

Batch Analysis date: 5/17/19

Sampled date: 5/15/19 for samples 430431-430437

Matrix QC performed on sample 430436

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Fluoride (Total)	94	90 - 110		
QCS	Fluoride (Total)	94	90 - 110		
MS	Fluoride (Total)	100	80 - 120		
MSD	Fluoride (Total)			<1	<20

QC Type	Analyte	Concentration	Limit
LRB	Fluoride (Total)	<0.10 mg/L	0.10 mg/L

Method: Anions by EPA Method 300.0

Batch Analysis date: 5/17/19

Sampled date: 5/14/19 for samples 430424 - 430430

Sampled date: 5/15/19 for samples 430431 - 430437

Matrix QC performed on samples 430427 and 430433

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Chloride	96	50-150		
LFB	Chloride	100	90-110	<1	<20
FD	Chloride (430427)			<1	<20
MS	Chloride (430427)	98	80-120		
FD	Chloride (430433)			<1	<20
MS	Chloride (430433)	96	80-120		
MRL	Sulfate	98	50-150		
LFB	Sulfate	100	90-110	<1	<20
FD	Sulfate (430427)			<1	<20
MS	Sulfate (430427)	95	80-120		
FD	Sulfate (430433)			3	<20
MS	Sulfate (430433)	94	80-120		

QC Type	Analyte	Concentration	Limit
LRB	Chloride	<0.25 mg/L	0.25 mg/L
LRB	Sulfate	<0.25 mg/L	0.25 mg/L

Method: Mercury by EPA 1631 E

Batch Analysis date: 6/19/19

Sampled date: 5/14/19 for samples 430424 - 430430

Sampled date: 5/15/19 for samples 430431 - 430437

Matrix QC performed on sample 430427 and 430433

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Mercury (Total)	103	50-150		
QCS	Mercury (Total)	107	77-123		
MS	Mercury (Total) (430427)	90	71-125		
MSD	Mercury (Total) (430427)			8	<24
MS	Mercury (Total) (430433)	91	71-125		
MSD	Mercury (Total) (430433)			2	<24

QC Type	Analyte	Concentration	Limit
LRB	Mercury (Total)	<0.5 ng/L	0.5 ng/L

Method: EPA 200.7
 Batch Analysis date: 5/31/19
 Digestion date: 5/23/19
 Sampled date: 5/14/19 for samples 430424 - 430430

Matrix QC performed on sample 430427

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Boron (Total Recoverable)	116	50-150		
LFB	Boron (Total Recoverable)	102	85-115		
MS	Boron (Total Recoverable)	87	70-130		
MSD	Boron (Total Recoverable)			6	<20
MRL	Calcium (Total Recoverable)	111	50-150		
LFB	Calcium (Total Recoverable)	100	85-115		
MS	Calcium (Total Recoverable)	<u>*-18</u>	70-130		
MSD	Calcium (Total Recoverable)			5	<20
MRL	Cobalt (Total Recoverable)	102	50-150		
LFB	Cobalt (Total Recoverable)	100	85-115		
MS	Cobalt (Total Recoverable)	86	70-130		
MSD	Cobalt (Total Recoverable)			<1	<20
MRL	Lithium (Total Recoverable)	106	50-150		
LFB	Lithium (Total Recoverable)	102	85-115		
MS	Lithium (Total Recoverable)	116	70-130		
MSD	Lithium (Total Recoverable)			<1	<20
QC Type	Analyte	Concentration	Limit		
LRB	Boron (Total Recoverable)	<10.78 ug/L	10.78 ug/L		
LRB	Calcium (Total Recoverable)	<25.3 ug/L	25.3 ug/L		
LRB	Cobalt (Total Recoverable)	<1.78 ug/L	1.78 ug/L		
LRB	Lithium (Total Recoverable)	<5.15 ug/L	5.15 ug/L		

*See Narrative

Method: EPA 200.7
 Batch Analysis date: 6/4/19
 Digestion date: 5/23/19
 Sampled date: 5/15/19 for samples 430431 - 430437

Matrix QC performed on sample 430433

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Boron (Total Recoverable)	103	50-150		
LFB	Boron (Total Recoverable)	102	85-115		
MS	Boron (Total Recoverable)	<u>*42</u>	70-130		
MSD	Boron (Total Recoverable)			2	<20
MRL	Calcium (Total Recoverable)	106	50-150		
LFB	Calcium (Total Recoverable)	101	85-115		
MS	Calcium (Total Recoverable)	<u>*5</u>	70-130		
MSD	Calcium (Total Recoverable)			2	<20
MRL	Cobalt (Total Recoverable)	103	50-150		
LFB	Cobalt (Total Recoverable)	101	85-115		

MS	Cobalt (Total Recoverable)	85	70-130		
MSD	Cobalt (Total Recoverable)			<1	<20
MRL	Lithium (Total Recoverable)	102	50-150		
LFB	Lithium (Total Recoverable)	103	85-115		
MS	Lithium (Total Recoverable)	121	70-130		
MSD	Lithium (Total Recoverable)			2	<20
QC Type	Analyte	Concentration	Limit		
LRB	Boron (Total Recoverable)	<10.78 ug/L	10.78 ug/L		
LRB	Calcium (Total Recoverable)	<25.3 ug/L	25.3 ug/L		
LRB	Cobalt (Total Recoverable)	<1.78 ug/L	1.78 ug/L		
LRB	Lithium (Total Recoverable)	<5.15 ug/L	5.15 ug/L		

*See Narrative

Method: EPA 200.8

Digestion date: 5/23/19

Batch Analysis date: 6/5/19

Sampled date: 5/14/19 for samples 430424 – 430430

Matrix QC performed on sample 430427

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Antimony (Total Recoverable)	97	50-150		
LFB	Antimony (Total Recoverable)	100	85-115		
MS	Antimony (Total Recoverable)	86	70-130		
MSD	Antimony (Total Recoverable)			<1	<20
MRL	Arsenic (Total Recoverable)	98	50-150		
LFB	Arsenic (Total Recoverable)	101	85-115		
MS	Arsenic (Total Recoverable)	92	70-130		
MSD	Arsenic (Total Recoverable)			3	<20
MRL	Barium (Total Recoverable)	97	50-150		
LFB	Barium (Total Recoverable)	101	85-115		
MS	Barium (Total Recoverable)	98	70-130		
MSD	Barium (Total Recoverable)			1	<20
MRL	Beryllium (Total Recoverable)	116	50-150		
LFB	Beryllium (Total Recoverable)	99	85-115		
MS	Beryllium (Total Recoverable)	83	70-130		
MSD	Beryllium (Total Recoverable)			6	<20
MRL	Cadmium (Total Recoverable)	97	50-150		
LFB	Cadmium (Total Recoverable)	101	85-115		
MS	Cadmium (Total Recoverable)	89	70-130		
MSD	Cadmium (Total Recoverable)			<1	<20
MRL	Chromium (Total Recoverable)	104	50-150		
LFB	Chromium (Total Recoverable)	106	85-115		
MS	Chromium (Total Recoverable)	88	70-130		
MSD	Chromium (Total Recoverable)			1	<20
MRL	Lead (Total Recoverable)	99	50-150		
LFB	Lead (Total Recoverable)	101	85-115		
MS	Lead (Total Recoverable)	92	70-130		
MSD	Lead (Total Recoverable)			1	<20

MRL	Molybdenum (Total Recoverable)	102	50-150		
LFB	Molybdenum (Total Recoverable)	100	85-115		
MS	Molybdenum (Total Recoverable)	91	70-130		
MSD	Molybdenum (Total Recoverable)			1	<20
MRL	Selenium (Total Recoverable)	100	50-150		
LFB	Selenium (Total Recoverable)	102	85-115		
MS	Selenium (Total Recoverable)	101	70-130		
MSD	Selenium (Total Recoverable)			<1	<20
MRL	Thallium (Total Recoverable)	99	50-150		
LFB	Thallium (Total Recoverable)	101	85-115		
MS	Thallium (Total Recoverable)	91	70-130		
MSD	Thallium (Total Recoverable)			<1	<20

QC Type	Analyte	Concentration	Limit
LRB	Antimony (Total Recoverable)	<0.176 ug/L	0.176 ug/L
LRB	Arsenic (Total Recoverable)	<0.352 ug/L	0.352 ug/L
LRB	Barium (Total Recoverable)	<0.044 ug/L	0.044 ug/L
LRB	Beryllium (Total Recoverable)	<0.049 ug/L	0.049 ug/L
LRB	Cadmium (Total Recoverable)	<0.110 ug/L	0.110 ug/L
LRB	Chromium (Total Recoverable)	<0.375 ug/L	0.375 ug/L
LRB	Lead (Total Recoverable)	<0.066 ug/L	0.066 ug/L
LRB	Molybdenum (Total Recoverable)	<0.031 ug/L	0.031 ug/L
LRB	Selenium (Total Recoverable)	<0.352 ug/L	0.352 ug/L
LRB	Thallium (Total Recoverable)	<0.139 ug/L	0.139 ug/L

Method: EPA 200.8

Digestion date: 5/23/19

Batch Analysis date: 6/5/19

Sampled date: 5/14/19 for samples 430431 – 430437

Matrix QC performed on sample 430433

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Antimony (Total Recoverable)	96	50-150		
LFB	Antimony (Total Recoverable)	99	85-115		
MS	Antimony (Total Recoverable)	90	70-130		
MSD	Antimony (Total Recoverable)			2	<20
MRL	Arsenic (Total Recoverable)	103	50-150		
LFB	Arsenic (Total Recoverable)	102	85-115		
MS	Arsenic (Total Recoverable)	91	70-130		
MSD	Arsenic (Total Recoverable)			1	<20
MRL	Barium (Total Recoverable)	104	50-150		
LFB	Barium (Total Recoverable)	101	85-115		
MS	Barium (Total Recoverable)	92	70-130		
MSD	Barium (Total Recoverable)			<1	<20
MRL	Beryllium (Total Recoverable)	116	50-150		
LFB	Beryllium (Total Recoverable)	99	85-115		
MS	Beryllium (Total Recoverable)	80	70-130		
MSD	Beryllium (Total Recoverable)			3	<20
MRL	Cadmium (Total Recoverable)	96	50-150		
LFB	Cadmium (Total Recoverable)	100	85-115		

MS	Cadmium (Total Recoverable)	88	70-130		
MSD	Cadmium (Total Recoverable)			<1	<20
MRL	Chromium (Total Recoverable)	106	50-150		
LFB	Chromium (Total Recoverable)	106	85-115		
MS	Chromium (Total Recoverable)	89	70-130		
MSD	Chromium (Total Recoverable)			1	<20
MRL	Lead (Total Recoverable)	98	50-150		
LFB	Lead (Total Recoverable)	101	85-115		
MS	Lead (Total Recoverable)	92	70-130		
MSD	Lead (Total Recoverable)			<1	<20
MRL	Molybdenum (Total Recoverable)	100	50-150		
LFB	Molybdenum (Total Recoverable)	102	85-115		
MS	Molybdenum (Total Recoverable)	92	70-130		
MSD	Molybdenum (Total Recoverable)			1	<20
MRL	Selenium (Total Recoverable)	98	50-150		
LFB	Selenium (Total Recoverable)	104	85-115		
MS	Selenium (Total Recoverable)	96	70-130		
MSD	Selenium (Total Recoverable)			2	<20
MRL	Thallium (Total Recoverable)	98	50-150		
LFB	Thallium (Total Recoverable)	101	85-115		
MS	Thallium (Total Recoverable)	94	70-130		
MSD	Thallium (Total Recoverable)			2	<20

QC Type	Analyte	Concentration	Limit
LRB	Antimony (Total Recoverable)	<0.176 ug/L	0.176 ug/L
LRB	Arsenic (Total Recoverable)	<0.352 ug/L	0.352 ug/L
LRB	Barium (Total Recoverable)	<0.044 ug/L	0.044 ug/L
LRB	Beryllium (Total Recoverable)	<0.049 ug/L	0.049 ug/L
LRB	Cadmium (Total Recoverable)	<0.110 ug/L	0.110 ug/L
LRB	Chromium (Total Recoverable)	<0.375 ug/L	0.375 ug/L
LRB	Lead (Total Recoverable)	<0.066 ug/L	0.066 ug/L
LRB	Molybdenum (Total Recoverable)	<0.031 ug/L	0.031 ug/L
LRB	Selenium (Total Recoverable)	<0.352 ug/L	0.352 ug/L
LRB	Thallium (Total Recoverable)	<0.139 ug/L	0.139 ug/L

FD – Field Duplicate

LFB – Laboratory Fortified Blank

LRB – Laboratory Reagent Blank (Method Blank)

QCS – Quality Control Sample

MRL – Minimum Reporting Limit (Verification)

MS – Matrix Spike

MSD – Matrix Spike Duplicate

Underline – Data was outside the limit



Environment Testing TestAmerica

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-34213-2

Client Project/Site: Monitoring Wells_CCR Assessment

For:

Colorado Springs Utilities
Laboratory Services Section
701 E. Las Vegas St., MC 1465
Colorado Springs, Colorado 80903

Attn: Ms. Wendy Asay

Rhonda Ridenhower

Authorized for release by:

8/14/2019 2:00:52 PM

Rhonda Ridenhower, Manager of Project Management
rhonda.ridenhower@testamericainc.com

Designee for

Chenise Lambert-Sykes, Project Manager I
(314)298-8566
chenise.lambert-sykes@testamericainc.com

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www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	5
Receipt Checklists	7
Definitions/Glossary	8
Method Summary	9
Sample Summary	10
Client Sample Results	11
QC Sample Results	14
QC Association Summary	16
Tracer Carrier Summary	17

Case Narrative

Client: Colorado Springs Utilities
Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Job ID: 160-34213-2

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Colorado Springs Utilities

Project: Monitoring Wells_CCR Assessment

Report Number: 160-34213-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 05/17/2019; the samples arrived in good condition, properly preserved. The temperature of the coolers at receipt was 17.0 C.

RADIUM-226 (GFPC)

Case Narrative

Client: Colorado Springs Utilities
Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Job ID: 160-34213-2 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Samples SC_10 430431 (160-34213-7), SC_11 430432 (160-34213-8), SC_12 430433 (160-34213-9), SC_12 duplicate 430434 (160-34213-10), SC_13 430435 (160-34213-11) and SC_14 430436 (160-34213-12) were analyzed for Radium-226 (GFPC) in accordance with EPA Method 903.0. The samples were prepared on 06/07/2019 and analyzed on 08/07/2019.

The Barium carrier recovery is outside the upper control limit (110%) for the following sample: SC_12 430433 (160-34213-9). The sample was heated at full heat for an extra 30 minutes to eliminate extra water molecules that could cause a high bias in carrier recovery with no significant change.

The following sample has a barium recovery above the 110% QC limit; (160-34213-9; 124%). The LCS/LCSD (laboratory control sample/laboratory control sample duplicate) have acceptable spike recoveries demonstrating acceptable sample preparation and instrument performance. The sample has been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been reported with this narrative. SC_12 430433 (160-34213-9)

Insufficient sample volume was available to perform a sample duplicate for the following samples: SC_10 430431 (160-34213-7), SC_11 430432 (160-34213-8), SC_12 430433 (160-34213-9), SC_12 duplicate 430434 (160-34213-10), SC_13 430435 (160-34213-11) and SC_14 430436 (160-34213-12). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-228 (GFPC)

Samples SC_10 430431 (160-34213-7), SC_11 430432 (160-34213-8), SC_12 430433 (160-34213-9), SC_12 duplicate 430434 (160-34213-10), SC_13 430435 (160-34213-11) and SC_14 430436 (160-34213-12) were analyzed for Radium-228 (GFPC) in accordance with EPA 904. The samples were prepared on 06/07/2019 and analyzed on 07/10/2019.

The Barium carrier recovery is outside the upper control limit (110%) for the following sample: SC_12 430433 (160-34213-9). The sample was heated at full heat for an extra 30 minutes to eliminate extra water molecules that could cause a high bias in carrier recovery with no significant change.

The following sample has a barium carrier recovery above the 110% QC limit; (160-34213-9; 124%). Affected samples had a barium correction applied. The LCS/LCSD (laboratory control sample/duplicate) have acceptable spike recoveries demonstrating acceptable sample preparation and instrument performance. The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been qualified and reported

Insufficient sample volume was available to perform a sample duplicate for the following samples: SC_10 430431 (160-34213-7), SC_11 430432 (160-34213-8), SC_12 430433 (160-34213-9), SC_12 duplicate 430434 (160-34213-10), SC_13 430435 (160-34213-11) and SC_14 430436 (160-34213-12). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Chain of Custody Record

Earth City, MO 63045-1205
phone 314.298.8756 fax 314.298.8757

Client Contact		Regulatory Program:		<input type="checkbox"/> DW	<input type="checkbox"/> NPDES	<input type="checkbox"/> RCRA	<input type="checkbox"/> Other:	
Colorado Springs Utilities	Project Manager: Wendy Asay Tel/Fax: 719-658-4603	Site Contact:	Lab Contact:	Date:	Carrier:	COC No. _____	of _____ COCs	
701 E. Las Vegas St.	Analysis Turnaround Time							
Colorado Springs, CO 80903	<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
(719) 658-4603	Phone	TAT if different from Below						
(xxx) xxx-xxxx	FAX	<input checked="" type="checkbox"/> 2 weeks						
Project Name: CCR Assessment		<input type="checkbox"/> 1 week						
Site:		<input type="checkbox"/> 2 days						
P O #		<input type="checkbox"/> 1 day						
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:	
CC_1 430424		5/14/19	1147	G	GW	2	<input type="checkbox"/> Y	<input type="checkbox"/> X
FC_1 430425		5/14/19	0930	G	GW	2	<input type="checkbox"/> Y	<input type="checkbox"/> X
FC_2 430426		5/14/19	1013	G	GW	2	<input type="checkbox"/> Y	<input type="checkbox"/> X
FC_3A 430427		5/14/19	1250	G	GW	2	<input type="checkbox"/> N	<input type="checkbox"/> X
FC_3A duplicate 430428		5/14/19	1250	G	GW	2	<input type="checkbox"/> N	<input type="checkbox"/> X
FC_3B 430429		5/14/19	1332	G	GW	2	<input type="checkbox"/> Y	<input type="checkbox"/> X
Preservation Used: 1=Ice, 2=HCl; 3=H ₂ SO ₄ ; 4=HNO ₃ ; 5=NaOH; 6=Other								
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.								
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown								
Special Instructions/QC Requirements & Comments: Please be sure to use the listed method numbers.								
Custody Seals Intact:		<input type="checkbox"/> Yes	<input type="checkbox"/> No	Custody Seal No.:		Cooler Temp (°C): Obs'd:		Corrd.:
Relinquished by:		<i>By J. Campbell</i>		Company: <i>CSU</i>	Date/Time: <i>5/14/2019 @ 1330</i>	Received by: <i>M. Mahan</i>	Company: <i>TestAmerica</i>	Date/Time: <i>5/14/2019 1330</i>
Relinquished by:				Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

1 2 3 4 5 6 7 8 9 10 11 12

Chain of Custody Record

Earth City, MO 63045-1205
phone 314.298.8566 fax 314.298.8757

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: Wendy Assay		Site Contact:		Date: Carrier:		COC No. of COCs	
Colorado Springs Utilities 701 E. Las Vegas St. Colorado Springs, CO 80903	Tel/Fax: 719-668-4603	Analysis Turnaround Time						Sampler:	
		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS						For Lab Use Only:	
		TAT if different from Below _____ <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/>						Walk-in Client: Lab Sampling:	
		Project Name: CCR Assessment						Job / SDG No.:	
Site: P O #									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample	Specific Notes:	
SC_10 430431	5/15/19	0918	G	GW	2	Y	X X		
SC_11 430432	5/15/19	0958	G	GW	2	Y	X X		
SC_12 430433	5/15/19	1114	G	GW	2	Y	X X		
SC_12 duplicate 430434	5/15/19	1114	G	GW	2	Y	X X		
SC_13 430435	5/15/19	1222	G	GW	2	Y	X X		
SC_14 430436	5/15/19	1300	G	GW	2	Y	X X		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown									
Special Instructions/QC Requirements & Comments: Please be sure to use the listed method numbers.									
Custody Seals Intact:		<input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd. Corrd. Therm ID No.:			
Relinquished by:				Company: C SU		Date/Time: 5/19/1330	Received by: 		
Relinquished by:				Company:		Date/Time:	Company:		
Relinquished by:				Company:		Date/Time:	Company:		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard Flammable Skin Irritant Poison B Unknown

Comments:
Special Instructions/QC Requirements & Comments: Please be sure to use the listed method numbers.

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for Months

Custody Seals Intact:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temp. (°C): Obs'd. Corrd. Therm ID No.:
Relinquished by:		Company: C SU	Date/Time: 5/19/1330 Received by: 
Relinquished by:		Company:	Date/Time:
Relinquished by:		Company:	Date/Time:

Login Sample Receipt Checklist

Client: Colorado Springs Utilities

Job Number: 160-34213-2

Login Number: 34213

List Source: Eurofins TestAmerica, St. Louis

List Number: 1

Creator: Korrinizer, Micha L

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Colorado Springs Utilities
Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Qualifiers

Rad Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
X	Carrier is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Colorado Springs Utilities
Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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Sample Summary

Client: Colorado Springs Utilities

Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID	
160-34213-7	SC_10 430431	Water	05/15/19 09:18	05/17/19 09:20		1
160-34213-8	SC_11 430432	Water	05/15/19 09:58	05/17/19 09:20		2
160-34213-9	SC_12 430433	Water	05/15/19 11:14	05/17/19 09:20		3
160-34213-10	SC_12 duplicate 430434	Water	05/15/19 11:14	05/17/19 09:20		4
160-34213-11	SC_13 430435	Water	05/15/19 12:22	05/17/19 09:20		5
160-34213-12	SC_14 430436	Water	05/15/19 13:00	05/17/19 09:20		6

Client Sample Results

Client: Colorado Springs Utilities

Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Client Sample ID: SC_10 430431

Date Collected: 05/15/19 09:18

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-7

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.261		0.0936	0.0965	1.00	0.0960	pCi/L	06/07/19 10:27	08/07/19 14:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					06/07/19 10:27	08/07/19 14:16	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.03		0.352	0.365	1.00	0.484	pCi/L	06/07/19 11:36	07/10/19 11:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					06/07/19 11:36	07/10/19 11:50	1
Y Carrier	80.0		40 - 110					06/07/19 11:36	07/10/19 11:50	1

Client Sample ID: SC_11 430432

Date Collected: 05/15/19 09:58

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-8

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.446		0.117	0.124	1.00	0.105	pCi/L	06/07/19 10:27	08/07/19 14:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.7		40 - 110					06/07/19 10:27	08/07/19 14:17	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.39		0.335	0.359	1.00	0.389	pCi/L	06/07/19 11:36	07/10/19 11:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.7		40 - 110					06/07/19 11:36	07/10/19 11:50	1
Y Carrier	80.7		40 - 110					06/07/19 11:36	07/10/19 11:50	1

Client Sample ID: SC_12 430433

Date Collected: 05/15/19 11:14

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-9

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.152		0.0805	0.0816	1.00	0.103	pCi/L	06/07/19 10:27	08/07/19 16:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	125	X	40 - 110					06/07/19 10:27	08/07/19 16:50	1

Eurofins TestAmerica, St. Louis

Client Sample Results

Client: Colorado Springs Utilities
 Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Client Sample ID: SC_12 430433

Date Collected: 05/15/19 11:14
 Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-9

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.265	U	0.236	0.237	1.00	0.377	pCi/L	06/07/19 11:36	07/10/19 11:50	1
Carrier										
Ba Carrier	125	X	40 - 110					06/07/19 11:36	07/10/19 11:50	1
Y Carrier	77.8		40 - 110					06/07/19 11:36	07/10/19 11:50	1

Client Sample ID: SC_12 duplicate 430434

Date Collected: 05/15/19 11:14
 Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-10

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.136		0.0771	0.0781	1.00	0.103	pCi/L	06/07/19 10:27	08/07/19 16:50	1
Carrier										
Ba Carrier	101		40 - 110					06/07/19 10:27	08/07/19 16:50	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.525		0.262	0.266	1.00	0.387	pCi/L	06/07/19 11:36	07/10/19 11:52	1
Carrier										
Ba Carrier	101		40 - 110					06/07/19 11:36	07/10/19 11:52	1
Y Carrier	85.2		40 - 110					06/07/19 11:36	07/10/19 11:52	1

Client Sample ID: SC_13 430435

Date Collected: 05/15/19 12:22
 Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-11

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.0903	U	0.0659	0.0664	1.00	0.0932	pCi/L	06/07/19 10:27	08/07/19 16:50	1
Carrier										
Ba Carrier	90.4		40 - 110					06/07/19 10:27	08/07/19 16:50	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.0841	U	0.256	0.256	1.00	0.443	pCi/L	06/07/19 11:36	07/10/19 11:52	1
Carrier										
Ba Carrier	90.4		40 - 110					06/07/19 11:36	07/10/19 11:52	1

Eurofins TestAmerica, St. Louis

Client Sample Results

Client: Colorado Springs Utilities

Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Client Sample ID: SC_13 430435

Date Collected: 05/15/19 12:22

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-11

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.7		40 - 110	06/07/19 11:36	07/10/19 11:52	1

Client Sample ID: SC_14 430436

Date Collected: 05/15/19 13:00

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-12

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.232		0.0858	0.0883	1.00	0.0896	pCi/L	06/07/19 10:27	08/07/19 16:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					06/07/19 10:27	08/07/19 16:51	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.546		0.258	0.263	1.00	0.373	pCi/L	06/07/19 11:36	07/10/19 11:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					06/07/19 11:36	07/10/19 11:54	1
Y Carrier	83.0		40 - 110					06/07/19 11:36	07/10/19 11:54	1

Eurofins TestAmerica, St. Louis

QC Sample Results

Client: Colorado Springs Utilities
 Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-431147/23-A

Matrix: Water

Analysis Batch: 438879

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 431147

Analyte	Result	MB	MB	Count		Total		RL	MDC	Unit	Prepared	Analyzed	Dil Fac
				Uncert.	(2σ+/-)	Uncert.	(2σ+/-)						
Radium-226	0.01897	U		0.0558		0.0559		1.00	0.103	pCi/L	06/07/19 10:27	08/08/19 11:37	1
<i>Carrier</i>		<i>MB</i>	<i>MB</i>								<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier		%Yield	Qualifier		Limits						06/07/19 10:27	08/08/19 11:37	1
		92.7			40 - 110								

Lab Sample ID: LCS 160-431147/1-A

Matrix: Water

Analysis Batch: 438686

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 431147

Analyte	Spike Added	LCS Result	LCS Qual	Total		RL	MDC	Unit	%Rec	%Rec.	Limits	RER
				Uncert.	(2σ+/-)							
Radium-226	11.4	9.870		1.01		1.00	0.0948	pCi/L	87	75 - 125		
<i>Carrier</i>		<i>LCS</i>	<i>LCS</i>									
Ba Carrier		%Yield	Qualifier		Limits							
		104			40 - 110							

Lab Sample ID: LCSD 160-431147/2-A

Matrix: Water

Analysis Batch: 438686

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 431147

Analyte	Spike Added	LCSD Result	LCSD Qual	Total		RL	MDC	Unit	%Rec	%Rec.	Limits	RER
				Uncert.	(2σ+/-)							
Radium-226	11.4	11.00		1.13		1.00	0.113	pCi/L	97	75 - 125	0.53	1
<i>Carrier</i>		<i>LCSD</i>	<i>LCSD</i>									
Ba Carrier		%Yield	Qualifier		Limits							
		89.3			40 - 110							

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-431164/23-A

Matrix: Water

Analysis Batch: 434371

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 431164

Analyte	Result	MB	MB	Count		RL	MDC	Unit	Prepared	Analyzed	Dil Fac
				Uncert.	(2σ+/-)						
Radium-228	-0.02471	U		0.253		0.253	0.457	pCi/L	06/07/19 11:36	07/10/19 11:59	1
<i>Carrier</i>		<i>MB</i>	<i>MB</i>						<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier		%Yield	Qualifier		Limits				06/07/19 11:36	07/10/19 11:59	1
Y Carrier		92.7			40 - 110				06/07/19 11:36	07/10/19 11:59	1
		81.9			40 - 110						

Eurofins TestAmerica, St. Louis

QC Sample Results

Client: Colorado Springs Utilities

Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-431164/1-A

Matrix: Water

Analysis Batch: 434381

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 431164

Analyte	Spike Added	LCS		Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
		Result	Qual						
Radium-228	9.04	8.830		1.05	1.00	0.412	pCi/L	98	75 - 125

LCS LCS

Carrier	%Yield	Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	76.6		40 - 110

Lab Sample ID: LCSD 160-431164/2-A

Matrix: Water

Analysis Batch: 434381

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 431164

Analyte	Spike Added	LCSD		Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
		Result	Qual								
Radium-228	9.04	8.320		1.05	1.00	0.562	pCi/L	92	75 - 125	0.24	1

LCSD LCSD

Carrier	%Yield	Qualifier	Limits
Ba Carrier	89.3		40 - 110
Y Carrier	78.5		40 - 110

Eurofins TestAmerica, St. Louis

QC Association Summary

Client: Colorado Springs Utilities

Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Rad

Prep Batch: 431147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34213-7	SC_10 430431	Total/NA	Water	PrecSep-21	
160-34213-8	SC_11 430432	Total/NA	Water	PrecSep-21	
160-34213-9	SC_12 430433	Total/NA	Water	PrecSep-21	
160-34213-10	SC_12 duplicate 430434	Total/NA	Water	PrecSep-21	
160-34213-11	SC_13 430435	Total/NA	Water	PrecSep-21	
160-34213-12	SC_14 430436	Total/NA	Water	PrecSep-21	
MB 160-431147/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-431147/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-431147/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 431164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34213-7	SC_10 430431	Total/NA	Water	PrecSep_0	
160-34213-8	SC_11 430432	Total/NA	Water	PrecSep_0	
160-34213-9	SC_12 430433	Total/NA	Water	PrecSep_0	
160-34213-10	SC_12 duplicate 430434	Total/NA	Water	PrecSep_0	
160-34213-11	SC_13 430435	Total/NA	Water	PrecSep_0	
160-34213-12	SC_14 430436	Total/NA	Water	PrecSep_0	
MB 160-431164/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-431164/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-431164/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Tracer/Carrier Summary

Client: Colorado Springs Utilities
Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Ba Carrier		Percent Yield (Acceptance Limits)							
		(40-110)		92.4	92.7	125 X	101	90.4	101	104	89.3
160-34213-7	SC_10 430431			92.4							
160-34213-8	SC_11 430432			92.7							
160-34213-9	SC_12 430433			125 X							
160-34213-10	SC_12 duplicate 430434			101							
160-34213-11	SC_13 430435			90.4							
160-34213-12	SC_14 430436			101							
LCS 160-431147/1-A	Lab Control Sample			104							
LCSD 160-431147/2-A	Lab Control Sample Dup			89.3							
MB 160-431147/23-A	Method Blank			92.7							

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Ba Carrier		Percent Yield (Acceptance Limits)																	
		(40-110)	(40-110)	92.4	80.0	92.7	80.7	125 X	77.8	101	85.2	90.4	86.7	101	83.0	104	76.6	89.3	78.5	92.7	81.9
160-34213-7	SC_10 430431			92.4	80.0																
160-34213-8	SC_11 430432			92.7	80.7																
160-34213-9	SC_12 430433			125 X	77.8																
160-34213-10	SC_12 duplicate 430434			101	85.2																
160-34213-11	SC_13 430435			90.4	86.7																
160-34213-12	SC_14 430436			101	83.0																
LCS 160-431164/1-A	Lab Control Sample			104	76.6																
LCSD 160-431164/2-A	Lab Control Sample Dup			89.3	78.5																
MB 160-431164/23-A	Method Blank			92.7	81.9																

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Y Carrier = Y Carrier



Environment Testing TestAmerica

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-34213-1

Client Project/Site: Monitoring Wells_CCR Assessment

For:

Colorado Springs Utilities
Laboratory Services Section
701 E. Las Vegas St., MC 1465
Colorado Springs, Colorado 80903

Attn: Ms. Wendy Asay

Rhonda Ridenhower

Authorized for release by:

8/14/2019 1:36:09 PM

Rhonda Ridenhower, Manager of Project Management
rhonda.ridenhower@testamericainc.com

Designee for

Chenise Lambert-Sykes, Project Manager I
(314)298-8566
chenise.lambert-sykes@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	5
Receipt Checklists	7
Definitions/Glossary	8
Method Summary	9
Sample Summary	10
Client Sample Results	11
QC Sample Results	14
QC Association Summary	17
Tracer Carrier Summary	18

Case Narrative

Client: Colorado Springs Utilities
Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Job ID: 160-34213-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Colorado Springs Utilities

Project: Monitoring Wells_CCR Assessment

Report Number: 160-34213-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 05/17/2019; the samples arrived in good condition, properly preserved. The temperature of the coolers at receipt was 17.0 C.

RADIUM-226 (GFPC)

Case Narrative

Client: Colorado Springs Utilities
Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Job ID: 160-34213-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Samples CC_1 430424 (160-34213-1), FC_1 430425 (160-34213-2), FC_2 430426 (160-34213-3), FC_3A 430427 (160-34213-4), FC_3A duplicate 430428 (160-34213-5) and FC_3B 430429 (160-34213-6) were analyzed for Radium-226 (GFPC) in accordance with EPA Method 903.0. The samples were prepared on 06/07/2019 and analyzed on 08/07/2019, 08/10/2019 and 08/12/2019.

Insufficient sample volume was available to perform a sample duplicate for the following samples: FC_3B 430429 (160-34213-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-228 (GFPC)

Samples CC_1 430424 (160-34213-1), FC_1 430425 (160-34213-2), FC_2 430426 (160-34213-3), FC_3A 430427 (160-34213-4), FC_3A duplicate 430428 (160-34213-5) and FC_3B 430429 (160-34213-6) were analyzed for Radium-228 (GFPC) in accordance with EPA 904. The samples were prepared on 06/07/2019 and analyzed on 07/10/2019 and 07/19/2019.

Insufficient sample volume was available to perform a sample duplicate for the following samples: FC_3B 430429 (160-34213-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

The daily beta check on the day of count (7/19) of the sample was inadvertently missed. The checks both the day of use before (7/18) and the day of use after (7/22) were within limits, demonstrating acceptable performance. In addition, one of the sample counts on the detector on (7/19) was another batch's laboratory control sample (LCS), which exhibited acceptable LCS recovery, further demonstrating acceptable detector performance. The laboratory does not believe this excursion adversely affects the data. FC_3A 430427 (160-34213-4)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Chain of Custody Record

Earth City, MO 63045-1205
phone 314.298.8756 fax 314.298.8757

Client Contact		Regulatory Program:		Project Manager: Wendy Asay		Site Contact:		Date:	
		<input type="checkbox"/> DW		<input type="checkbox"/> Tel/Fax: 719-658-4603		<input type="checkbox"/> Lab Contact:		<input type="checkbox"/> Carrier:	
		<input type="checkbox"/> NPDES		Analysis Turnaround Time					
		<input type="checkbox"/> RCRA		<input checked="" type="checkbox"/> WORKING DAYS					
		<input type="checkbox"/> Other:		<input checked="" type="checkbox"/> CALENDAR DAYS					
				TAT if different from Below					
				<input checked="" type="checkbox"/> 2 weeks					
				<input type="checkbox"/> 1 week					
				<input type="checkbox"/> 2 days					
				<input type="checkbox"/> 1 day					
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:		
CC_1	430424	5/14/19	1147	G	GW	2	<input type="checkbox"/> Y	<input type="checkbox"/> X	
FC_1	430425	5/14/19	0930	G	GW	2	<input type="checkbox"/> Y	<input type="checkbox"/> X	
FC_2	430426	5/14/19	1013	G	GW	2	<input type="checkbox"/> Y	<input type="checkbox"/> X	
FC_3A	430427	5/14/19	1250	G	GW	2	<input type="checkbox"/> N	<input type="checkbox"/> X	
FC_3A	duplicate 430428	5/14/19	1250	G	GW	2	<input type="checkbox"/> N	<input type="checkbox"/> X	
FC_3B	430429	5/14/19	1332	G	GW	2	<input type="checkbox"/> Y	<input type="checkbox"/> X	
Preservation Used: 1=Ice, 2=HCl; 3=H ₂ SO ₄ ; 4=HNO ₃ ; 5=NaOH; 6=Other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown									
Special Instructions/QC Requirements & Comments: Please be sure to use the listed method numbers.									
Custody Seals Intact:		<input type="checkbox"/> Yes		<input type="checkbox"/> No		Custody Seal No.:		Corrid.:	
Relinquished by:				Company: CSU		Received by:		Therm ID No.: 5-17-19/0920	
Relinquished by:				Company:		Received by:		Date/Time:	
Relinquished by:				Company:		Received in Laboratory by:		Archive for Months:	

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Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

Chain of Custody Record

Earth City, MO 63045-1205
phone 314.298.8566 fax 314.298.8757

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: Wendy Assay		Site Contact:		Date: Carrier:		COC No. of COCs	
Colorado Springs Utilities 701 E. Las Vegas St. Colorado Springs, CO 80903	Tel/Fax: 719-668-4603	Analysis Turnaround Time						Sampler:	
		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS						For Lab Use Only:	
		TAT if different from Below _____ <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/>						Walk-in Client: Lab Sampling:	
		1 day						Job / SDG No.:	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample	Specific Notes:	
SC_10 430431	5/15/19	0918	G	GW	2	Y	X X		
SC_11 430432	5/15/19	0958	G	GW	2	Y	X X		
SC_12 430433	5/15/19	1114	G	GW	2	Y	X X		
SC_12 duplicate 430434	5/15/19	1114	G	GW	2	Y	X X		
SC_13 430435	5/15/19	1222	G	GW	2	Y	X X		
SC_14 430436	5/15/19	1300	G	GW	2	Y	X X		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown									
Special Instructions/QC Requirements & Comments: Please be sure to use the listed method numbers.									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Custody Seal No.:		Cooler Temp. (°C): Obs'd. Corrd. Therm ID No.:			
Relinquished by: <i>John O Campa</i>		Company: C SU		Date/Time: 5/19/1330		Received by: <i>John O Campa</i> Company: <i>John O Campa</i>		Date/Time: 5/17-19/2010	
Relinquished by:		Company:		Date/Time:		Received by: Company:		Date/Time:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by: Company:		Date/Time:	

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for Months

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

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Login Sample Receipt Checklist

Client: Colorado Springs Utilities

Job Number: 160-34213-1

Login Number: 34213

List Source: Eurofins TestAmerica, St. Louis

List Number: 1

Creator: Korrinhizer, Micha L

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Colorado Springs Utilities
Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Qualifiers

Rad Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Colorado Springs Utilities
Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Colorado Springs Utilities

Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID	
160-34213-1	CC_1 430424	Water	05/14/19 11:47	05/17/19 09:20		1
160-34213-2	FC_1 430425	Water	05/14/19 09:30	05/17/19 09:20		2
160-34213-3	FC_2 430426	Water	05/14/19 10:13	05/17/19 09:20		3
160-34213-4	FC_3A 430427	Water	05/14/19 12:50	05/17/19 09:20		4
160-34213-5	FC_3A duplicate 430428	Water	05/14/19 12:50	05/17/19 09:20		5
160-34213-6	FC_3B 430429	Water	05/14/19 13:32	05/17/19 09:20		6

Client Sample Results

Client: Colorado Springs Utilities

Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Client Sample ID: CC_1 430424

Date Collected: 05/14/19 11:47

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-1

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.0666	U	0.0747	0.0749	1.00	0.121	pCi/L	06/07/19 07:24	08/12/19 10:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.6		40 - 110					06/07/19 07:24	08/12/19 10:53	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.595		0.387	0.391	1.00	0.593	pCi/L	06/07/19 08:17	07/19/19 12:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.6		40 - 110					06/07/19 08:17	07/19/19 12:28	1
Y Carrier	69.2		40 - 110					06/07/19 08:17	07/19/19 12:28	1

Client Sample ID: FC_1 430425

Date Collected: 05/14/19 09:30

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-2

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.118		0.0733	0.0741	1.00	0.0981	pCi/L	06/07/19 07:24	08/10/19 12:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					06/07/19 07:24	08/10/19 12:54	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.0821	U	0.289	0.289	1.00	0.506	pCi/L	06/07/19 08:17	07/19/19 12:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					06/07/19 08:17	07/19/19 12:28	1
Y Carrier	68.8		40 - 110					06/07/19 08:17	07/19/19 12:28	1

Client Sample ID: FC_2 430426

Date Collected: 05/14/19 10:13

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-3

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.191		0.0929	0.0945	1.00	0.121	pCi/L	06/07/19 07:24	08/10/19 12:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		40 - 110					06/07/19 07:24	08/10/19 12:54	1

Eurofins TestAmerica, St. Louis

Client Sample Results

Client: Colorado Springs Utilities
 Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Client Sample ID: FC_2 430426

Date Collected: 05/14/19 10:13

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-3

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.152	U	0.325	0.326	1.00	0.558	pCi/L	06/07/19 08:17	07/19/19 12:28	1
Carrier										
Ba Carrier	91.8		40 - 110					06/07/19 08:17	07/19/19 12:28	1
Y Carrier	64.3		40 - 110					06/07/19 08:17	07/19/19 12:28	1

Client Sample ID: FC_3A 430427

Date Collected: 05/14/19 12:50

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-4

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.0252	U	0.0556	0.0556	1.00	0.100	pCi/L	06/07/19 07:24	08/10/19 13:06	1
Carrier										
Ba Carrier	91.8		40 - 110					06/07/19 07:24	08/10/19 13:06	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.459	U	0.408	0.410	1.00	0.656	pCi/L	06/07/19 08:17	07/19/19 12:31	1
Carrier										
Ba Carrier	91.8		40 - 110					06/07/19 08:17	07/19/19 12:31	1
Y Carrier	60.6		40 - 110					06/07/19 08:17	07/19/19 12:31	1

Client Sample ID: FC_3A duplicate 430428

Date Collected: 05/14/19 12:50

Date Received: 05/17/19 09:20

Lab Sample ID: 160-34213-5

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.0395	U	0.0556	0.0557	1.00	0.0942	pCi/L	06/07/19 07:24	08/10/19 14:51	1
Carrier										
Ba Carrier	98.9		40 - 110					06/07/19 07:24	08/10/19 14:51	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.274	U	0.301	0.302	1.00	0.494	pCi/L	06/07/19 08:17	07/19/19 12:31	1
Carrier										
Ba Carrier	98.9		40 - 110					06/07/19 08:17	07/19/19 12:31	1

Eurofins TestAmerica, St. Louis

Client Sample Results

Client: Colorado Springs Utilities
 Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Client Sample ID: FC_3A duplicate 430428

Lab Sample ID: 160-34213-5

Matrix: Water

Date Collected: 05/14/19 12:50
 Date Received: 05/17/19 09:20

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	68.8		40 - 110	06/07/19 08:17	07/19/19 12:31	1

Client Sample ID: FC_3B 430429

Lab Sample ID: 160-34213-6

Matrix: Water

Date Collected: 05/14/19 13:32
 Date Received: 05/17/19 09:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Radium-226	0.000	U	0.0426	0.0426	1.00	0.0884	pCi/L	06/07/19 10:27	08/07/19 14:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.6		40 - 110					06/07/19 10:27	08/07/19 14:16	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Radium-228	0.171	U	0.303	0.304	1.00	0.512	pCi/L	06/07/19 11:36	07/10/19 11:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.6		40 - 110					06/07/19 11:36	07/10/19 11:50	1
Y Carrier	76.6		40 - 110					06/07/19 11:36	07/10/19 11:50	1

Eurofins TestAmerica, St. Louis

QC Sample Results

Client: Colorado Springs Utilities
 Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-431125/23-A

Matrix: Water

Analysis Batch: 439116

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 431125

Analyte	Result	MB MB U	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
				Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.03539	U		0.0538	0.0539	1.00	0.0926	pCi/L	06/07/19 07:24	08/10/19 14:51	1
Carrier		MB MB							Prepared	Analyzed	Dil Fac
Ba Carrier	101	%Yield	Qualifier	Limits					06/07/19 07:24	08/10/19 14:51	1
		40 - 110									

Lab Sample ID: LCS 160-431125/1-A

Matrix: Water

Analysis Batch: 439048

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 431125

Analyte	Spike Added	LCS Result	LCS Qual	Count	Total	RL	MDC	Unit	%Rec	%Rec.	Limits
				Uncert. (2σ+/-)	(2σ+/-)						
Radium-226	11.4	9.581		1.01	1.00	0.0926	pCi/L		84	75 - 125	
Carrier		LCS LCS									
Ba Carrier	91.2	%Yield	Qualifier	Limits							
		40 - 110									

Lab Sample ID: MB 160-431147/23-A

Matrix: Water

Analysis Batch: 438879

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 431147

Analyte	Result	MB MB U	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
				Uncert. (2σ+/-)	(2σ+/-)						
Radium-226	0.01897	U		0.0558	0.0559	1.00	0.103	pCi/L	06/07/19 10:27	08/08/19 11:37	1
Carrier		MB MB							Prepared	Analyzed	Dil Fac
Ba Carrier	92.7	%Yield	Qualifier	Limits					06/07/19 10:27	08/08/19 11:37	1
		40 - 110									

Lab Sample ID: LCS 160-431147/1-A

Matrix: Water

Analysis Batch: 438686

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 431147

Analyte	Spike Added	LCS Result	LCS Qual	Count	Total	RL	MDC	Unit	%Rec	%Rec.	Limits
				Uncert. (2σ+/-)	(2σ+/-)						
Radium-226	11.4	9.870		1.01	1.00	0.0948	pCi/L		87	75 - 125	
Carrier		LCS LCS									
Ba Carrier	104	%Yield	Qualifier	Limits							
		40 - 110									

Lab Sample ID: LCSD 160-431147/2-A

Matrix: Water

Analysis Batch: 438686

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 431147

Analyte	Spike Added	LCSD Result	LCSD Qual	Count	Total	RL	MDC	Unit	%Rec	%Rec.	RER	Limit
				Uncert. (2σ+/-)	(2σ+/-)							
Radium-226	11.4	11.00		1.13	1.00	0.113	pCi/L		97	75 - 125	0.53	1

Eurofins TestAmerica, St. Louis

QC Sample Results

Client: Colorado Springs Utilities
 Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-431147/2-A

Matrix: Water

Analysis Batch: 438686

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	89.3		40 - 110

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 431147

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-431128/23-A

Matrix: Water

Analysis Batch: 435708

Analyte	Result	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
				Uncert.	Uncert.						
Radium-228	-0.08967	U		0.295	0.295	1.00	0.540	pCi/L	06/07/19 08:17	07/19/19 12:31	1
Carrier											
Ba Carrier	101	MB	MB						Prepared	Analyzed	Dil Fac
Y Carrier	66.2	Qualifer	Limits	40 - 110					06/07/19 08:17	07/19/19 12:31	1
									06/07/19 08:17	07/19/19 12:31	1

Lab Sample ID: LCS 160-431128/1-A

Matrix: Water

Analysis Batch: 435710

Analyte	Spike	LCS	LCS	Count	Total	RL	MDC	Unit	%Rec.	Limits	
				Added	Uncert.						
Radium-228	9.01	Result	10.71		1.28	1.00	0.494	pCi/L	119	75 - 125	
Carrier											
Ba Carrier	91.2	MB	MB						Prepared	Analyzed	Dil Fac
Y Carrier	75.1	Qualifer	Limits	40 - 110					06/07/19 08:17	07/19/19 12:31	1
									06/07/19 08:17	07/19/19 12:31	1

Lab Sample ID: MB 160-431164/23-A

Matrix: Water

Analysis Batch: 434371

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Result	Uncert.						
Radium-228	-0.02471	U	0.253	0.253	1.00	0.457	pCi/L	06/07/19 11:36	07/10/19 11:59	1
Carrier										
Ba Carrier	92.7	MB	MB					Prepared	Analyzed	Dil Fac
Y Carrier	81.9	Qualifer	Limits	40 - 110				06/07/19 11:36	07/10/19 11:59	1
								06/07/19 11:36	07/10/19 11:59	1

Lab Sample ID: LCS 160-431164/1-A

Matrix: Water

Analysis Batch: 434381

Analyte	Spike	LCS	Count	Total	RL	MDC	Unit	%Rec.	Limits
			Added	Uncert.					
Radium-228	9.04	Result	8.830	1.05	1.00	0.412	pCi/L	98	75 - 125

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 431164

Eurofins TestAmerica, St. Louis

QC Sample Results

Client: Colorado Springs Utilities
 Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-431164/1-A

Matrix: Water

Analysis Batch: 434381

<i>Carrier</i>	<i>LCS</i>	<i>LCS</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>
Ba Carrier			104		40 - 110
Y Carrier			76.6		40 - 110

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 431164

Lab Sample ID: LCSD 160-431164/2-A

Matrix: Water

Analysis Batch: 434381

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 431164

<i>Analyte</i>		<i>Spike Added</i>	<i>LCSD Result</i>	<i>LCSD Qual</i>	<i>Total Uncert.</i>		<i>RL</i>	<i>MDC</i>	<i>Unit</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RER</i>	<i>RER Limit</i>
					(2 σ +/-)	(2 σ +/-)							
Radium-228		9.04	8.320		1.05	1.05	1.00	0.562	pCi/L	92	75 - 125	0.24	1

<i>Carrier</i>	<i>LCSD</i>	<i>LCSD</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>
Ba Carrier			89.3		40 - 110
Y Carrier			78.5		40 - 110

QC Association Summary

Client: Colorado Springs Utilities

Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Rad

Prep Batch: 431125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34213-1	CC_1 430424	Total/NA	Water	PrecSep-21	
160-34213-2	FC_1 430425	Total/NA	Water	PrecSep-21	
160-34213-3	FC_2 430426	Total/NA	Water	PrecSep-21	
160-34213-4	FC_3A 430427	Total/NA	Water	PrecSep-21	
160-34213-5	FC_3A duplicate 430428	Total/NA	Water	PrecSep-21	
MB 160-431125/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-431125/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 431128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34213-1	CC_1 430424	Total/NA	Water	PrecSep_0	
160-34213-2	FC_1 430425	Total/NA	Water	PrecSep_0	
160-34213-3	FC_2 430426	Total/NA	Water	PrecSep_0	
160-34213-4	FC_3A 430427	Total/NA	Water	PrecSep_0	
160-34213-5	FC_3A duplicate 430428	Total/NA	Water	PrecSep_0	
MB 160-431128/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-431128/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 431147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34213-6	FC_3B 430429	Total/NA	Water	PrecSep-21	
MB 160-431147/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-431147/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-431147/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 431164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-34213-6	FC_3B 430429	Total/NA	Water	PrecSep_0	
MB 160-431164/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-431164/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-431164/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Tracer/Carrier Summary

Client: Colorado Springs Utilities

Project/Site: Monitoring Wells_CCR Assessment

Job ID: 160-34213-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Percent Yield (Acceptance Limits)						
160-34213-1	CC_1 430424	76.6							
160-34213-2	FC_1 430425	94.1							
160-34213-3	FC_2 430426	91.8							
160-34213-4	FC_3A 430427	91.8							
160-34213-5	FC_3A duplicate 430428	98.9							
160-34213-6	FC_3B 430429	96.6							
LCS 160-431125/1-A	Lab Control Sample	91.2							
LCS 160-431147/1-A	Lab Control Sample	104							
LCSD 160-431147/2-A	Lab Control Sample Dup	89.3							
MB 160-431125/23-A	Method Blank	101							
MB 160-431147/23-A	Method Blank	92.7							

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

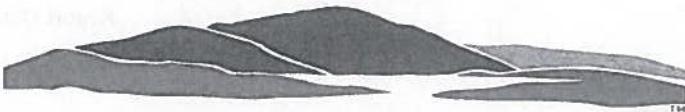
Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)	Percent Yield (Acceptance Limits)					
160-34213-1	CC_1 430424	76.6	69.2						
160-34213-2	FC_1 430425	94.1	68.8						
160-34213-3	FC_2 430426	91.8	64.3						
160-34213-4	FC_3A 430427	91.8	60.6						
160-34213-5	FC_3A duplicate 430428	98.9	68.8						
160-34213-6	FC_3B 430429	96.6	76.6						
LCS 160-431128/1-A	Lab Control Sample	91.2	75.1						
LCS 160-431164/1-A	Lab Control Sample	104	76.6						
LCSD 160-431164/2-A	Lab Control Sample Dup	89.3	78.5						
MB 160-431128/23-A	Method Blank	101	66.2						
MB 160-431164/23-A	Method Blank	92.7	81.9						

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Y Carrier = Y Carrier



Colorado Springs Utilities

It's how we're all connected

LABORATORY SERVICES

719-448-4800

www.csu.org

Report Date: December 27, 2019

This report contains test results for the following samples:

436493	24-Sep-2019 11:45	Crooked Canyon Well #1
436494	24-Sep-2019 09:39	Fort Carson Well #1
436495	24-Sep-2019 09:39	Fort Carson Well #1
436496	24-Sep-2019 10:11	Fort Carson Well #2
436497	24-Sep-2019 12:58	Fort Carson Well #3A
436498	24-Sep-2019 13:33	Fort Carson Well #3B
436499	24-Sep-2019 11:20	Equipment Blank
436500	25-Sep-2019 09:17	Sand Canyon Well #10
436501	25-Sep-2019 09:51	Sand Canyon Well #11
436502	25-Sep-2019 10:29	Sand Canyon Well #12
436503	25-Sep-2019 11:15	Sand Canyon Well #13
436504	25-Sep-2019 11:15	Sand Canyon Well #13
436505	25-Sep-2019 11:53	Sand Canyon Well #14
436506	25-Sep-2019 10:44	Equipment Blank

Colorado Springs Utilities Laboratory Services Section certifies that the test results meet all approved method
And Laboratory's Quality Assurance Plan requirements unless otherwise noted.

Comments: _____

Report Approved By: Wendy Asay
Wendy M. Asay - Environmental Specialist

12-27-19
Date

Sample Site: Crooked Canyon Well #1**Site Identity:** CC_1**Sample Number:** 436493**Date/Time Sampled:** 24-SEP-2019 11:45**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	33200	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.53	mg/L	0.10	
EPA_300_0	Chloride	1580	mg/L	0.25	D
	Sulfate	20700	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.005	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1050	ug/L	20.0	
	Calcium (Total Recoverable)	400000	ug/L	100	D
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	722	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	8.1	ug/L	1.0	D
	Barium (Total Recoverable)	4.1	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	3.6	ug/L	1.0	D
	Lead (Total Recoverable)	0.72	ug/L	0.50	D
	Molybdenum (Total Recoverable)	0.67	ug/L	0.20	D
	Selenium (Total Recoverable)	190	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	13.36	ft.		
+ SM_2510_B	Conductivity	26500	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	12.5	degrees C		
+ SM_4500HB	pH	7.0	SU	2.0	
* EPA_903_0	Radium 226	0.364	pCi/L	0.178	J
	Radium 226 (Dissolved)	0.326	pCi/L	0.104	J
* EPA_904_0	Radium 228	1.08	pCi/L	0.62	

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	0.581	pCi/L	0.498	J

Sample Site: Fort Carson Well #1**Site Identity:** FC_1**Sample Number:** 436494**Date/Time Sampled:** 24-SEP-2019 09:39**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	22200	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.20	mg/L	0.10	
EPA_300_0	Chloride	810	mg/L	0.25	D
	Sulfate	13300	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	960	ug/L	20.0	
	Calcium (Total Recoverable)	371000	ug/L	100	D
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	972	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	3.1	ug/L	1.0	D
	Barium (Total Recoverable)	7.3	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	4.1	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	1.6	ug/L	0.20	D
	Selenium (Total Recoverable)	17.3	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	14.90	ft.		
+ SM_2510_B	Conductivity	21400	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	13.2	degrees C		
+ SM_4500HB	pH	7.1	SU	2.0	
* EPA_903_0	Radium 226	0.647	pCi/L	0.147	J
	Radium 226 (Dissolved)	0.315	pCi/L	0.134	J
* EPA_904_0	Radium 228	0.981	pCi/L	0.655	J

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	0.780	pCi/L	0.491	J

Sample Site: Fort Carson Well #1
Site Identity: FC_1
Sample Number: 436495
Date/Time Sampled: 24-SEP-2019 09:39
Comp/Grab: GRAB
Sample Comments: FC_1 duplicate

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	22200	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.19	mg/L	0.10	
EPA_300_0	Chloride	812	mg/L	0.25	D
	Sulfate	13200	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	978	ug/L	20.0	
	Calcium (Total Recoverable)	366000	ug/L	100	D
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	967	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	2.8	ug/L	1.0	D
	Barium (Total Recoverable)	7.3	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	4.3	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	1.7	ug/L	0.20	D
	Selenium (Total Recoverable)	16.0	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	0.484	pCi/L	0.183	J
	Radium 226 (Dissolved)	0.405	pCi/L	0.111	J
* EPA_904_0	Radium 228	1.06	pCi/L	0.67	
	Radium 228 (Dissolved)	1.29	pCi/L	0.49	

Sample Site: Fort Carson Well #2
 Site Identity: FC_2
 Sample Number: 436496
 Date/Time Sampled: 24-SEP-2019 10:11
 Comp/Grab: GRAB
 Sample Comments:

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	10600	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.72	mg/L	0.10	
EPA_300_0	Chloride	116	mg/L	0.25	D
	Sulfate	7130	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.005	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	948	ug/L	20.0	
	Calcium (Total Recoverable)	374000	ug/L	100	D
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	274	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	<1.0	ug/L	1.0	D1/D
	Barium (Total Recoverable)	5.6	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D/D1
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	3.5	ug/L	1.0	D
	Lead (Total Recoverable)	1.4	ug/L	0.50	D
	Molybdenum (Total Recoverable)	2.1	ug/L	0.20	D
	Selenium (Total Recoverable)	37.6	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	13.71	ft.		
+	SM_2510_B	Conductivity	10000	umhos/cm	1
+	SM_2550_B	Temperature Centigrade (Field)	13.0	degrees C	
+	SM_4500HB	pH	7.3	SU	2.0
*	EPA_903_0	Radium 226	<0.182	pCi/L	0.182
		Radium 226 (Dissolved)	<0.089	pCi/L	0.089
*	EPA_904_0	Radium 228	<0.739	pCi/L	0.739
					U

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	<0.494	pCi/L	0.494	U

Sample Site: Fort Carson Well #3A

Site Identity: FC_3A

Sample Number: 436497

Date/Time Sampled: 24-SEP-2019 12:58

Comp/Grab: GRAB

Sample Comments:

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	9220	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.59	mg/L	0.10	
EPA_300_0	Chloride	127	mg/L	0.25	D
	Sulfate	5770	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.008	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1070	ug/L	20.0	
	Calcium (Total Recoverable)	379000	ug/L	100	D
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	303	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	1.6	ug/L	1.0	D
	Barium (Total Recoverable)	27.6	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D/D1
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	5.4	ug/L	1.0	D
	Lead (Total Recoverable)	1.8	ug/L	0.50	D
	Molybdenum (Total Recoverable)	6.6	ug/L	0.20	D
	Selenium (Total Recoverable)	39.9	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	18.34	ft.		
+	SM_2510_B	Conductivity	9080	umhos/cm	1
+	SM_2550_B	Temperature Centigrade (Field)	13.2	degrees C	
+	SM_4500HB	pH	7.4	SU	2.0
*	EPA_903_0	Radium 226	0.209	pCi/L	0.161
		Radium 226 (Dissolved)	<0.111	pCi/L	0.111
*	EPA_904_0	Radium 228	<0.678	pCi/L	0.678
					U

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	<0.494	pCi/L	0.494	U

Sample Site: Fort Carson Well #3B

Site Identity: FC_3B

Sample Number: 436498

Date/Time Sampled: 24-SEP-2019 13:33

Comp/Grab: GRAB

Sample Comments:

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	7860	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.72	mg/L	0.10	
EPA_300_0	Chloride	220	mg/L	0.25	D
	Sulfate	4440	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.005	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1420	ug/L	20.0	
	Calcium (Total Recoverable)	201000	ug/L	100	D
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	284	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	4.4	ug/L	1.0	D
	Barium (Total Recoverable)	26.8	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	8.9	ug/L	1.0	D
	Lead (Total Recoverable)	1.2	ug/L	0.50	D
	Molybdenum (Total Recoverable)	2.0	ug/L	0.20	D
	Selenium (Total Recoverable)	11.5	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	17.57	ft.		
+	SM_2510_B	Conductivity	9250	umhos/cm	1
+	SM_2550_B	Temperature Centigrade (Field)	13.1	degrees C	
+	SM_4500HB	pH	7.1	SU	2.0
*	EPA_903_0	Radium 226	0.359	pCi/L	0.147
		Radium 226 (Dissolved)	0.279	pCi/L	0.078
*	EPA_904_0	Radium 228	<0.662	pCi/L	0.662
					U

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	<0.350	pCi/L	0.350	U

Sample Site: Equipment Blank

Site Identity: EQUIP_BLK

Sample Number: 436499

Date/Time Sampled: 24-SEP-2019 11:20

Comp/Grab: GRAB

Sample Comments:

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	<10	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	<0.10	mg/L	0.10	
EPA_300_0	Chloride	<0.25	mg/L	0.25	
	Sulfate	<0.25	mg/L	0.25	
EPA_1631	Mercury (Total)	<0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	<20.0	ug/L	20.0	
	Calcium (Total Recoverable)	<100	ug/L	100	
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	<10.0	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	
	Arsenic (Total Recoverable)	<1.0	ug/L	1.0	
	Barium (Total Recoverable)	<0.20	ug/L	0.20	
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	
	Chromium (Total Recoverable)	<1.0	ug/L	1.0	
	Lead (Total Recoverable)	<0.50	ug/L	0.50	
	Molybdenum (Total Recoverable)	<0.20	ug/L	0.20	
	Selenium (Total Recoverable)	<1.0	ug/L	1.0	
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	

Sample Site: Sand Canyon Well #10**Site Identity:** SC_10**Sample Number:** 436500**Date/Time Sampled:** 25-SEP-2019 09:17**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	17500	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.85	mg/L	0.10	
EPA_300_0	Chloride	943	mg/L	0.25	D
	Sulfate	11300	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.010	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1200	ug/L	20.0	
	Calcium (Total Recoverable)	390000	ug/L	100	D
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	669	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	5.1	ug/L	1.0	D
	Barium (Total Recoverable)	12.4	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	4.9	ug/L	1.0	D
	Lead (Total Recoverable)	0.89	ug/L	0.50	D
	Molybdenum (Total Recoverable)	3.8	ug/L	0.20	D
	Selenium (Total Recoverable)	170	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	12.62	ft.		
+ SM_2510_B	Conductivity	17500	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	14.3	degrees C		
+ SM_4500HB	pH	7.3	SU	2.0	
* EPA_903_0	Radium 226	0.409	pCi/L	0.295	J
	Radium 226 (Dissolved)	<0.119	pCi/L	0.119	U
* EPA_904_0	Radium 228	<1.08	pCi/L	1.08	U

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	<0.375	pCi/L	0.375	U

Sample Site: Sand Canyon Well #11**Site Identity:** SC_11**Sample Number:** 436501**Date/Time Sampled:** 25-SEP-2019 09:51**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	14700	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	0.81	mg/L	0.10	
EPA_300_0	Chloride	1090	mg/L	0.25	D
	Sulfate	7930	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.009	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	2140	ug/L	20.0	
	Calcium (Total Recoverable)	402000	ug/L	100	D
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	538	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	5.0	ug/L	1.0	D
	Barium (Total Recoverable)	9.9	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	4.8	ug/L	1.0	D
	Lead (Total Recoverable)	0.59	ug/L	0.50	D
	Molybdenum (Total Recoverable)	2.8	ug/L	0.20	D
	Selenium (Total Recoverable)	169	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	9.50	ft.		
+ SM_2510_B	Conductivity	15100	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	13.8	degrees C		
+ SM_4500HB	pH	7.3	SU	2.0	
* EPA_903_0	Radium 226	<0.185	pCi/L	0.185	U
	Radium 226 (Dissolved)	<0.131	pCi/L	0.131	U
* EPA_904_0	Radium 228	<0.651	pCi/L	0.651	U

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	<0.571	pCi/L	0.571	U

Sample Site: Sand Canyon Well #12**Site Identity:** SC_12**Sample Number:** 436502**Date/Time Sampled:** 25-SEP-2019 10:29**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	16600	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	1.37	mg/L	0.10	
EPA_300_0	Chloride	316	mg/L	0.25	D
	Sulfate	10000	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.004	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	3940	ug/L	20.0	
	Calcium (Total Recoverable)	352000	ug/L	100	D/T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	464	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	<1.0	ug/L	1.0	D1/D
	Barium (Total Recoverable)	7.0	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	4.3	ug/L	1.0	D
	Lead (Total Recoverable)	0.56	ug/L	0.50	D
	Molybdenum (Total Recoverable)	4.1	ug/L	0.20	D
	Selenium (Total Recoverable)	13.4	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	10.89	ft.		
+	SM_2510_B	Conductivity	15900	umhos/cm	1
+	SM_2550_B	Temperature Centigrade (Field)	14.5	degrees C	
+	SM_4500HB	pH	7.3	SU	2.0
*	EPA_903_0	Radium 226	0.213	pCi/L	0.167
		Radium 226 (Dissolved)	<0.105	pCi/L	0.105
*	EPA_904_0	Radium 228	<0.721	pCi/L	0.721
					U

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	<0.387	pCi/L	0.387	U

Sample Site: Sand Canyon Well #13**Site Identity:** SC_13**Sample Number:** 436503**Date/Time Sampled:** 25-SEP-2019 11:15**Comp/Grab:** GRAB**Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	13300	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	1.22	mg/L	0.10	
EPA_300_0	Chloride	180	mg/L	0.25	D
	Sulfate	8280	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.004	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1620	ug/L	20.0	
	Calcium (Total Recoverable)	368000	ug/L	100	D/T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	353	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	1.1	ug/L	1.0	D
	Barium (Total Recoverable)	17.4	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	5.0	ug/L	1.0	D
	Lead (Total Recoverable)	0.82	ug/L	0.50	D
	Molybdenum (Total Recoverable)	3.1	ug/L	0.20	D
	Selenium (Total Recoverable)	14.6	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	11.41	ft.		
+ SM_2510_B	Conductivity	12300	umhos/cm	1	
+ SM_2550_B	Temperature Centigrade (Field)	13.2	degrees C		
+ SM_4500HB	pH	7.3	SU	2.0	
* EPA_903_0	Radium 226	0.183	pCi/L	0.174	J
	Radium 226 (Dissolved)	<0.112	pCi/L	0.112	U
* EPA_904_0	Radium 228	<0.688	pCi/L	0.688	U

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	<0.413	pCi/L	0.413	U

Sample Site: Sand Canyon Well #13**Site Identity:** SC_13**Sample Number:** 436504**Date/Time Sampled:** 25-SEP-2019 11:15**Comp/Grab:** GRAB**Sample Comments:** SC_13 duplicate

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	13500	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	1.23	mg/L	0.10	
EPA_300_0	Chloride	180	mg/L	0.25	D
	Sulfate	8350	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.004	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1620	ug/L	20.0	
	Calcium (Total Recoverable)	372000	ug/L	100	D/T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	356	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	<1.0	ug/L	1.0	D1/D
	Barium (Total Recoverable)	16.2	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	4.8	ug/L	1.0	D
	Lead (Total Recoverable)	0.83	ug/L	0.50	D
	Molybdenum (Total Recoverable)	3.1	ug/L	0.20	D
	Selenium (Total Recoverable)	15.4	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
* EPA_903_0	Radium 226	0.263	pCi/L	0.238	J
	Radium 226 (Dissolved)	<0.128	pCi/L	0.128	U
* EPA_904_0	Radium 228	<0.804	pCi/L	0.804	U
	Radium 228 (Dissolved)	<0.409	pCi/L	0.409	U

Sample Site: Sand Canyon Well #14

Site Identity: SC_14

Sample Number: 436505

Date/Time Sampled: 25-SEP-2019 11:53

Comp/Grab: GRAB

Sample Comments:

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	13000	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	1.08	mg/L	0.10	
EPA_300_0	Chloride	190	mg/L	0.25	D
	Sulfate	7890	mg/L	0.25	D
EPA_1631	Mercury (Total)	0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	1670	ug/L	20.0	
	Calcium (Total Recoverable)	359000	ug/L	100	D/T1
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	330	ug/L	10.0	D
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Arsenic (Total Recoverable)	<1.0	ug/L	1.0	D1/D
	Barium (Total Recoverable)	4.9	ug/L	0.20	D
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	D1/D
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Chromium (Total Recoverable)	4.1	ug/L	1.0	D
	Lead (Total Recoverable)	<0.50	ug/L	0.50	D1/D
	Molybdenum (Total Recoverable)	8.6	ug/L	0.20	D
	Selenium (Total Recoverable)	4.5	ug/L	1.0	D
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	D1/D
NA	Depth to Water	11.69	ft.		
+	SM_2510_B	Conductivity	12000	umhos/cm	1
+	SM_2550_B	Temperature Centigrade (Field)	11.6	degrees C	
+	SM_4500HB	pH	7.3	SU	2.0
*	EPA_903_0	Radium 226	<0.209	pCi/L	0.209
		Radium 226 (Dissolved)	<0.117	pCi/L	0.117
*	EPA_904_0	Radium 228	<0.591	pCi/L	0.591

Method	Analyte	Result	Units	RL	Qualifier
* EPA_904_0	Radium 228 (Dissolved)	<0.417	pCi/L	0.417	U

Sample Site: Equipment Blank**Site Identity: EQUIP_BLK****Sample Number: 436506****Date/Time Sampled: 25-SEP-2019 10:44****Comp/Grab: GRAB****Sample Comments:**

Method	Analyte	Result	Units	RL	Qualifier
SM_2540_C	Total Dissolved Solids	<10	mg/L	10	
~ SM_4500_FC	Fluoride (Total)	<0.10	mg/L	0.10	
EPA_300_0	Chloride	<0.25	mg/L	0.25	
	Sulfate	<0.25	mg/L	0.25	
EPA_1631	Mercury (Total)	<0.002	ug/L	0.002	
EPA_200_7	Boron (Total Recoverable)	<20.0	ug/L	20.0	
	Calcium (Total Recoverable)	<100	ug/L	100	
	Cobalt (Total Recoverable)	<5.00	ug/L	5.00	
	Lithium (Total Recoverable)	<10.0	ug/L	10.0	
EPA_200_8	Antimony (Total Recoverable)	<0.50	ug/L	0.50	
	Arsenic (Total Recoverable)	<1.0	ug/L	1.0	
	Barium (Total Recoverable)	<0.20	ug/L	0.20	
	Beryllium (Total Recoverable)	<0.20	ug/L	0.20	
	Cadmium (Total Recoverable)	<0.50	ug/L	0.50	
	Chromium (Total Recoverable)	<1.0	ug/L	1.0	
	Lead (Total Recoverable)	<0.50	ug/L	0.50	
	Molybdenum (Total Recoverable)	<0.20	ug/L	0.20	
	Selenium (Total Recoverable)	<1.0	ug/L	1.0	
	Thallium (Total Recoverable)	<0.50	ug/L	0.50	

Analysis Information:

- *: Analysis performed by an external contract laboratory.
- +: Analysis performed in the Field.
- ^: The Reporting Limit for the total analytes is less than two times the method Detection Limit (MDL).
The associated concentration value reported is an approximation of the analyte.
- #: Total value is a result of a calculation.
- ~: Sample was not distilled prior to analysis.
- **: This analysis is not listed in 40 CFR Part 136.

Data Qualifiers:

- D - Sample required dilution. The associated analyte concentration value reported has dilution factor applied. Reporting Limit does not reflect dilution factor.
- D1 - To minimize matrix effects, the sample required dilution. The result is below the Reporting Limit, but within the method defined instrument detection.
- J - Analysis confirms the presence of the analyte at a concentration which is less than the established Reporting Limit(RL), but greater than the Method Detection Limit(MDL). The associated concentration value reported is approx.
- T1 - The analyte concentration in the sample is disproportionate to the spike level. The performance of the method was shown to be in control.
- U - Data result was less than the method detection limit.



Colorado Springs Utilities
Laboratory Services
Grab Samples

CCR Landfill Groundwater Assessment

Sample Date: 9-24-19

QC Report Needed

ACTED

LOCATION	# Bottles	LIMS #	Sample Time	Comments											
				Please mark boxes that apply											
CC_1	10	436493	1145	6.88	12.5	26,500	13.36	X	X	X	X	X	X	X	X
FC_1	10	436494	939	7.08	13.2	21,400	14.90	X	X	X	X	X	X	X	F
FC_1 Duplicate	10	436495	939					X	X	X	X	X	X	X	F
FC_2	10	436496	1011	7.26	13.0	10,020	13.71	X	X	X	X	X	X	X	F
FC_3A	10	436497	1258	7.44	13.2	9,080	18.34	X	X	X	X	X	X	X	F
FC_3B	10	436498	1333	7.11	13.1	9,250	17.57	X	X	X	X	X	X	X	F
EQUIP_BLK	6	436499	1120					X	X	X	X	X	X		
Total # of Bottles	66							F	F	F	F	F	F		

F = Field Filtered

Additional Comments / Sample Rejections/ Actions

Sample Template: CCR_LAND
Project ID: CCR_LAND
Test Schedule: CCR_LAND

Date/Time 9-24-19 @ 1413

Signature/Print last name

Michael FETTER

Relinquished by

Michael FETTER

Received by

Michael Campbell 9-24-19 @ 1413

(A) 9/27/19 MF

CCR Landfill Groundwater Assessment

Sample Date: 9-25-19
QC Report Needed

Sampler: J. Hazzard

LOCATION	# Bottles	LIMS #	Sample Time	Comments											
				Please mark boxes that apply											
SC_10	10	436500	9/17	7.30	14.3	17,480	12.62	x	x	x	x	x	x	x	x
SC_11	10	436501	9/51	7.27	13.8	15,080	9.50	x	x	x	x	x	x	x	x
SC_12	10	436502	10/29	7.26	14.5	15,920	10.89	x	x	x	x	x	x	x	x
SC_13	10	436503	11/5	7.26	13.2	12,330	11.41	x	x	x	x	x	x	x	x
SC_13 Duplicate	10	436504	11/5					x	x	x	x	x	x	x	x
SC_14	10	436505	11/53	7.27	11.6	12,040	11.69	x	x	x	x	x	x	x	x
EQUIP_BLK	6	436506	10/44					x	x	x	x	x	x	x	x
Total # of Bottles	64														

F = Field Filtered

Additional Comments / Sample Rejections/ Actions
Sample Template: CCR_LAND Project ID: CCR_LAND Test Schedule: CCR_LAND

Date/Time

9-25-19 @ 1250
9-25-19 @ 1250

Signature/Print last name

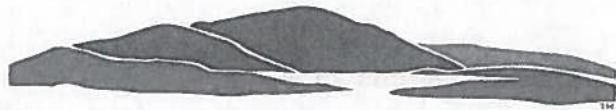
J. Hazzard

Relinquished by

McDonald Campbell

Received by

④ 9/27/19

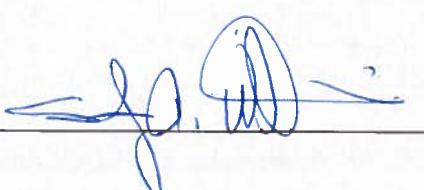


Colorado Springs Utilities

It's how we're all connected

Laboratory Services Section QC Report

**CCR Landfill Assessment
September 2019**

Quality Assurance Officer Approval:  Date: 12-27-2019

QC Narrative

This report is for sample numbers 436493 - 436506.

Total Dissolved Solids by Standard Methods 2540 C

There are no anomalies to report for this analysis.

Fluoride by Standard Methods 4500 F C

There are no anomalies to report for this analysis.

Anions by EPA Method 300.0

There are no anomalies to report for this analysis.

Mercury by EPA 1631 E

There are no anomalies to report for this analysis.

EPA 200.7

The matrix spike recovery for the sample batch is outside the established range for Total Recoverable Calcium. The performance of the method is shown to be in control. The recovery is matrix related, not method related. Associated samples 436502-436505 are qualified.

EPA 200.8

There are no anomalies to report for this analysis.

Method: Total Dissolved Solids by Standard Methods 2540 C

Batch Analysis date: 9/25/19

Sampled date: 9/24/19 for samples 436493 - 436499

Matrix QC performed on sample 436496

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
QCS	Total Dissolved Solids	103	86 - 109		
Duplicate	Total Dissolved Solids			1	<10

Method: Total Dissolved Solids by Standard Methods 2540 C

Batch Analysis date: 9/26/19

Sampled date: 9/25/19 for samples 436500 - 436506

Matrix QC performed on sample 436503

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
QCS	Total Dissolved Solids	96	86 - 109		
Duplicate	Total Dissolved Solids			1	<10

Method: Fluoride by Standard Methods 4500 F C

Batch Analysis date: 9/27/19

Sampled date: 9/24/19 for samples 436493 - 436499

Matrix QC performed on sample 436493

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Fluoride (Total)	104	90 - 110		
QCS	Fluoride (Total)	94	90 - 110		
MS	Fluoride (Total)	89	80 - 120		
MSD	Fluoride (Total)			<1	<20
QC Type	Analyte	Concentration	Limit		
LRB	Fluoride (Total)	<0.10 mg/L	0.10 mg/L		

Method: Fluoride by Standard Methods 4500 F C

Batch Analysis date: 9/27/19

Sampled date: 9/25/19 for samples 436500 - 436506

Matrix QC performed on sample 436502

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Fluoride (Total)	104	90 - 110		
QCS	Fluoride (Total)	94	90 - 110		
MS	Fluoride (Total)	97	80 - 120		
MSD	Fluoride (Total)			3	<20
QC Type	Analyte	Concentration	Limit		
LRB	Fluoride (Total)	<0.10 mg/L	0.10 mg/L		

Method: Anions by EPA Method 300.0

Batch Analysis date: 9/27/19 – 9/28/19, Sample 436503 FD analyzed for sulfate 09/30/19

Sampled date: 9/24/19 for samples 436493 - 436499

Sampled date: 9/25/19 for samples 436500 - 436506

Matrix QC performed on samples 436494 and 436503

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Chloride	106	50-150		
LFB	Chloride	100	90-110	<1	<20
FD	Chloride (436494)			<1	<20
MS	Chloride (436494)	92	80-120		
FD	Chloride (436503)			<1	<20
MS	Chloride (436503)	98	80-120		
MRL	Sulfate	87	50-150		
LFB	Sulfate	100	90-110	<1	<20
FD	Sulfate (436494)			<1	<20
MS	Sulfate (436494)	107	80-120		
FD	Sulfate (436503)			<1	<20
MS	Sulfate (436503)	98	80-120		

QC Type	Analyte	Concentration	Limit
LRB	Chloride	<0.25 mg/L	0.25 mg/L
LRB	Sulfate	<0.25 mg/L	0.25 mg/L

Method: Mercury by EPA 1631 E

Batch Analysis date: 10/8/19

Sampled date: 9/24/19 for samples 436493 - 436499

Sampled date: 9/25/19 for samples 439500 - 493506

Matrix QC performed on sample 436494 and 436503

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Mercury (Total)	95	50-150		
QCS	Mercury (Total)	106	77-123		
MS	Mercury (Total) (436494)	89	71-125		
MSD	Mercury (Total) (436494)			7	<24
MS	Mercury (Total) (436503)	81	71-125		
MSD	Mercury (Total) (436503)			3	<24

QC Type	Analyte	Concentration	Limit
LRB	Mercury (Total)	<0.5 ng/L	0.5 ng/L

Method: EPA 200.7

Batch Analysis date: 9/30/19 for Calcium and Lithium

Batch Analysis date: 10/1/19 for Boron and Cobalt

Digestion date: 9/26/19

Sampled date: 9/24/19 for samples 436493 - 436499

Sampled date: 9/25/19 for samples 436500 - 436506

Matrix QC performed on sample 436494 for samples 436496-436501 and 436506

Matrix QC performed on sample 436503 for samples 436502-436505

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Boron (Total Recoverable)	86	50-150		
LFB	Boron (Total Recoverable)	100	85-115		
MS	Boron (Total Recoverable) (436494)	117	70-130		
MSD	Boron (Total Recoverable) (436494)			2	<20
MS	Boron (Total Recoverable) (436503)	80	70-130		
MSD	Boron (Total Recoverable) (436503)			1	<20
MRL	Calcium (Total Recoverable)	101	50-150		
LFB	Calcium (Total Recoverable)	95	85-115		
MS	Calcium (Total Recoverable) (436494)	92	70-130		
MSD	Calcium (Total Recoverable) (436494)			<1	<20
MS	Calcium (Total Recoverable) (436503)	<u>*-15</u>	70-130		
MSD	Calcium (Total Recoverable) (436503)			2	<20
MRL	Cobalt (Total Recoverable)	104	50-150		
LFB	Cobalt (Total Recoverable)	102	85-115		
MS	Cobalt (Total Recoverable) (436494)	81	70-130		
MSD	Cobalt (Total Recoverable) (436494)			<1	<20
MS	Cobalt (Total Recoverable) (436503)	86	70-130		
MSD	Cobalt (Total Recoverable) (436503)			2	<20
MRL	Lithium (Total Recoverable)	97	50-150		
LFB	Lithium (Total Recoverable)	102	85-115		
MS	Lithium (Total Recoverable) (436494)	116	70-130		
MSD	Lithium (Total Recoverable) (436494)			1	<20
MS	Lithium (Total Recoverable) (436503)	106	70-130		
MSD	Lithium (Total Recoverable) (436503)			2	<20
QC Type	Analyte	Concentration	Limit		
LRB	Boron (Total Recoverable)	<7.08 ug/L	7.08 ug/L		
LRB	Calcium (Total Recoverable)	<25.3 ug/L	25.3 ug/L		
LRB	Cobalt (Total Recoverable)	<1.78 ug/L	1.78 ug/L		
LRB	Lithium (Total Recoverable)	<5.15 ug/L	5.15 ug/L		

*See Narrative

Method: EPA 200.8

Digestion date: 9/26/19

Batch Analysis date: 10/2/19

Sampled date: 9/24/19 for samples 436493 – 436499

Matrix QC performed on sample 436494

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Antimony (Total Recoverable)	106	50-150		
LFB	Antimony (Total Recoverable)	100	85-115		
MS	Antimony (Total Recoverable)	94	70-130		
MSD	Antimony (Total Recoverable)			<1	<20
MRL	Arsenic (Total Recoverable)	98	50-150		
LFB	Arsenic (Total Recoverable)	99	85-115		
MS	Arsenic (Total Recoverable)	90	70-130		
MSD	Arsenic (Total Recoverable)			4	<20
MRL	Barium (Total Recoverable)	98	50-150		
LFB	Barium (Total Recoverable)	103	85-115		
MS	Barium (Total Recoverable)	93	70-130		
MSD	Barium (Total Recoverable)			<1	<20
MRL	Beryllium (Total Recoverable)	95	50-150		
LFB	Beryllium (Total Recoverable)	103	85-115		
MS	Beryllium (Total Recoverable)	86	70-130		
MSD	Beryllium (Total Recoverable)			<1	<20
MRL	Cadmium (Total Recoverable)	100	50-150		
LFB	Cadmium (Total Recoverable)	102	85-115		
MS	Cadmium (Total Recoverable)	89	70-130		
MSD	Cadmium (Total Recoverable)			<1	<20
MRL	Chromium (Total Recoverable)	96	50-150		
LFB	Chromium (Total Recoverable)	110	85-115		
MS	Chromium (Total Recoverable)	88	70-130		
MSD	Chromium (Total Recoverable)			1	<20
MRL	Lead (Total Recoverable)	99	50-150		
LFB	Lead (Total Recoverable)	101	85-115		
MS	Lead (Total Recoverable)	90	70-130		
MSD	Lead (Total Recoverable)			<1	<20
MRL	Molybdenum (Total Recoverable)	102	50-150		
LFB	Molybdenum (Total Recoverable)	92	85-115		
MS	Molybdenum (Total Recoverable)	94	70-130		
MSD	Molybdenum (Total Recoverable)			1	<20
MRL	Selenium (Total Recoverable)	85	50-150		
LFB	Selenium (Total Recoverable)	101	85-115		
MS	Selenium (Total Recoverable)	88	70-130		
MSD	Selenium (Total Recoverable)			5	<20
MRL	Thallium (Total Recoverable)	99	50-150		
LFB	Thallium (Total Recoverable)	102	85-115		
MS	Thallium (Total Recoverable)	93	70-130		
MSD	Thallium (Total Recoverable)			1	<20
QC Type	Analyte	Concentration	Limit		
LRB	Antimony (Total Recoverable)	<0.176 ug/L	0.176 ug/L		
LRB	Arsenic (Total Recoverable)	<0.352 ug/L	0.352 ug/L		
LRB	Barium (Total Recoverable)	<0.044 ug/L	0.044 ug/L		

LRB	Beryllium (Total Recoverable)	<0.049 ug/L	0.049 ug/L
LRB	Cadmium (Total Recoverable)	<0.110 ug/L	0.110 ug/L
LRB	Chromium (Total Recoverable)	<0.375 ug/L	0.375 ug/L
LRB	Lead (Total Recoverable)	<0.066 ug/L	0.066 ug/L
LRB	Molybdenum (Total Recoverable)	<0.031 ug/L	0.031 ug/L
LRB	Selenium (Total Recoverable)	<0.352 ug/L	0.352 ug/L
LRB	Thallium (Total Recoverable)	<0.139 ug/L	0.139 ug/L

Method: EPA 200.8

Digestion date: 9/26/19

Batch Analysis date: 10/2/19

Sampled date: 9/25/19 for samples 436500 – 436506

Matrix QC performed on sample 436503

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Antimony (Total Recoverable)	107	50-150		
LFB	Antimony (Total Recoverable)	100	85-115		
MS	Antimony (Total Recoverable)	88	70-130		
MSD	Antimony (Total Recoverable)			13	<20
MRL	Arsenic (Total Recoverable)	98	50-150		
LFB	Arsenic (Total Recoverable)	98	85-115		
MS	Arsenic (Total Recoverable)	81	70-130		
MSD	Arsenic (Total Recoverable)			6	<20
MRL	Barium (Total Recoverable)	98	50-150		
LFB	Barium (Total Recoverable)	102	85-115		
MS	Barium (Total Recoverable)	73	70-130		
MSD	Barium (Total Recoverable)			4	<20
MRL	Beryllium (Total Recoverable)	118	50-150		
LFB	Beryllium (Total Recoverable)	101	85-115		
MS	Beryllium (Total Recoverable)	84	70-130		
MSD	Beryllium (Total Recoverable)			12	<20
MRL	Cadmium (Total Recoverable)	100	50-150		
LFB	Cadmium (Total Recoverable)	101	85-115		
MS	Cadmium (Total Recoverable)	82	70-130		
MSD	Cadmium (Total Recoverable)			10	<20
MRL	Chromium (Total Recoverable)	119	50-150		
LFB	Chromium (Total Recoverable)	110	85-115		
MS	Chromium (Total Recoverable)	87	70-130		
MSD	Chromium (Total Recoverable)			3	<20
MRL	Lead (Total Recoverable)	99	50-150		
LFB	Lead (Total Recoverable)	100	85-115		
MS	Lead (Total Recoverable)	86	70-130		
MSD	Lead (Total Recoverable)			13	<20
MRL	Molybdenum (Total Recoverable)	102	50-150		
LFB	Molybdenum (Total Recoverable)	102	85-115		
MS	Molybdenum (Total Recoverable)	87	70-130		
MSD	Molybdenum (Total Recoverable)			14	<20
MRL	Selenium (Total Recoverable)	98	50-150		
LFB	Selenium (Total Recoverable)	93	85-115		

MS	Selenium (Total Recoverable)	99	70-130		
MSD	Selenium (Total Recoverable)			10	<20
MRL	Thallium (Total Recoverable)	99	50-150		
LFB	Thallium (Total Recoverable)	100	85-115		
MS	Thallium (Total Recoverable)	90	70-130		
MSD	Thallium (Total Recoverable)			14	<20
QC Type	Analyte	Concentration	Limit		
LRB	Antimony (Total Recoverable)	<0.176 ug/L	0.176 ug/L		
LRB	Arsenic (Total Recoverable)	<0.352 ug/L	0.352 ug/L		
LRB	Barium (Total Recoverable)	<0.044 ug/L	0.044 ug/L		
LRB	Beryllium (Total Recoverable)	<0.049 ug/L	0.049 ug/L		
LRB	Cadmium (Total Recoverable)	<0.110 ug/L	0.110 ug/L		
LRB	Chromium (Total Recoverable)	<0.375 ug/L	0.375 ug/L		
LRB	Lead (Total Recoverable)	<0.066 ug/L	0.066 ug/L		
LRB	Molybdenum (Total Recoverable)	<0.031 ug/L	0.031 ug/L		
LRB	Selenium (Total Recoverable)	<0.352 ug/L	0.352 ug/L		
LRB	Thallium (Total Recoverable)	<0.139 ug/L	0.139 ug/L		

FD – Field Duplicate

LFB – Laboratory Fortified Blank

LRB – Laboratory Reagent Blank (Method Blank)

QCS – Quality Control Sample

MRL – Minimum Reporting Limit (Verification)

MS – Matrix Spike

MSD – Matrix Spike Duplicate

Underline – Data was outside the limit



Environment Testing TestAmerica

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-35811-1
Client Project/Site: Coal Combustion Rule
Revision: 1

For:
Colorado Springs Utilities
Laboratory Services Section
701 E. Las Vegas St., MC 1465
Colorado Springs, Colorado 80903

Attn: Ms. Wendy Asay

Authorized for release by:
1/9/2020 5:51:06 PM
Chenise Lambert-Sykes, Project Manager I
(314)298-8566
chenise.lambert-sykes@testamericainc.com

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Expert

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	5
Receipt Checklists	6
Definitions/Glossary	7
Method Summary	11
Sample Summary	12
Client Sample Results	13
QC Sample Results	19
QC Association Summary	21
Tracer Carrier Summary	22

Case Narrative

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Job ID: 160-35811-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Colorado Springs Utilities

Project: Coal Combustion Rule

Report Number: 160-35811-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

Rev1: This report has been revised to include a corrected COC for the Total analysis request per client request.

RECEIPT

The samples were received on 09/27/2019; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 19.0° C, 19.0° C and 19.0° C.

Receipt Exceptions

Case Narrative

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Job ID: 160-35811-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. COC has documented that every sample has two containers but what was received is four containers per sample.

Methods 903.0, 904.0, PrecSep-21, PrecSep_0: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of ~7 : 436496 FC_2 (160-35811-4), 436497 FC_3A (160-35811-5) and 436498 FC_3B (160-35811-6). Samples 436496 FC_2, 436497 FC_3A, and 436498 FC_3B received with improper pH, 6.0 ml of HNO₃ was added to one of four containers and a pH of <2 was achieved.

RADIUM-226 (GFPC)

Samples 436493 CC_1 (160-35811-1), 436494 FC_1 (160-35811-2), 436495 FC_1 DUPLICATE (160-35811-3), 436496 FC_2 (160-35811-4), 436497 FC_3A (160-35811-5), 436498 FC_3B (160-35811-6), 436500 SC_10 (160-35811-7), 436501 SC_11 (160-35811-8), 436502 SC_12 (160-35811-9), 436503 SC_13 (160-35811-10), 436504 SC_13 DUPLICATE (160-35811-11) and 436505 SC_14 (160-35811-12) were analyzed for Radium-226 (GFPC) in accordance with EPA Method 903.0. The samples were prepared on 10/01/2019 and analyzed on 10/23/2019.

Prep Batch: 160-444735

The following samples had yellow discoloration: 436493 CC_1 (160-35811-1), 436494 FC_1 (160-35811-2), 436495 FC_1 DUPLICATE (160-35811-3), 436497 FC_3A (160-35811-5), 436498 FC_3B (160-35811-6), 436500 SC_10 (160-35811-7), 436501 SC_11 (160-35811-8) and 436502 SC_12 (160-35811-9). Sample 440-248597-D-1 also had yellow discoloration but was reduced. Samples 160-35811-D-5, 160-35811-D-6, 160-35811-D-8, 160-35811-D-9 had cloudy discoloration. Sample 160-35811-D-7 also had cloudy discoloration but was reduced.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-228 (GFPC)

Samples 436493 CC_1 (160-35811-1), 436494 FC_1 (160-35811-2), 436495 FC_1 DUPLICATE (160-35811-3), 436496 FC_2 (160-35811-4), 436497 FC_3A (160-35811-5), 436498 FC_3B (160-35811-6), 436500 SC_10 (160-35811-7), 436501 SC_11 (160-35811-8), 436502 SC_12 (160-35811-9), 436503 SC_13 (160-35811-10), 436504 SC_13 DUPLICATE (160-35811-11) and 436505 SC_14 (160-35811-12) were analyzed for Radium-228 (GFPC) in accordance with EPA 904. The samples were prepared on 11/01/2019 and analyzed on 11/06/2019.

Prep Batch: 160-444737

The following samples had yellow discoloration: 436493 CC_1 (160-35811-1), 436494 FC_1 (160-35811-2), 436495 FC_1 DUPLICATE (160-35811-3), 436497 FC_3A (160-35811-5), 436498 FC_3B (160-35811-6), 436500 SC_10 (160-35811-7), 436501 SC_11 (160-35811-8) and 436502 SC_12 (160-35811-9). Sample 440-248597-D-1 also had yellow discoloration but was reduced. Samples 160-35811-D-5, 160-35811-D-6, 160-35811-D-8, 160-35811-D-9 had cloudy discoloration. Sample 160-35811-D-7 also had cloudy discoloration but was reduced.

The laboratory control sample (LCS) is above the upper control limit 135%, and all other QC is within acceptance criteria. The samples were reanalyzed in prep batch 160-448552 per client request, and data from that batch has been reported with this narrative. (440-248597-F-4-C) and (440-248597-C-4-E DU).

Prep Batch: 160-448552

The following samples had discoloration: 436493 CC_1 (160-35811-1), 436494 FC_1 (160-35811-2), 436495 FC_1 DUPLICATE (160-35811-3), 436497 FC_3A (160-35811-5), 436498 FC_3B (160-35811-6), 436500 SC_10 (160-35811-7), 436501 SC_11 (160-35811-8), 436502 SC_12 (160-35811-9), 436503 SC_13 (160-35811-10) and 436504 SC_13 DUPLICATE (160-35811-11). Samples 160-35811-C-1, 160-35811-C-2, 160-35811-C-3, 160-35811-C-8, 440-248597-D-5 and 440-248597-D-6 had light yellow discoloration. Samples 160-35811-C-5, 160-35811-D-6 and 160-35811-C-9 had white cloudy discoloration. Sample 160-35811-C-7 was also reduced due to cloudy yellow discoloration.

Insufficient sample volume was available to perform a sample duplicate for the following samples: 436493 CC_1 (160-35811-1), 436494 FC_1 (160-35811-2), 436495 FC_1 DUPLICATE (160-35811-3), 436496 FC_2 (160-35811-4), 436497 FC_3A (160-35811-5), 436498 FC_3B (160-35811-6), 436500 SC_10 (160-35811-7), 436501 SC_11 (160-35811-8), 436502 SC_12 (160-35811-9), 436503 SC_13 (160-35811-10), 436504 SC_13 DUPLICATE (160-35811-11) and 436505 SC_14 (160-35811-12). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision. Samples 160-35811-C-1, 160-35811-C-2,

Case Narrative

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Job ID: 160-35811-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

160-35811-C-3, 160-35811-C-4, 160-35811-C-5, 160-35811-C-6, 160-35811-C-7, 160-35811-C-8, 160-35811-C-9, 160-35811-C-10, 160-35811-C-11, 160-35811-C-12 were prepared at a reduced aliquot due to insufficient volume for re-prep.

The detection goal was not met for the following sample due to the presence of matrix interferences: 436500 SC_10 (160-35811-7). Analytical results are reported with the detection limit achieved.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Chain of Custody Record

Earth City, MO 63045-1205
phone 314.298.8566 fax 314.298.8757

Regulatory Program:

DW

NPDES

RCRA

Other:

Project Manager: Wendy Asay

Tel/Fax: 719-668-4603

Analysis Turnaround Time

CALENDAR DAYS WORKING DAYS

TAT if different from Below _____

2 weeks

1 week

2 days

1 day

Site:

Project Name: Coal Combustion Rule

P O #

Client Contact

Colorado Springs Utilities

701 E. Las Vegas St.

Colorado Springs, CO 80903

Phone

(719) 668-4603

FAX

(xxx) xxx-xxxx

Site:

Project Name: Coal Combustion Rule

P O #

Project Manager: Wendy Asay

Tel/Fax: 719-668-4603

Analysis Turnaround Time

CALENDAR DAYS WORKING DAYS

TAT if different from Below _____

2 weeks

1 week

2 days

1 day

Site:

Project Name: Coal Combustion Rule

P O #

Site Contact:

Lab Contact:

Site Contact:

Carrier:

Date:

COC No.:

of _____ COCs

Sampler:

For Lab Use Only:

Walk-in Client:

Lab Sampling:

Job / SDG No.:

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

Preferred Sample / MSD (Y / N)

Sample Specific Notes:

160-35811 Chain of Custody

Barcode:

Total Radium 228, EPA 904.0

Total Radium 226, EPA 903.1

Petroform MS / MSD (Y / N)

TestAmerica St. Louis
13715 Rider Trail North

Chain of Custody Record

TestAmerica
THE LEAD IN ENVIRONMENTAL TESTING

Earth City, MO 63045-1205
phone 314.298.8566 fax 314.298.8757

Regulatory Program: DW NPOES RCRA Other:

Client Contact		Project Manager: Wendy Asay	Site Contact:	Date:
Colorado Springs Utilities	Tel/Fax: 719-668-4603	Lab Contact:	Carrier:	COC No:
701 E Las Vegas St.				<input type="checkbox"/> _____ of _____ COCs
Colorado Springs, CO 80903				Sampler:
(719) 668-4603				<input type="checkbox"/> For Lab Use Only:
(xxx) xxx-xxxx	Phone			Walk-in Client
	FAX			Lab Sampling
Project Name: Coal Combustion Rule				
Site:				Job / SDG No:
PO #				

Analysis Turnaround Time		Site Contact:	Date:
<input checked="" type="checkbox"/> CALENDAR DAYS	WORKING DAYS	Carrier:	
TAT if different from Below			
<input type="checkbox"/> 2 weeks			
<input type="checkbox"/> 1 week			
<input type="checkbox"/> 2 days			
<input type="checkbox"/> 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter/ed Sample (Y/N)	Perform MS / MSD (Y/N)	Dissolved Radium 226, EPA 903.1	Dissolved Radium 228, EPA 904.0	160-35811 Chain of Custody
436493 CC_1	9/24/19	1145	G	GW	2	Y	X	X	X	
436494 FC_1	9/24/19	0939	G	GW	2	Y	X	X	X	
436495 FC_1 duplicate	9/24/19	0939	G	GW	2	Y	X	X	X	
436496 FC_2	9/24/19	1011	G	GW	2	Y	X	X	X	
436497 FC_3A	9/24/19	1258	G	GW	2	Y	X	X	X	
436498 FC_3B	9/24/19	1333	G	GW	2	Y	X	X	X	
436500 SC_10	9/25/19	0917	G	GW	2	Y	X	X	X	
436501 SC_11	9/25/19	0951	G	GW	2	Y	X	X	X	
436502 SC_12	9/25/19	1029	G	GW	2	Y	X	X	X	
436503 SC_13	9/25/19	1115	G	GW	2	Y	X	X	X	
436504 SC_13 duplicate	9/25/19	1115	G	GW	2	Y	X	X	X	
436505 SC_14	9/25/19	1153	G	GW	2	Y	X	X	X	

Preservation Used: 1=Ice; 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments: Please be sure to use the listed method numbers.

 Return to Client Disposal by Lab Archive for Months

Custody Seal intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.: Company: Company:	Date/Time: Received by: Date/Time: Received by: Date/Time: Received by:	Cooler Temp. (°C): Obs'd: Company: Company: Company: Company: Company:	Carrier: Company: Company: Company: Company: Company:	Therm ID No: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:
<i>M. Fred Randall</i>	9/26/19 11:41 AM				

1 2 3 4 5 6 7 8 9 10 11 12

TestAmerica St. Louis
13715 Rider Trail North

Chain of Custody Record

TestAmerica

Earth City, MO 63045-1205
phone 314.298.8566 fax 314.298.8757

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: DW NPDES RCRA Other:

Client Contact

Colorado Springs Utilities	Project Manager: Wendy Asay	Tel/Fax: 719-568-4803
701 E. Las Vegas St.	Analysis Turnaround Time	
Colorado Springs, CO 80903	CALENDAR DAYS	WORKING DAYS
(719) 568-4603	TAT if offlagent from Below	
(xxx) xxx-xxxx	2 weeks	
Project Name: Coal Combustion Rule	1 week	
Site:	2 days	
P O #	1 day	

Sample Identification

	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:
436493 CC_1	9/24/19	1145	G	GW	2	
436494 FC_1	9/24/19	0939	G	GW	2	
436495 FC_1 duplicate	9/24/19	0939	G	GW	2	
436496 FC_2	9/24/19	1011	G	GW	2	
436497 FC_3A	9/24/19	1258	G	GW	2	
436498 FC_3B	9/24/19	1333	G	GW	2	
436500 SC_10	9/25/19	0917	G	GW	2	
436501 SC_11	9/25/19	0951	G	GW	2	
436502 SC_12	9/25/19	1029	C	GW	2	
436503 SC_13	9/25/19	1115	G	GW	2	
436504 SC_13 duplicate	9/25/19	1115	G	GW	2	
436505 SC_14	9/25/19	1153	G	GW	2	

Preservation Used: 1=Acetone; 2=HCl; 3= H₂SO₄; 4=HNO₃; 5=NaOH; 6= Other _____

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard

Flammable

Corrosive

Unknown

Poison B

Inhalation

Skin Irritant

Eye Irritant

Reinforced by _____

Reinforced by _____

Reinforced by _____

Comments: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

3

1-3-20

1

3

1

3

1

3

1

3

1

3

1

3

1

3

1

3

1

3

1

3

1

10

11

12

<input type="checkbox"/> Relinquished by _____	Custody Seal No.: <input type="text"/> Company: <i>SV</i>	Cooler Temp. (°C): <input type="text"/> Obs'd: <input type="checkbox"/> Received by: <i>John Johnson</i>	Carrier: <input type="checkbox"/> Corrid: <input type="checkbox"/> Company: <i>COPY</i>	Therm ID No.: <input type="text"/> Date/Time: <i>9/27/19/0555</i>
<input type="checkbox"/> Relinquished by _____	Comments: <i>all samples</i>	Date/Time: <input type="text"/>	Received by: <i>John Johnson</i>	Date/Time: <input type="text"/>
<input type="checkbox"/> Relinquished by _____	Comments: <i>all samples</i>	Date/Time: <input type="text"/>	Received in Laboratory by: <i>John Johnson</i>	Date/Time: <input type="text"/>

Login Sample Receipt Checklist

Client: Colorado Springs Utilities

Job Number: 160-35811-1

Login Number: 35811

List Source: Eurofins TestAmerica, St. Louis

List Number: 1

Creator: Press, Nicholas B

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Qualifiers

Rad Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID	
160-35811-1	436493 CC_1	Water	09/24/19 11:45	09/27/19 08:55		1
160-35811-2	436494 FC_1	Water	09/24/19 09:39	09/27/19 08:55		2
160-35811-3	436495 FC_1 DUPLICATE	Water	09/24/19 09:39	09/27/19 08:55		3
160-35811-4	436496 FC_2	Water	09/24/19 10:11	09/27/19 08:55		4
160-35811-5	436497 FC_3A	Water	09/24/19 12:58	09/27/19 08:55		5
160-35811-6	436498 FC_3B	Water	09/24/19 13:33	09/27/19 08:55		6
160-35811-7	436500 SC_10	Water	09/25/19 09:17	09/27/19 08:55		7
160-35811-8	436501 SC_11	Water	09/25/19 09:51	09/27/19 08:55		8
160-35811-9	436502 SC_12	Water	09/25/19 10:29	09/27/19 08:55		9
160-35811-10	436503 SC_13	Water	09/25/19 11:15	09/27/19 08:55		10
160-35811-11	436504 SC_13 DUPLICATE	Water	09/25/19 11:15	09/27/19 08:55		11
160-35811-12	436505 SC_14	Water	09/25/19 11:53	09/27/19 08:55		12

Eurofins TestAmerica, St. Louis

Client Sample Results

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Client Sample ID: 436493 CC_1

Date Collected: 09/24/19 11:45

Date Received: 09/27/19 08:55

Lab Sample ID: 160-35811-1

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.364		0.152	0.156	1.00	0.178	pCi/L	10/01/19 17:10	10/23/19 20:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	63.8		40 - 110					10/01/19 17:10	10/23/19 20:54	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.08		0.447	0.458	1.00	0.618	pCi/L	11/01/19 13:23	11/06/19 12:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	77.8		40 - 110					11/01/19 13:23	11/06/19 12:42	1
Y Carrier	81.1		40 - 110					11/01/19 13:23	11/06/19 12:42	1

Client Sample ID: 436494 FC_1

Date Collected: 09/24/19 09:39

Date Received: 09/27/19 08:55

Lab Sample ID: 160-35811-2

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.647		0.182	0.191	1.00	0.147	pCi/L	10/01/19 17:10	10/23/19 20:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	62.4		40 - 110					10/01/19 17:10	10/23/19 20:54	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.981		0.455	0.464	1.00	0.655	pCi/L	11/01/19 13:23	11/06/19 12:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.5		40 - 110					11/01/19 13:23	11/06/19 12:42	1
Y Carrier	82.6		40 - 110					11/01/19 13:23	11/06/19 12:42	1

Client Sample ID: 436495 FC_1 DUPLICATE

Date Collected: 09/24/19 09:39

Date Received: 09/27/19 08:55

Lab Sample ID: 160-35811-3

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.484		0.168	0.174	1.00	0.183	pCi/L	10/01/19 17:10	10/23/19 20:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	64.1		40 - 110					10/01/19 17:10	10/23/19 20:54	1

Eurofins TestAmerica, St. Louis

Client Sample Results

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Client Sample ID: 436495 FC_1 DUPLICATE

Date Collected: 09/24/19 09:39

Date Received: 09/27/19 08:55

Lab Sample ID: 160-35811-3

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.06		0.458	0.469	1.00	0.667	pCi/L	11/01/19 13:23	11/06/19 12:42	1
Carrier										
Ba Carrier	89.2		40 - 110					11/01/19 13:23	11/06/19 12:42	1
Y Carrier	80.4		40 - 110					11/01/19 13:23	11/06/19 12:42	1

Client Sample ID: 436496 FC_2

Date Collected: 09/24/19 10:11

Date Received: 09/27/19 08:55

Lab Sample ID: 160-35811-4

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.141	U	0.120	0.121	1.00	0.182	pCi/L	10/01/19 17:10	10/23/19 20:54	1
Carrier										
Ba Carrier	64.4		40 - 110					10/01/19 17:10	10/23/19 20:54	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.230	U	0.436	0.437	1.00	0.739	pCi/L	11/01/19 13:23	11/06/19 12:45	1
Carrier										
Ba Carrier	88.6		40 - 110					11/01/19 13:23	11/06/19 12:45	1
Y Carrier	80.0		40 - 110					11/01/19 13:23	11/06/19 12:45	1

Client Sample ID: 436497 FC_3A

Date Collected: 09/24/19 12:58

Date Received: 09/27/19 08:55

Lab Sample ID: 160-35811-5

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.209		0.121	0.123	1.00	0.161	pCi/L	10/01/19 17:10	10/23/19 20:54	1
Carrier										
Ba Carrier	72.0		40 - 110					10/01/19 17:10	10/23/19 20:54	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.438	U	0.418	0.420	1.00	0.678	pCi/L	11/01/19 13:23	11/06/19 12:45	1
Carrier										
Ba Carrier	91.3		40 - 110					11/01/19 13:23	11/06/19 12:45	1

Eurofins TestAmerica, St. Louis

Client Sample Results

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Client Sample ID: 436497 FC_3A

Date Collected: 09/24/19 12:58
Date Received: 09/27/19 08:55

Lab Sample ID: 160-35811-5

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits
Y Carrier	80.7		40 - 110

Prepared	Analyzed	Dil Fac
11/01/19 13:23	11/06/19 12:45	1

Client Sample ID: 436498 FC_3B

Date Collected: 09/24/19 13:33
Date Received: 09/27/19 08:55

Lab Sample ID: 160-35811-6

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	
			Uncert. (2σ+/-)	Uncert. (2σ+/-)				
Radium-226	0.359		0.133	0.137	1.00	0.147	pCi/L	
Carrier	%Yield	Qualifier	Limits					
Ba Carrier	81.6		40 - 110					

Prepared	Analyzed	Dil Fac
10/01/19 17:10	10/23/19 20:55	1
Carrier		
Prepared		
10/01/19 17:10		10/23/19 20:55
		1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	
			Uncert. (2σ+/-)	Uncert. (2σ+/-)				
Radium-228	0.427	U	0.408	0.410	1.00	0.662	pCi/L	
Carrier	%Yield	Qualifier	Limits					
Ba Carrier	90.4		40 - 110					
Y Carrier	83.4		40 - 110					

Prepared	Analyzed	Dil Fac
11/01/19 13:23	11/06/19 12:46	1
Carrier		
11/01/19 13:23		11/06/19 12:46
		1

Client Sample ID: 436500 SC_10

Date Collected: 09/25/19 09:17
Date Received: 09/27/19 08:55

Lab Sample ID: 160-35811-7

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	
			Uncert. (2σ+/-)	Uncert. (2σ+/-)				
Radium-226	0.409		0.219	0.222	1.00	0.295	pCi/L	
Carrier	%Yield	Qualifier	Limits					
Ba Carrier	60.5		40 - 110					

Prepared	Analyzed	Dil Fac
10/01/19 17:10	10/23/19 20:55	1
Carrier		
10/01/19 17:10		10/23/19 20:55
		1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	
			Uncert. (2σ+/-)	Uncert. (2σ+/-)				
Radium-228	0.321	U G	0.635	0.636	1.00	1.08	pCi/L	
Carrier	%Yield	Qualifier	Limits					
Ba Carrier	62.2		40 - 110					
Y Carrier	80.7		40 - 110					

Prepared	Analyzed	Dil Fac
11/01/19 13:23	11/06/19 12:46	1
Carrier		
11/01/19 13:23		11/06/19 12:46
		1

Eurofins TestAmerica, St. Louis

Client Sample Results

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Client Sample ID: 436501 SC_11

Lab Sample ID: 160-35811-8

Matrix: Water

Date Collected: 09/25/19 09:51

Date Received: 09/27/19 08:55

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.121	U	0.118	0.118	1.00	0.185	pCi/L	10/01/19 17:10	10/23/19 20:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	68.6		40 - 110					10/01/19 17:10	10/23/19 20:55	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.0532	U	0.370	0.371	1.00	0.651	pCi/L	11/01/19 13:23	11/06/19 12:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		40 - 110					11/01/19 13:23	11/06/19 12:46	1
Y Carrier	80.0		40 - 110					11/01/19 13:23	11/06/19 12:46	1

Client Sample ID: 436502 SC_12

Lab Sample ID: 160-35811-9

Matrix: Water

Date Collected: 09/25/19 10:29

Date Received: 09/27/19 08:55

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.213	U	0.124	0.125	1.00	0.167	pCi/L	10/01/19 17:10	10/23/19 20:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.7		40 - 110					10/01/19 17:10	10/23/19 20:55	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.249	U	0.427	0.428	1.00	0.721	pCi/L	11/01/19 13:23	11/06/19 12:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.6		40 - 110					11/01/19 13:23	11/06/19 12:46	1
Y Carrier	78.1		40 - 110					11/01/19 13:23	11/06/19 12:46	1

Client Sample ID: 436503 SC_13

Lab Sample ID: 160-35811-10

Matrix: Water

Date Collected: 09/25/19 11:15

Date Received: 09/27/19 08:55

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.183	U	0.123	0.124	1.00	0.174	pCi/L	10/01/19 17:10	10/23/19 22:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	66.1		40 - 110					10/01/19 17:10	10/23/19 22:48	1

Eurofins TestAmerica, St. Louis

Client Sample Results

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Client Sample ID: 436503 SC_13

Lab Sample ID: 160-35811-10

Matrix: Water

Date Collected: 09/25/19 11:15
Date Received: 09/27/19 08:55

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.297	U	0.413	0.413	1.00	0.688	pCi/L	11/01/19 13:23	11/06/19 12:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.4		40 - 110					11/01/19 13:23	11/06/19 12:46	1
Y Carrier	80.7		40 - 110					11/01/19 13:23	11/06/19 12:46	1

Client Sample ID: 436504 SC_13 DUPLICATE

Lab Sample ID: 160-35811-11

Matrix: Water

Date Collected: 09/25/19 11:15
Date Received: 09/27/19 08:55

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.263		0.167	0.169	1.00	0.238	pCi/L	10/01/19 17:10	10/23/19 22:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	53.4		40 - 110					10/01/19 17:10	10/23/19 22:48	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.454	U	0.491	0.493	1.00	0.804	pCi/L	11/01/19 13:23	11/06/19 12:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		40 - 110					11/01/19 13:23	11/06/19 12:46	1
Y Carrier	78.1		40 - 110					11/01/19 13:23	11/06/19 12:46	1

Client Sample ID: 436505 SC_14

Lab Sample ID: 160-35811-12

Matrix: Water

Date Collected: 09/25/19 11:53
Date Received: 09/27/19 08:55

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.153	U	0.136	0.137	1.00	0.209	pCi/L	10/01/19 17:10	10/23/19 22:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	54.0		40 - 110					10/01/19 17:10	10/23/19 22:48	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.465	U	0.373	0.375	1.00	0.591	pCi/L	11/01/19 13:23	11/06/19 12:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.6		40 - 110					11/01/19 13:23	11/06/19 12:46	1

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Client Sample Results

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Client Sample ID: 436505 SC_14

Lab Sample ID: 160-35811-12

Date Collected: 09/25/19 11:53

Matrix: Water

Date Received: 09/27/19 08:55

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits
Y Carrier	80.4		40 - 110

Prepared	Analyzed	Dil Fac
11/01/19 13:23	11/06/19 12:46	1

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QC Sample Results

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-444735/19-A

Matrix: Water

Analysis Batch: 447440

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 444735

Analyte	Result	MB	MB	Count		Total		RL	MDC	Unit	Prepared	Analyzed	Dil Fac
				Uncert.	(2σ+/-)	Uncert.	(2σ+/-)						
Radium-226	0.1325			0.0906		0.0914		1.00	0.123	pCi/L	10/01/19 18:02	10/23/19 22:49	1
<i>Carrier</i>		<i>MB</i>	<i>MB</i>								<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier		%Yield	Qualifier	Limits							10/01/19 18:02	10/23/19 22:49	1
		76.6		40 - 110									

Lab Sample ID: LCS 160-444735/1-A

Matrix: Water

Analysis Batch: 447440

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 444735

Analyte	Spike	LCS	LCS	Total		RL	MDC	Unit	%Rec	%Rec.	Limits		
				Added	Result	Qual	Uncert.	(2σ+/-)					
Radium-226				11.4	11.44			1.22	1.00	0.143	pCi/L	101	75 - 125
<i>Carrier</i>	<i>LCS</i>	<i>LCS</i>											
Ba Carrier	%Yield	Qualifier	Limits										
	74.6		40 - 110										

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-448552/19-A

Matrix: Water

Analysis Batch: 449305

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 448552

Analyte	Result	MB	MB	Count		RL	MDC	Unit	Prepared	Analyzed	Dil Fac
				Uncert.	(2σ+/-)						
Radium-228	-0.1556		U	0.365		0.365	0.671	pCi/L	11/01/19 13:23	11/06/19 12:47	1
<i>Carrier</i>	<i>MB</i>	<i>MB</i>							<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	%Yield	Qualifier	Limits						11/01/19 13:23	11/06/19 12:47	1
Y Carrier	92.8		40 - 110						11/01/19 13:23	11/06/19 12:47	1

Lab Sample ID: LCS 160-448552/1-A

Matrix: Water

Analysis Batch: 449235

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 448552

Analyte	Spike	LCS	LCS	Total		RL	MDC	Unit	%Rec	%Rec.	Limits		
				Added	Result	Qual	Uncert.	(2σ+/-)					
Radium-228				12.6	12.09			1.59	1.00	0.815	pCi/L	96	75 - 125
<i>Carrier</i>	<i>LCS</i>	<i>LCS</i>											
Ba Carrier	%Yield	Qualifier	Limits										
	66.1		40 - 110										
Y Carrier	79.3		40 - 110										

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QC Sample Results

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-448552/2-A

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 449235

Prep Batch: 448552

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	12.6	13.71		1.68	1.00	0.720	pCi/L	109	75 - 125	0.49	1
<hr/>											
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	76.6		40 - 110								
Y Carrier	78.1		40 - 110								

QC Association Summary

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Rad

Prep Batch: 444735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35811-1	436493 CC_1	Total/NA	Water	PrecSep-21	
160-35811-2	436494 FC_1	Total/NA	Water	PrecSep-21	
160-35811-3	436495 FC_1 DUPLICATE	Total/NA	Water	PrecSep-21	
160-35811-4	436496 FC_2	Total/NA	Water	PrecSep-21	
160-35811-5	436497 FC_3A	Total/NA	Water	PrecSep-21	
160-35811-6	436498 FC_3B	Total/NA	Water	PrecSep-21	
160-35811-7	436500 SC_10	Total/NA	Water	PrecSep-21	
160-35811-8	436501 SC_11	Total/NA	Water	PrecSep-21	
160-35811-9	436502 SC_12	Total/NA	Water	PrecSep-21	
160-35811-10	436503 SC_13	Total/NA	Water	PrecSep-21	
160-35811-11	436504 SC_13 DUPLICATE	Total/NA	Water	PrecSep-21	
160-35811-12	436505 SC_14	Total/NA	Water	PrecSep-21	
MB 160-444735/19-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-444735/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 448552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-35811-1	436493 CC_1	Total/NA	Water	PrecSep_0	
160-35811-2	436494 FC_1	Total/NA	Water	PrecSep_0	
160-35811-3	436495 FC_1 DUPLICATE	Total/NA	Water	PrecSep_0	
160-35811-4	436496 FC_2	Total/NA	Water	PrecSep_0	
160-35811-5	436497 FC_3A	Total/NA	Water	PrecSep_0	
160-35811-6	436498 FC_3B	Total/NA	Water	PrecSep_0	
160-35811-7	436500 SC_10	Total/NA	Water	PrecSep_0	
160-35811-8	436501 SC_11	Total/NA	Water	PrecSep_0	
160-35811-9	436502 SC_12	Total/NA	Water	PrecSep_0	
160-35811-10	436503 SC_13	Total/NA	Water	PrecSep_0	
160-35811-11	436504 SC_13 DUPLICATE	Total/NA	Water	PrecSep_0	
160-35811-12	436505 SC_14	Total/NA	Water	PrecSep_0	
MB 160-448552/19-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-448552/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-448552/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Tracer/Carrier Summary

Client: Colorado Springs Utilities
Project/Site: Coal Combustion Rule

Job ID: 160-35811-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba Carrier (40-110)	
160-35811-1	436493 CC_1	63.8	
160-35811-2	436494 FC_1	62.4	
160-35811-3	436495 FC_1 DUPLICATE	64.1	
160-35811-4	436496 FC_2	64.4	
160-35811-5	436497 FC_3A	72.0	
160-35811-6	436498 FC_3B	81.6	
160-35811-7	436500 SC_10	60.5	
160-35811-8	436501 SC_11	68.6	
160-35811-9	436502 SC_12	75.7	
160-35811-10	436503 SC_13	66.1	
160-35811-11	436504 SC_13 DUPLICATE	53.4	
160-35811-12	436505 SC_14	54.0	
LCS 160-444735/1-A	Lab Control Sample	74.6	
MB 160-444735/19-A	Method Blank	76.6	

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba Carrier (40-110)	Y Carrier (40-110)
160-35811-1	436493 CC_1	77.8	81.1
160-35811-2	436494 FC_1	74.5	82.6
160-35811-3	436495 FC_1 DUPLICATE	89.2	80.4
160-35811-4	436496 FC_2	88.6	80.0
160-35811-5	436497 FC_3A	91.3	80.7
160-35811-6	436498 FC_3B	90.4	83.4
160-35811-7	436500 SC_10	62.2	80.7
160-35811-8	436501 SC_11	89.8	80.0
160-35811-9	436502 SC_12	85.6	78.1
160-35811-10	436503 SC_13	90.4	80.7
160-35811-11	436504 SC_13 DUPLICATE	84.7	78.1
160-35811-12	436505 SC_14	94.6	80.4
LCS 160-448552/1-A	Lab Control Sample	66.1	79.3
LCSD 160-448552/2-A	Lab Control Sample Dup	76.6	78.1
MB 160-448552/19-A	Method Blank	92.8	80.7

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Y Carrier = Y Carrier

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